Pain Severity, Satisfaction With Pain Management, and Patient-Related Barriers to Pain Management in Patients With Cancer in Israel

Pnina Naveh, RN, MA, Rinati Leshem, RN, BA, Yossi Freier Dror, MA, and Catherine F. Musgrave, RN, DNSc

Cancer pain is a worldwide problem in developing and developed countries (Davis & Walsh, 2004), including Israel (Cohen, Musgrave, McGuire, et al., 2005; Shvartzman et al., 2003). In their examination of the incidence of pain in three Israeli oncology clinics, Shvartzman et al. (2003) reported that 42% of the patients were experiencing moderate to severe pain and 36% were undermedicated. In a large pan-European study, 88% of patients with cancer contacted in Israel reported that they had experienced pain several times a month or more (Breivik et al., 2009). In an effort to improve cancer pain control, the oncology nursing management of a leading Israeli hospital began designing quality assurance and improvement programs. This article describes a survey study conducted for this purpose.

Background

The American Pain Society recommended patient involvement as a primary focus for improving the quality of cancer pain management (Gordon et al., 2005). Patient satisfaction measures also have an important function in evaluating the effectiveness of pain management (Ward & Gordon, 1994). In addition, pain intensity in patients with cancer has demonstrated a significant relationship with how clinicians treat pain (Lin, 2000; Panteli & Patistea, 2007). This notion supports the initial strategy of nursing service to assess pain severity and satisfaction with pain control among patients with cancer. However, literature on Israeli patients with cancer and satisfaction with their pain control is lacking.

Patients' beliefs about reporting pain and using analgesics have an important function in their pain levels (Vallerand, Templin, Hasenau, & Riley-Doucet, 2007) and

Purpose/Objectives: To examine pain severity, satisfaction with pain management, and patient-related barriers to pain management among patients with cancer in oncology units at a teaching hospital in Israel.

Design: Descriptive, cross-sectional, correlational design.

Setting: Oncology, hematology, and bone marrow transplantation (BMT) departments; oncology, hematology, and BMT daycare units; and a radiation department in an Israeli hospital.

Sample: Nonprobability convenience sample (N = 144) of ambulatory (n = 76) and hospitalized (n = 68) patients experiencing pain in the past 24 hours.

Methods: Patients who had experienced pain in the past 24 hours completed the Revised American Pain Society–Patient Outcome Questionnaire, the Barriers Questionnaire–Short Form, and a demographic data questionnaire.

Main Research Variables: Pain severity, satisfaction with pain management, and patient-related barriers to pain management.

Findings: A significant inverse relationship was observed between patients' pain severity and their expectation of pain relief. Less-educated patients had significantly higher pain severity scores. Ambulatory patients waited longer for their pain medication than hospitalized patients. The greatest barriers to pain control were fear of addiction and the notion that medication should be saved in case the pain gets worse. In addition, ambulatory patients had higher pain barrier scores than hospitalized patients.

Conclusions: The relationship between pain severity and the expectations of patients with cancer regarding pain relief indicate that patients' expected outcomes and barriers may impede optimal pain relief. This study also identified areas of possible weakness within the hospital's pain palliation program.

Implications for Nursing: Nurses should assess for patients' expectations and barriers that could impede pain relief and provide appropriate interventions.

the effectiveness of their pain management (Bagcivan, Tosun, Komurcu, Akbayrak, & Ozet, 2009; Gunnarsdottir, Donovan, Serlin, Voge, & Ward, 2002). Major obstacles to patients reporting pain and using available analgesics include misconceptions regarding pain and pain medication (Dawson et al., 2002; Gunnarsdottir et al., 2002). Patient barriers including fear of addiction and lack of belief that medicine can truly control pain also have been associated with patients' satisfaction with their pain management (Dawson et al., 2002). However, little published research was found that discussed the pain barriers of Israeli patients with cancer.

