HEALTH CARE PROFESSIONALS’ FAMILIARITY WITH NON-PHARMACOLOGICAL STRATEGIES FOR MANAGING CANCER PAIN

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SUMMARY

Many studies have confirmed unnecessary suffering among cancer patients, due to the inadequate use of analgesic medication and other effective interventions. While pharmacological treatments are appropriately the central component of cancer pain management, the under-utilization of effective nonpharmacological strategies (NPS) may contribute to the problem of pain and suffering among cancer patients. The purpose of this study was to determine health care professionals’ familiarity with, and perceptions regarding, NPS for managing cancer pain, and to assess their interest in learning more about NPS as adjuncts to pharmacological analgesics. Two-hundred and fourteen health care professionals were surveyed at two cancer treatment centres in Ontario, Canada. The self-report questionnaire included questions regarding 11 psychological strategies (e.g. imagery) and eight other NPS (e.g. acupuncture). The response rate was 67% (141/214). Subjects were found to be the least familiar with autogenic training, operant conditioning, and cognitive therapy. Other than radiation and surgery, subjects most commonly reported recommending support groups (67%), imagery (54%), music or art therapy (49%) and meditation (43%) for managing cancer pain. Participants were most interested in learning more about acupuncture, massage therapy, therapeutic touch, hypnosis, and biofeedback. Participants were somewhat familiar with most of the 19 NPS presented; however, they use or recommend few NPS for managing cancer pain. Health professionals’ interest in NPS has important implications for the supportive care of cancer patients. Copyright © 1999 John Wiley & Sons, Ltd.

INTRODUCTION

Pain remains a major concern for cancer patients as well as for those who work with patients and their families (Foley, 1985; Greenwald et al., 1987; Dorrepaal et al., 1989; Patt, 1993). It is estimated that 50–80% of patients with metastatic cancer have pain (Foley, 1979; Ahles, 1987; Cleeland et al., 1994), and many studies have confirmed that a significant number of cancer patients suffer unduly from the inadequate use of analgesic medication and other effective interventions (Foley, 1985; Greenwald et al., 1987; Dorrepaal et al., 1989; Portenoy, 1990; Patt, 1993; Cleeland et al., 1994). Pain is a distressing and feared consequence of cancer (Foley, 1985), and is an important factor in cancer patients’ quality of life (Portenoy, 1990; Skeel, 1993).

The management of cancer pain is centred on pharmacological approaches, with less attention to effective psychological and other non-pharmacological techniques (Foley, 1985; Patt, 1993; Cleeland et al., 1994; Stjernsward et al., 1996). Although it is appropriate that pharmacological therapies are the mainstay of cancer pain management, the under-utilization of effective non-phar-
macological strategies may contribute to the documented unnecessary suffering among cancer patients.

Several psychosocial and other NPS are standard components in the treatment of chronic non-malignant pain (Turk et al., 1983; Altmaier et al., 1992; Gamsa, 1994). Considering the relationship between psychological distress and chronic pain, whether malignant or non-malignant (Turk and Fernandez, 1990; Millard, 1993), these techniques are also considered to be appropriate along with analgesic interventions in cancer patients (Turk et al., 1983; Turk and Fernandez, 1990; Millard, 1993; Patt, 1993; Fields, 1995; McGrath, 1996). While NPS are not intended to replace pharmacological analgesics, they are adjuncts which may improve overall pain management by increasing the effects of medication, and by increasing perceived control among patients. As Rhiner et al. (1993) point out, the use of non-drug interventions with cancer patients also benefits caregivers.