The purpose of the current survey study was to examine pain severity, satisfaction with pain management, and patient-related barriers among Israeli patients with cancer in oncology inpatient and ambulatory units. The hospital would then use the established baseline data to evaluate future quality improvement programs.

Methods

Sample and Setting

This descriptive, cross-sectional, correlational study was conducted in the oncology division of a large teaching hospital in Israel. The oncology division provides services to inpatients and outpatients. Data were collected from 144 patients with cancer in the oncology (n = 32), hematology (n = 30), and bone marrow transplantation (n = 6) departments; the oncology (n = 29), hematology (n = 5), and bone marrow transplantation (n = 12) daycare units; and the radiation department (n = 30). The study used a convenience sample of patients with cancer, aged 18 years and older, who spoke Hebrew and had experienced self-reported pain in the past 24 hours.

Instruments

The **Revised American Pain Society–Patient Outcome Questionnaire (APS-POQ)** is based on American Pain Society standards (Max, 1991; Ward & Gordon, 1994). The questionnaire includes three items on pain severity (pain now, worst pain, and least pain after medication) and scores the severity on a 0 (no pain) to 10 (worst pain possible) scale. The APS-POQ also includes items on patients' satisfaction with nurses' and doctors' treatment of their pain, patients' expectations of pain relief in general and their own pain relief in particular, waiting time for medication, and whether a doctor or nurse had discussed the importance of the treatment of the patients' pain. The questionnaire was used in inpatient and outpatient settings (N = 306) at a hospital in the United States (Ward & Gordon, 1996). In addition, an adapted version in Chinese was used among patients in surgical, oncology, or hospice departments (N = 234) in Taiwan (Lin, 2000). The APS-POQ was translated into Hebrew and back translated

Table 1. Sample Characteristics

Characteristic	$\overline{X}$	SD
Age (years)	56.2	14.9

Characteristic	n	%
Gender		
Male	62	43
Female	73	51
Missing data	9	6
Marital status		
Married	94	65
Single, divorced, or widowed	39	27
Missing	11	8
Place of birth		
Israel	64	44
North Africa	30	21
Eastern Europe or Russia	26	18
North America, South America, Western Europe, or South Africa	14	10
Other	1	1
Missing data	9	6
Education		
Elementary and high school	59	41
Post–high school, undergraduate, or graduate degree	72	50
Missing data	13	9
Religion		
Jewish	122	85
Christian	2	1
Muslim	10	7
Other	1	1
Missing data	9	6
Religiosity		
Very religious or religious	41	28
Traditional	51	35
Secular	40	28
Missing data	12	8
Clinical setting		
Ambulatory	76	53
Inpatient	68	47

N = 144
Note. Because of rounding, not all percentages total 100.

by people who were fluent in Hebrew and English until agreement was reached.

The **Barriers Questionnaire–Short Form (BQ-SF)** measures patients' concerns about reporting pain and using analgesics (Ward, Donovan, Owen, Grosen, & Serlin, 2000). The Barriers Questionnaire consists of a long-form and a short-form version. The long-form version has 27 items composing eight subscales related to beliefs affecting willingness to report pain and beliefs that impede the use of opioids to manage pain. Items are rated on a six-point Likert-type scale ranging from 0 (do not agree at all) to 5 (agree very much). The internal consistency of the total long-form scale was 0.89 (Ward et al., 1993). The shorter BQ-SF was developed to decrease participant burden (Ward, Carlson-Dakes, Hughes, Kwekkeboom, & Donovan, 1998). The item contributing the highest internal consistency to each

subscale was selected for inclusion in the eight-item short version. The correlation between the two scales was r = 0.92. Cronbach alphas in two studies using the BQ-SF were 0.67 and 0.7, respectively (Ward et al., 1998, 2000). However, Cronbach alpha for the scale in the current study was low (0.49). Therefore, the eight BQ-SF items were treated as individual scales for the purpose of analysis. As with the APS-POQ, the BQ-SF was translated into Hebrew from English and back translated until agreement was reached.

The **demographic data questionnaire** was developed by the investigators. It includes items designed to elicit general data including age, gender, marital status, place of birth, education, religion, and religiosity.

Procedure

After institutional review board approval was received, data collection was performed from January to December 2008 by nurses who worked in the oncology units or in the pain clinic. The chosen oncology nurses were identified as future coordinators of pain control by the head nurses in their departments. A training session was scheduled with the primary investigator for the research nurses to establish data collection procedures and uniformity. To ensure confidentiality and unbiased patient responses, the nurses did not collect data in units where they worked.

Research nurses in the ambulatory units approached patients randomly and asked them whether they had experienced pain in the past 24 hours. In the departments, research nurses asked the head nurse to identify patients who were ineligible for the study (i.e., dying patients, unconscious patients, and patients who could not speak Hebrew). All other patients in the departments were approached by the research nurses, who explained the survey and obtained signed informed consent from patients who agreed to participate. Research nurses then gave each participant a package of the survey questionnaires to complete. If patients had difficulties completing the questionnaires, the research nurse read the questionnaire items to the patients and recorded their responses. All questionnaires were completed in the department or the unit.

Data Analysis

Descriptive statistics described the sample. A one-sample Kolmogorov-Smirnov test established normalcy of data. Pearson r correlations were used to examine relationships among variables with normally distributed data, whereas Spearman rho was used for data that were not normally distributed or if one of the variables was ordinal. T test examined differences among variables with normally dis-

tributed data, and Mann Whitney U and Kruskal-Wallis tests examined differences for data that were not normally distributed. Finally, chi-square comparisons were used between categorical variables.

Results

Table 1 presents demographic information. Most participants were married, Jewish, and had education beyond high school. In addition, about 44% of the participants were born in Israel.

Pain Severity

APS-POQ mean pain severity scores ranged from 3.22 for the least pain after medication to 7.33 for the worst pain in the past 24 hours (see Table 2). With a score of 6 indicating the highest level of satisfaction, patients were very satisfied with nurses' ($\overline{X}$ = 5.26) and doctors' ($\overline{X}$ = 5.09) treatment of their pain. Of note, a percentage of patients did not want to respond to those two items (satisfaction with doctor: 12%; satisfaction with nurses: 16%) (see Table 3). In addition, 40 patients (28%) reported that their doctors or nurses did not tell them early in their care that they considered treatment of the patients' pain to be important.

Seventy-seven patients (65%) reported receiving pain medication within 15 minutes or less after asking for it. However, 21 patients (18%) never asked for pain medication, even when they were experiencing pain. In addition, 83 patients (66%) did not ask for more or different treatment for their pain, even when their pain medication was not working (see Table 4).

Satisfaction with treatment of pain: The only APS-POQ item that was significantly related to patients' satisfaction with nurses' and doctors' treatment of the pain was the amount of time that patients had to wait for medication. The longer patients waited for their pain medication after asking for it, the less satisfied they were with the doctors' treatment (doctors: H[3] = 12.756, p = 0.005). Interestingly, those who never reported their pain had higher satisfaction scores with the doctors' treatment ($\overline{X}$ = 5.12, SD = 1.22) than those who waited more than 15–30 minutes ($\overline{X}$ = 4.8, SD = 1.46) and more than 30 minutes ($\overline{X}$ = 3.9, SD =

Table 2. Pain Severity Related to Pain Variables

Pain Variable	$\overline{X}$	SD	None		Mild		Moderate		Severe	
			n	%	n	%	n	%	n	%
Present (N = 143)	4.85	2.66	11	8	53	37	37	26	42	29
Worse (N = 143)	7.33	2.37	–	–	20	14	29	20	94	66
Lowest after medication (N = 134)	3.22	2.32	17	13	83	62	25	19	9	7

Note. Because of rounding, not all percentages total 100.