Several reviews examine the effectiveness of NPS in oncology populations (Jay et al., 1986; Davis et al., 1987; Sims, 1987; Dalton and Feuerstein, 1988; Redd et al., 1991; Anderson, 1992; Emmelkamp and Van Oppen, 1993; Fawzy et al., 1995; Meyer and Mark, 1995). The two most rigorous reviews (Fawzy et al., 1995; Meyer and Mark, 1995) conclude that psychological techniques are effective for managing pain, for reducing conditioned side-effects of chemotherapy and for improving quality of life. Further support for the integration of psychosocial NPS into cancer pain management is found in several clinical practice guidelines and recommendations for cancer pain relief (World Health Organization, 1990; ASCO, 1992; Jacox et al., 1994; American Pain Society Quality of Care Committee, 1995; Fields, 1995). While the main focus of these initiatives is on pharmacological techniques, all of these agencies recommend the use of several NPS in cancer pain management. In particular, the integration of psychosocial techniques (considered as alternative or complementary therapies by many) as adjuncts to existing cancer pain management practice is recommended by clinical practice guidelines by the World Health Organization (World Health Organization, 1990), the US Agency for Health Care Policy and Research (Jacox et al., 1994), the International Association for the Study of Pain, the American Society of Clinical Oncology (ASCO, 1992), and the American Pain Society (American Pain Society Quality of Care Commit-
tee, 1995). The AHCPR Patient Guide advises patients to talk to their doctors and nurses about non-drug therapies, including biofeedback, massage, relaxation, etc., as health care professionals ‘will be able to give you more information’ (Agency for Health Care Policy and Research, 1994, p. 1235). Since most cancer patients prefer and expect their care to be directed by their physician (Siminoff et al., 1989; Siminoff and Fetting, 1991; Leis et al., 1994), health care professionals’ familiarity with a wide range of effective pharmacological and non-pharmacological analgesics is vital to adequate pain relief. Nevertheless, the limited available research suggests that NPS may be under-utilized in managing cancer pain (Leis et al., 1994; Clarke et al., 1996).

Health professionals’ knowledge and attitudes determine their use of pharmacological analgesics (Ferrell et al., 1991; McCaffrey, 1992; Von Roenn et al., 1993; Ward and Gatwood, 1994) and may also be important determinants of their use of NPS. The under-utilization of effective NPS may represent an additional barrier to achieving adequate relief of cancer pain; however, most studies of the barriers to the adequate management of cancer pain focus primarily on pharmacological analgesics (Cleeland, 1987; Von Roenn et al., 1993; Ward and Gatwood, 1994). Identifying and understanding the barriers to the use of NPS in the standard care of patients is the first step toward comprehensive cancer pain management.

**Purpose**

The purpose of this study was to assess health care professionals’ familiarity with perceptions regarding, and interest in, using 19 NPS for managing cancer pain.

**SUBJECTS AND METHODS**

**Setting**

Health care professionals from the Hamilton Regional Cancer Centre (HRCC), in southwestern Ontario, and the Northwestern Ontario Regional Cancer Centre in Thunder Bay Ontario (NWORCC) were invited to participate in the study. These are two of the eight Ontario Cancer Treatment and Research Foundation centres in the province of Ontario. One of the largest cancer
treatment centres in Ontario, the HRCC, manages approximately 4700 new patients per year (OC-TRF, 1994–1995). The NWORCC is one of the smallest centres, with approximately 700 new patients per year (OC-TRF, 1994–1995).

Annually, these two centres manage an ongoing caseload of approximately 200000 patients, and over 2000000 patient visits. There are approximately 214 health care professionals at the HRCC and the NWORCC, combined. Both centres are fully equipped for outpatient ambulatory cancer care, are licensed, and are attached to a host acute care hospital. Patients at both centres participate in National Cancer Institute of Canada clinical trials. While medical treatments available at the centres are standard within the province, there is some variation, most notably, at present, among the supportive care services available at each centre.

**Measurement**

The self-report questionnaire included questions regarding 11 psychosocial NPS and eight other NPS (Table 1). The list was developed in consultation with clinicians specializing in oncology, pain management, and psychology, and the survey was pre-tested on ten health professionals who did not participate in the main study. The objective of the study was to examine health care professionals' familiarity with psychosocial techniques used for controlling chronic non-malignant pain. Other NPS were included for comparison purposes. For example, radiation and surgery may represent a ‘benchmark’ for familiarity as they are available to patients in all Ontario cancer centres, and would, therefore, be familiar to the respondents. A brief explanatory description for each NPS was not provided with the rationale that those who were familiar with an NPS would know what the therapy was. The questions did not differentiate between types of cancer pain, and did not operationally define ‘pain management’.