Table 3. Patients' Satisfaction Related to Pain

Variable[a]	X̄	SD
Satisfaction with nurse[a]	5.26	0.98
Satisfaction with doctor[a]	5.09	1.21

Variable	n	%
Satisfaction with nurse		
Dissatisfied	5	3
Slightly dissatisfied	2	< 1
Slightly satisfied	10	7
Satisfied	43	30
Very satisfied	61	42
Missing data	23	16
Satisfaction with doctor		
Very dissatisfied	3	2
Dissatisfied	5	3
Slightly dissatisfied	7	5
Slightly satisfied	6	4
Satisfied	47	33
Very satisfied	59	41
Missing data	17	12
Treatment of pain important to provider		
Yes	95	66
No	40	28
Missing data	9	6

N = 144

[a] Scores ranged from 1–6, with higher scores indicating greater satisfaction.

Note. Because of rounding, not all percentages total 100.

1.45) for their pain medication. A similar trend was noted with patients' satisfaction with nurses' treatment of their pain and amount of time the patients had to wait for their medication, but the difference was not significant (H[3] = 5.838, p = 0.12).

A difference also was observed between patients' levels of satisfaction with nurses' and doctors' treatment of their pain and the amount of time they had to wait after asking for more or different medication for their pain. The differences in satisfaction levels were significant for nurses (U = 124, p = 0.056) and doctors (U = 117, p = 0.026). Patients who waited for an hour or less were more satisfied with their pain treatment than those who waited for more than one hour (nurses: X̄ = 5.31 versus X̄ = 4.53; doctors: X̄ = 5.24 versus X̄ = 4.37).

Expectation of pain control: A significant relationship existed between pain severity and patients' expectations regarding the level of pain control that they believed possible to achieve. All relationships were significant between present, worst, and least pain severity levels and the pain relief that the patient believed was possible to receive. Significant relationships also were found between present pain and least pain and the level of pain relief that patients wanted to receive (see Table 5).

Demographic variables: Education displayed a significant difference with present (t[128] = 2.08, p = 0.039) and worst pain (U = 1,351, p < 0.001) and a trend

toward significance with least pain after medication (U = 1,495, p = 0.067). Patients who had education beyond high school reported less severe scores for present pain (X̄ = 4.4 versus X̄ = 5.37), worst pain (X̄ = 6.85 versus X̄ = 8.22), and least pain (X̄ = 3.06 versus X̄ = 3.46) compared to those who had received only a high school education.

A significant difference existed in worst pain scores and place of birth (H[3] = 14.05, p = 0.003). Individuals born in North Africa had the highest score for worst pain (X̄ = 8.5), followed by those born in Israel (X̄ = 7.34) and Russia and Eastern Europe (X̄ = 7.13). The lowest worst pain score was recorded for those born in South Africa, Western Europe, and North and South America (X̄ = 5.9). A significant difference also existed between Jewish and Muslim pain severity. Muslim patients had significantly higher present pain (U = 346.5, p = 0.022; X̄ = 6.9 versus X̄ = 4.71) and least pain scores (U = 290.5, p = 0.027; X̄ = 4.3 versus X̄ = 3.1) than Jewish patients. These findings should be interpreted with caution because the number of Muslim participants was small (present pain: n = 10; least pain: n = 9).

Clinical setting: A significant relationship was found between the patients' desired pain relief and whether the patient was in an outpatient or inpatient setting (U = 1,835, p = 0.002). The ambulatory patients' mean scores on pain relief were significantly lower than those of hospitalized patients (X̄ = 9.3 versus X̄ = 9.83). Ambulatory patients also waited significantly longer for pain medication when they requested it and were more likely not to request pain medication when they were in pain than patients in an inpatient setting (see Table 6).