Respondents’ opinions regarding the nature of cancer pain was assessed by asking them to rate their agreement, on a 5-point scale, with the statement: ‘chronic cancer pain is different from chronic non-cancer pain.’ Participants’ familiarity with their Centre’s resources (e.g. cassette tapes, videos, books, personnel) for themselves and for patients was also assessed. Familiarity with the 19 NPS was measured on a 4-point scale ranging from 1 = ‘I’ve never heard of it’ to 4 = ‘I know what it is and I use/recommend it for managing cancer pain’. This question specified that ‘use’ referred to the respondents’ clinical use of the NPS, not their personal use of the NPS. Those who used the techniques for purposes other than managing pain could indicate this by checking a column beside the scale.

Five-point scales were used to measure perceptions regarding the effectiveness of the NPS for managing cancer pain, and the risk of the NPS producing severe adverse effects. To measure perceived patient usage of the NPS, participants placed an ‘X’ on a 10 cm line marked from 0–100%, to indicate the percentage of their patients who ask about or use the NPS for managing pain.

Interest in learning more about the therapies for managing cancer pain was measured by asking participants to identify the five therapies they would be most interested in learning more about through continuing education sessions, and to rank their choices from 1 to 5, with 1 indicating the most preferred. Finally, space was available for comments about the therapies included and not included on the questionnaire. Awareness of research on the NPS for managing chronic non-cancer pain was measured (yes/no).

**Data collection**

Using a current list of personnel at the two Centres, surveys were sent to health professionals who had clinical contact with patients for pain and symptom management (e.g. oncologists, nurses, social workers). Radiation therapists were included because radiation is used for managing...
pain, and because these professionals sometimes address patients’ questions concerning cancer pain. The survey was introduced at staff meetings whenever possible. Staff who did not wish to participate were asked to complete the one-page demographic information page of the survey package. Reminder and thank-you notices were sent and posted on bulletin boards after the surveys had been distributed.

Analysis

The data were entered into a Paradox 4.0 database, using double-entry and field range checks for accuracy. Descriptive and multivariable analyses were performed using the SAS version 6.10 statistical analysis program. Differences between the professional disciplines were examined in one-way analysis of variance.

Multivariable analyses, using multiple linear regression and multiple logistic regression, were used to examine factors associated with: (1) health professionals' interest in continuing education sessions (denoted ‘interest’); and, (2) their perceptions regarding the effectiveness of the NPS for managing cancer pain (denoted ‘effectiveness’). Interest and effectiveness were treated as outcome (dependent) variables. Explanatory variables included gender, age, clinical specialty, familiarity with the therapies, perceived risk of producing adverse effects, awareness of research, perceived usage by patients for pain or for any other purpose, and perception regarding the nature of cancer pain. To examine predictors for interest, logistic regression analyses were performed. The outcome variable was dichotomized such that if a therapy was selected as one of the top five, regardless of ranking order, it was coded as 1, and if it was not selected, it was coded as 0. To examine factors associated with effectiveness, multiple linear least-squares regression models were used. Because gender and professional discipline were confounders, each was examined separately in the analyses.

RESULTS

Descriptive analyses

One-hundred and forty-one health care professionals (67% response rate) completed and returned their questionnaire, and 11 non-respondents completed and returned their demographic information sheet. Study participants included 37 oncologists and other physicians, 51 nurses, 40 radiation therapists, and a group of ‘others’, which included dieticians, social workers, pharmacists, and pastoral counsellors. One respondent did not state his or her gender or professional discipline. An examination of response by professional discipline indicates that there is good representation from each professional group surveyed. Gender and professional discipline were highly correlated in that 89% of physicians were male, whereas 100% of the nurses, 75% of radiation therapists, and 92% of the others were female. The mean age of the sample was 39 years (range: 25–65 years), and participants had an average of 14 years of professional experience (range: 1–39 years).

The majority of health care professionals perceived chronic cancer pain to be different from chronic non-cancer pain. More participants were aware of their centre’s resources on NPS for patients than resources on NPS for staff, and many expressed uncertainty as to what was available at their Centre. In general, respondents were more familiar with resources which were personnel and books, and less familiar with tape and video resources.