Table 4. Patient-Reported Wait Times Related to Asking for Pain Medication

Variable	n	%
Longest wait time after asking for medication (minutes) (N = 123)		
15 or less	77	63
15–30	15	12
30–60	5	4
More than 60	5	4
Never asked for pain medication	21	17
Asked for more or different medication (N = 125)		
Yes	42	34
No	83	66
Longest wait time for more or different medication (hours) (N = 43)		
1 or less	26	61
1–2	5	12
2–4	4	9
4–8	1	2
8–24	4	9
More than 24	3	7

Note. Not all participants responded to all questionnaire items.

Table 5. Spearman Rho Correlation of Pain Severity With Possible and Desired Pain Relief

				Pain		
Variable[a]	$\overline{X}$	SD	Range	Present	Worst	Least
Possible pain relief	8.28	1.89	1–10	–0.34***	–0.25**	–0.48***
Pain relief wanted	9.57	1.01	5–10	–0.19*	0.01	–0.21*

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
[a] Possible scores ranged from 0 (no relief) to 10 (total relief) and were reversed from the original questionnaire.

Barriers to pain management: The three patient pain barrier items with the highest mean scores involved getting easily addicted to pain medication ($\overline{X} = 2.65$), saving pain medicine until the pain got worse ($\overline{X} = 2.62$), and pain being a sign that the disease was getting worse ($\overline{X} = 2.39$). Clinical setting played a role in the pain barriers items. Six of the eight pain barrier scales were higher in the ambulatory setting than in the inpatient setting, with two of the items being significantly different. Ambulatory patients were significantly more likely to think that good patients avoided talking about their pain (U = 1,465.5, p = 0.001) and complaints of pain could distract the doctor from curing the cancer (U = 1,609.5, p = 0.014) (see Table 7).

Discussion

Sixty-six percent of ambulatory and hospitalized patients with cancer in the Israeli teaching hospital who experienced pain in the past 24 hours described their worst pain as severe, and 55% described their present pain as moderate to severe. The pain incidence in the current study is higher than that reported in a study examining pain control in Israeli ambulatory units (Shvartzman et al., 2003). Forty percent of Shvartzman et al.'s (2003) patients described their worse pain as severe, and only 42% described their current pain as moderate to severe. One explanation could be related to the scoring differences between these studies. In Shvartzman et al.'s (2003) study, the range was 4–7 for moderate pain and 8–10 for severe pain. The current study used different definitions; moderate pain was defined as pain scores from 5–6, and severe pain as scores from 7–10. Serlin, Mendoza, Nakamura, Edwards, and Cleeland (1995) suggested that the pain classifications used in the current study are the optimal boundaries for pain severity levels. In a study comparing Israeli and American patients with cancer aged 65 years and older, Israeli patients experienced higher worst pain scores (Cohen, Musgrave, Munsell, Mendoza, & Gips, 2005). However, worst mean pain scores in Israeli patients aged 65 years and older were lower than scores reported by participants in this study. Although the current study

and Cohen et al.'s (2005) research were conducted in the same Israeli institution, data in the current study were collected in a number of clinical sites rather than at one site. Two other studies that examined pain severity levels among hospitalized patients with cancer also reported lower scores for current pain and worst pain compared to the current study (Lin, 2000; Panteli & Patistea, 2007). The differences may be related to the context in which the studies were conducted. Lin's (2000) study was set in Chinese hospitals, and Panteli and Patistea's (2007) took place in a hospital in Greece, whereas the current study was conducted in an Israeli setting.

Satisfaction With Treatment Of Pain

Similar to the current study, Lin (2000) and Panteli and Patistea (2007) found that patients' satisfaction with their doctors' and nurses' care of their pain was high. The only item on the APS-POQ that was significantly related to patients' satisfaction with nurses' and doctors' treatment of their pain was the amount of time that the patient had to wait for the pain medication or for a change in the analgesic order. The longer patients waited, the less satisfied they were with the treatment. Ward and Gordon (1994) and Panteli and Patistea (2007) also found a similar relationship between patients' satisfaction with nurses' and doctors' treatment of their pain and waiting time. The finding that longer wait times for pain medication reduced patients' treatment satisfaction was not surprising.

Pain Severity

A strong correlation existed between patients' pain severity and their expectation of the amount of achievable pain control for their own pain and pain in general. Although several studies used the APS-POQ, they either did not include those two items on patients' expectations

Table 6. Comparisons Between Longest Wait for Pain Medication and Clinical Setting

	Inpatient (N = 66)		Ambulatory (N = 57)			
Wait (Minutes)	n	%	n	%	χ^2	df
15 or less	52	79	25	44	23.1*	3
15–30	8	12	7	12		
More than 30	4	6	6	11		
Never asked for pain medication	2	3	19	33		

* $p < 0.001$
df—degrees of freedom

Table 7. Pain Barrier Items for Ambulatory and Inpatient Samples

Variable	Total		Ambulatory		Inpatient	
	$\overline{X}$	SD	$\overline{X}$	SD	$\overline{X}$	SD
People get addicted to pain medicine easily.	2.65	1.81	2.81	1.67	2.48	1.96
Pain medicine should be "saved" in case the pain gets worse.	2.62	2.96	2.81	1.79	2.41	2.11
The experience of pain is a sign that the illness has gotten worse.	2.39	1.94	2.36	1.87	2.41	2.02
Having an injection is painful.	2.25	1.98	2.38	1.97	2.12	2
It is easier to put up with pain than with the side effects of pain medicine.	1.89	1.76	1.8	1.75	2	1.79
Pain medicine cannot really control pain.	1.78	1.74	2.03	1.69	1.51	1.77
Good patients avoid talking about pain.	1.49	1.77	1.98[a]	1.86**	0.97[a]	1.51**
Complaints of pain could distract a doctor from curing the cancer.	0.9	1.34	1.2[a]	1.53*	0.59[a]	1.04*

* p < 0.05; ** p < 0.01

Note. Scores ranged from 0–5, with higher scores indicating stronger agreement.

Note. Barrier Questionnaire–Short Form items courtesy of S.E. Ward. Used with permission.

of achievable pain control in their questionnaires (Carlson, Youngblood, Dalton, Blau, & Lindley, 2003; Comley & DeMeyer, 2001; Dihle, Helseth, & Christophersen, 2008) or did not report their analysis of the relationship between pain severity and patient expectation of pain control when they did include the items (Lin, 2000; Panteli & Patistea, 2007; Ward & Gordon, 1994, 1996). A study of satisfaction with cancer pain management among patients after surgery for cancer and patients with advanced cancer found that patients overwhelmingly believed pain would be relieved (Beck et al., 2010). In a study of pretreatment expectations of toxicities and postchemotherapy experience in patients with cancer, researchers found that the relationship between expectations of treatment-induced pain and patients' experiences of pain after chemotherapy approached significance (Oliver, Taylor, & Whitford, 2005). The relationship of patients' expectations of symptoms and symptom development may be associated with psychological variables such as anxiety (Roscoe et al., 2006). The relationship also may be linked to appropriate informational preparation (Hofman et al., 2004). More studies should examine expectation of levels of achievable pain control and its relationship to pain intensity among patients with cancer.

Patients who had received up to high school education reported significantly more severe pain than those with more than high school education. Similar findings have been noted in the following studies. In a large study of community-dwelling older adults in the United States, patients with less education had a greater prevalence of pain as well as severe pain (Reyes-Gibby, Aday, Todd, Cleeland, & Anderson, 2007). A Dutch study examining pain prevalence in patients with cancer (N = 1,429) also found that the risk for pain was higher among patients with less education (van den Beuken-van Everdingen et al., 2007). Patients with lower educational levels may communicate less effectively with their caregivers (van den Beuken-van Everdingen et al., 2007). In addition, those with less

education may not be able to access relevant literature related to pain.