On average, 20% of respondents wrote comments about the therapies, and more (30%) commented on chiropractic than on any other NPS. In general, comments regarding all NPS related to concerns about harmful effects, effectiveness, cost to patient, and training or certification of personnel performing the therapy. For example, several expressed concern that massaging a tumour would be ‘bad’ and might promote tumour growth, and that chiropractic would be dangerous if a patient had bone metastases. A few positive comments were given, and some participants stated that more education is needed in this area for health care professionals.

Familiarity with the NPS. Over half of participants reported using imagery (50%), surgery (64.5%), support groups (69.5%) and radiation (87%) for managing cancer pain. Over 50% of the sample reported that they knew but did not use chiropractic (79%), acupuncture (67%), hypnosis (62%), massage (62%) and prayer (53%) for managing cancer pain. Autogenic training, operant conditioning, and cognitive therapy were the most
unfamiliar NPS: 64% of respondents had never heard of autogenic training, 46% had never heard of operant conditioning, and 26% had never heard of cognitive therapy. An additional 21–29% expressed uncertainty as to what these three therapies are. Several of the NPS were used or recommended by health professionals for purposes other than managing cancer pain, most notably: acupuncture, chiropractic, massage, meditation, prayer, PMR, support groups, and imagery.

The professional disciplines differed in their familiarity with biofeedback ($p = 0.009$), cognitive therapy ($p = 0.008$), music or art therapy ($p = 0.005$), operant conditioning ($p = 0.054$), radiation ($p = 0.001$), TENS/Codetron ($p < 0.001$), and therapeutic touch ($p < 0.000$) (Figure 1). Almost all physicians and radiation therapists used radiation (for managing cancer pain), and most physicians reported using surgery. Compared with the other professional disciplines, physicians were more familiar with biofeedback and TENS/Codetron for managing cancer pain. Nurses were more familiar with hypnosis, music or art therapy, cognitive therapy, and operant conditioning, than the other health professionals. Ninety percent of nurses were very familiar with therapeutic touch, with 43% using it for managing cancer pain.

**Perceived effectiveness.** With few exceptions, responses regarding perceptions of effectiveness of the NPS for managing cancer pain were more or less evenly distributed across the 5-point scale (1 = not at all effective, 5 = extremely effective).
Radiation and surgery were rated as effective for managing cancer pain (4 or 5/5) by 84%, and 50% of respondents, respectively: no other therapy was rated as highly by as many respondents. Other notable exceptions include chiropractic and prayer, which were rated as not effective for managing cancer pain (1 or 2/5) by 42 and 28% of respondents, respectively.

Over 60% of respondents had no opinion regarding the effectiveness of autogenic training (85%), operant conditioning (77%), and cognitive therapy (64%). There were no differences among the professional disciplines for these three unfamiliar NPS.

Differences among professional discipline were found for the perceived effectiveness of individual psychotherapy ($p = 0.011$), meditation ($p = 0.063$), music or art therapy ($p = 0.024$), support groups ($p = 0.014$), and therapeutic touch ($p < 0.000$) (Figure 2).

In general, physicians perceived psychotherapy, meditation, music/art therapy, and therapeutic touch as less effective than the other professionals. As a group, nurses rated therapeutic touch much higher (3.7 on the 5-point scale) than the others, and physicians rated it as the lowest (2.1/5). The group ‘other’ rated support groups highest (3.6/5), and radiation therapists rated it the lowest (2.7/5) of all the groups.

**Perceived patient use.** Health professionals perceived that fewer than 10% of their patients used or asked about nine NPS: autogenic training (1%), operant conditioning (2%), cognitive therapy (3%), biofeedback (3%), hypnosis (5%), acupuncture (6%), therapeutic touch (6%), TENS/
Codetron (6%), and massage (9%). Participants estimated that 11–19% use or ask them about imagery, chiropractic, or psychotherapy; 20–30% of patients use or ask them about surgery, support groups, or prayer; and, 57% of their patients use or ask them about radiation.

Differences among the professional disciplines were found for perceived patient use of chiropractic \( (p = 0.037) \), music or art therapy \( (p = 0.008) \), progressive muscle relaxation \( (p = 0.048) \), radiation \( (p < 0.000) \), support groups \( (p < 0.000) \), and approached statistical significance for psychotherapy \( (p = 0.088) \) and therapeutic touch \( (p = 0.067) \) (Figure 3).