Patients born in North Africa had the highest mean scores for worst pain, and those born in Western Europe, South Africa, and the United States had the lowest. In a study examining the intensity of chronic pain in the largest Israeli health management organization, no difference was found in pain intensity between patients born in Asia and North Africa and those born in Western Europe, the United States, Australia, and South Africa (Neville, Peleg, Singer, Sherf, & Shvartzman, 2008). A significant difference was not observed in the amount of analgesic and anti-inflammatory drugs used by a comparable population of older adult community dwellers in Israel (Fuchs et al., 2003). The explanation for the difference in the current study's findings and the two referenced studies may be related to the populations; the current study was conducted among a sample of patients with cancer, whereas the other studies were not confined to patients with cancer.

Muslim patients had significantly higher present pain and least pain severity scores than Jewish patients. No other studies were found that examined the differences in the pain experience between Israeli Muslim and Jewish patients with cancer. One study compared cultural differences of the child delivery experience among Jewish and Arab-Muslim women in Israel (Rassin, Klug, Nathanzon, Kan, & Silner, 2009). Rassin et al. (2009) reported that a higher number of Arab-Muslim women experienced menstrual pain and were more likely to moan and yell when signifying their pain during delivery than Jewish women. Because the sample size of Muslim patients experiencing cancer pain in the current study was small, further research with larger Muslim populations should be conducted to examine the validity of the findings.

Clinical Setting

Patients in the ambulatory setting had decreased expectations regarding the control of their own pain compared

to hospitalized patients. No studies were found that examined differences between patients' expectations of the control of their pain and the clinical setting. This finding again emphasized the need for more research to be conducted in the area of pain expectation and the factors that influence those expectations among patients with cancer.

Ambulatory patients waited significantly longer for their medications after asking for them and were more likely not to report their pain than hospitalized patients. The inpatient wait time in the current study compared favorably with other institutions (Lin, 2000; Panteli & Patistea, 2007; Ward & Gordon, 1996). No studies were found that specifically examined the difference in wait times between ambulatory and inpatient settings. One study that reported on wait times in inpatient and outpatient settings for pain treatment did not examine the differences between the two settings (Ward & Gordon, 1996). In the current study, the high incidence of patients in the ambulatory setting not reporting their pain warrants judicious examination.

Barriers to Pain Management

Pain barrier mean scores were influenced by the clinical setting. No literature was found that examined pain barrier scores using the BQ-SF or studies that compared hospitalized patients' pain barrier scores with those of ambulatory patients. Studies conducted among patients with cancer using the BQ-SF were performed in ambulatory settings. Wells, Johnson, and Wujcik (1998) reported the mean scores of the individual items used in the current study and similarly found that the greatest barrier in their outpatient sample was fear of addiction and analgesics should be saved until the pain worsens. However, Wells et al.'s (1998) participants' scores were lower than those reported in the current study (addiction: $\overline{X}$ = 2.81 versus $\overline{X}$ = 2.45; saving medication: $\overline{X}$ = 2.81 versus $\overline{X}$ = 1.63). In addition, mean scores on all individual pain barrier questionnaire items in Wells et al.'s (1998) study were lower than in the current study. The difference may reflect the need for designing more educational interventions to improve patients' beliefs about their pain and pain control in the teaching hospital. In their tailored barriers intervention study among patients with cancer with moderate to severe pain, Ward, Wang, Serlin, Peterson, and Murray (2009) reported decreased pain barrier scores after the study intervention. Oliver, Kravitz, Kaplan, and Meyers (2001) found that ambulatory patients experiencing pain who had undergone an individualized education and coaching session to redress common misconceptions similar to the ones found in the BQ-SF had improved pain severity scores.

Limitations

The current study possessed several limitations. The BQ-SF's reliability coefficient was low. Further studies examining this pain barrier questionnaire's factors should be conducted. The study instruments were translated only into