Perceived usage of radiation (for managing pain) was the highest for radiation therapists (77%) and physicians (59%). Physicians and nurses perceived higher patient usage or inquiry of support groups (12 and 8%, respectively) and chiropractic (16.5 and 14%, respectively). Nurses perceived the highest patient usage or inquiry about music or art therapy (16%), progressive muscle relaxation (14%), and therapeutic touch (8.6%). Forty-three percent of health care professionals perceived radiation and support groups to be used often by their patients for purposes other than managing cancer pain, such as improving quality of life, and 35% perceived prayer to be used often for purposes other than pain management.

Perceived risk. Over half of respondents rated prayer, imagery, music/art therapy, meditation, therapeutic touch, progressive muscle relaxation, and support groups as having no risk at all (1 on the 5-point scale). Chiropractic, radiation, and surgery were rated as risky (4 or 5/5) by 31, 25 and 18% of respondents, respectively. Over half of
the respondents had no opinion of the risk posed by autogenic training (82%), operant conditioning (77%), or cognitive therapy (57%). Differences between the professional disciplines were statistically significant for support groups (p = 0.021), and marginally significant for hypnosis (p = 0.052) and massage therapy (p = 0.045). Physicians and nurses perceived support groups to be more risky (1.6) than radiation therapists and others (1.2/5). Nurses perceived hypnosis as more risky (1.8/5) than physicians (1.3/5), radiation therapists (1.5/5) and ‘others’ (1.4/5). The group of ‘others’ perceived massage therapy to have the lowest risk (1.1/5), compared with physicians (1.6/5), nurses (1.8/5) and radiation therapists (1.9/5). Although statistically significant, these differences are very small, and none of these NPS were rated higher than 1.8 on the 5-point scale.

Interest. In order of preference, health care professionals rated acupuncture, massage, hypnosis, biofeedback, and therapeutic touch as the five therapies they would be most interested in learning about through continuing education sessions. Differences between the professional disciplines were found for acupuncture (p = 0.039), autogenic training (p = 0.009), chiropractic (p = 0.036), cognitive therapy (p = 0.009), hypnosis (p = 0.010), radiation (p = 0.003), support groups (p = 0.010), and therapeutic touch (p = 0.001).

Compared with other health professionals, physicians were more interested in acupuncture and hypnosis, and, along with radiation therapists, were most interested in chiropractic. Radiation therapists were also more interested in autogenic training. None of the radiation therapists were interested in learning more about radiation for managing cancer pain, but this strategy was of interest to physicians and ‘others’. Others were also interested in cognitive therapy and support groups were of greatest interest to the group of ‘others’. Physicians were the least interested in support groups and therapeutic touch. Nurses were the group most interested in therapeutic touch. Figure 4 illustrates the percentage of each professional group who were interested in these NPS.

Multivariable analyses

Interest. Logistic regression was used to examine factors associated with health professionals’ interest in learning more about the five selected NPS (Table 2). As previously discussed, gender and professional discipline were examined separately. For acupuncture and therapeutic touch, gender, but not professional discipline, was a significant predictor in the multivariable model. Whereas professional discipline did not predict interest in biofeedback, gender was the single significant predictor. Although gender and professional discipline were significant predictors for interest in hypnosis, gender produced the best fitting model. Similarly, for interest in massage therapy, both gender and professional discipline approached statistical significance, with gender producing the better fitting model. To summarize, gender was the most predictive factor in that males were more likely to be interested in acupuncture, biofeedback, and hypnosis, and were less likely to show interest in therapeutic touch.

Other predictive factors included familiarity, perceived risk of adverse effects, and estimated patient usage. Participants who perceived acupuncture to have a higher risk of producing severe adverse effects were less interested in learning more about it (OR = 0.53, p = 0.04). Those who were more familiar with hypnosis and with massage therapy and were at least twice as likely to show interest in these therapies (OR = 1.98, p = 0.04; OR = 2.42, p = 0.04). Participants who perceived therapeutic touch to be used often by their patients for any purpose, were more interested in learning about it (OR = 1.93, p = 0.01).

Effectiveness. Factors associated with health professionals’ perceived effectiveness of the five selected NPS were examined in multiple linear least-squares regression (Table 3). Health professionals who were familiar with biofeedback, hypnosis, and therapeutic touch, were more likely to perceive these NPS to be effective for managing cancer pain. Participants who were aware of research on the effectiveness of biofeedback, hypnosis, massage therapy, and therapeutic touch for managing chronic non-cancer pain perceived these NPS to be more effective for managing cancer pain.

In general, gender and professional discipline performed similarly in the models for each of the five therapies, and including both resulted in neither being significant in the presence of the other. Neither gender nor professional discipline predicted perceived effectiveness of acupuncture,
biofeedback, or hypnosis. Professional discipline approached significance as a predictor for massage therapy; however, gender was a statistically significant predictor, and produced a better fitting model. For therapeutic touch, both professional discipline and gender were significant predictors, and either could be included in the final model.

DISCUSSION

This study suggests that health care professionals are somewhat familiar with several of the 19 NPS presented on the survey, but use or recommend few of them for managing cancer pain. This finding is consistent with other surveys which report that health professionals in oncology settings are relatively unfamiliar with, and rarely recommend, non-pharmacological interventions (including psychosocial strategies) to relieve cancer pain (Leis et al., 1994; Clarke et al., 1996). This may not be surprising, since many NPS are not available at cancer treatment centres. These results may be generalizable to other cancer centres with similar composition of supportive care personnel. That is, professionals who work in centres with more supportive care services may be more familiar with psychosocial and other NPS for managing cancer pain.

The decision to list the NPS without a description is recognized as a limitation of the study. Also, the survey may have been compromised because different types of cancer pain (e.g. neurogenic, visceral, etc.) were not specified in questions regarding cancer pain, and ‘managing pain’ was not operationally defined on the survey. There were no criteria for the selection of the 19
Table 2. Best fitting logistic regression models examining health care professionals’ interest in attending continuing education sessions on Acupuncture, Biofeedback, Hypnosis, Massage and Therapeutic Touch

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>p Value</th>
<th>OR</th>
<th>95% CI</th>
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<td>Intercept</td>
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<td>0.0298</td>
<td>0.526</td>
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<td>Hypnosis</td>
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<td></td>
</tr>
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<td>Familiarity</td>
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<td>Massage Therapy</td>
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<tr>
<td>Intercept</td>
<td>-0.3789</td>
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<td>Professional use: other</td>
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<td>Patient use: other</td>
<td>0.6573</td>
<td>0.0114</td>
<td>1.930</td>
<td>1.1598</td>
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OR = odds ratio.
CI = confidence interval.
Familiarity: other = health care professional uses or recommends the NPS for purposes other than cancer pain management.
Risk = perceived risk of the therapy producing adverse effects.
Pain = perception regarding the nature of chronic cancer pain compared with non-malignant chronic pain.
Patient use: other = use of the therapy for purposes other than managing cancer pain.

NPS, and, other than attempting to present NPS with a range of familiarity, there was no further rationale for their selection.

Because some of the variables were not defined on the questionnaire, there may be a concern about error variance due to the possible significant variation in how respondents interpreted and answered the questions. This possible measurement error would reduce the power of the study to show significant relationships between the dependent and independent variables. The measurement error would be related to how the independent variables were measured, and would reduce the study’s power; however, the level of the significance test (i.e. type I error) would not be affected. In other words, the tests of significance are less than or equal to the p-value that we calculated in the analyses. Therefore, even if power were reduced in this study, we were still able to demonstrate statistical significance at the 0.05 level.

The influence of professional discipline on the findings could not be adequately examined apart from gender, as these variables confounded one another. Although gender was a stronger predictor of perceived effectiveness and of interest, it is possible, and perhaps likely, that these differences reflect variations between the professional disciplines.

It is significant that health care professionals’ interest in acupuncture, biofeedback, hypnosis, massage, and therapeutic touch, was not based on how effective they perceived these NPS to be. Nor was their interest based on perceived patient usage of the NPS for managing pain, as respondents estimated that fewer than 10% of their patients...
Table 3. Results from multiple linear regression: perceived effectiveness of Acupuncture, Biofeedback, Hypnosis, Massage and Therapeutic Touch

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>p Value</th>
<th>95% CI</th>
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<td>-0.3174</td>
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<td>Biofeedback: $R^2 = 0.3200$</td>
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</tr>
<tr>
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<td>Familiarity</td>
<td>0.3621</td>
<td>0.0213</td>
<td>0.3203</td>
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<tr>
<td>Awareness</td>
<td>-0.4328</td>
<td>0.0239</td>
<td>-0.4796</td>
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<td>Massage Therapy: $R^2 = 0.2487$</td>
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<tr>
<td>Intercept</td>
<td>2.7192</td>
<td>0.0001</td>
<td></td>
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<tr>
<td>Patient use: pain</td>
<td>0.0244</td>
<td>0.0001</td>
<td>0.0242</td>
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<tr>
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<td>0.0068</td>
<td>-0.4551</td>
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<tr>
<td>Gender</td>
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<td>0.0240</td>
<td>0.3093</td>
</tr>
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<td>Therapeutic Touch: $R^2 = 0.3279$</td>
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<tr>
<td>Intercept</td>
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<td>0.0002</td>
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<td>0.0258</td>
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<td>Awareness</td>
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<td>Familiarity</td>
<td>0.3129</td>
<td>0.0142</td>
<td>0.2851</td>
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</table>

CI = confidence interval.

Patient use: pain = health care professionals' estimate of the percentage of their patients who use or ask about the therapy for managing cancer pain.

use or ask about these therapies for managing pain. The accuracy of respondents' estimates of patient usage is questionable, and must be verified by patients directly. Nevertheless, understanding health care professionals' motivations for wanting to learn more about certain NPS and not others warrants further investigation. The role of familiarity in determining interest is unclear, as familiarity predicted respondents interest in only two of the five NPS.

Although the majority of respondents believed chronic cancer pain and chronic non-cancer pain are substantively different, this belief did not affect health care professionals' interest in the five selected NPS, and, with the possible exception of biofeedback, did not affect their perceptions of the effectiveness of NPS for managing cancer pain. Yet findings from this and other studies (Leis et al., 1994; Clarke et al., 1996) reflect a biomedical approach to cancer pain management, whereas other chronic pain conditions are managed with a multidisciplinary approach. The majority of NPS on this survey are standard psychosocial therapies for managing chronic non-malignant pain. Much has been written about the similarities between cancer pain and non-cancer pain (Turk and Fernandez, 1990; Millard, 1993), and the differences between cancer pain and non-cancer pain support rather than oppose the use of NPS for cancer patients. It can be argued that attention to psychosocial factors related to cancer pain may be even more important in cancer, where survival is often a primary concern. For example, the meaning of pain is an important factor in an individual's pain experience. Cancer patients who misinterpret any pain as a sign that their disease is progressing may experience fear, suffering, and loss of hope—all of which can exacerbate pain. Education and cognitive strategies directed at reappraisal may enable and empower patients.
Our findings may be important in guiding efforts to develop educational initiatives and practice guidelines for the use of NPS in managing cancer pain. That is, education efforts should focus on describing therapies which may not be familiar to health personnel working in an oncology setting, and providing information on their effectiveness for managing pain and other symptoms. Advocating the use of NPS without addressing the information needs of the practitioners who would use or recommend them may be less likely to result in integration into standard supportive care.

With over half of people with cancer using a variety of alternative therapies (Cassileth et al., 1984), health care professionals are called upon to make judgements about the myriad of therapies which they may have never heard of, now more than ever before. It is incumbent upon health care professionals to become informed about what is available, and make thoughtful and evidence-based statements about therapies that are shown to be effective, those not shown to be effective, and those where evidence of effectiveness is not available.

Overcoming the problem of inadequate cancer pain relief requires a comprehensive approach based on the use of all effective and cost-effective analgesic strategies. To that end, it is essential to develop continuing education sessions that are driven by research, and it is equally as important to evaluate their impact on clinical practice. The results of this survey have led to education sessions on the effectiveness of the five therapies of most interest to the participants. The impact of these sessions on perceptions and clinical practice will be assessed in future work.

ACKNOWLEDGEMENTS

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REFERENCES


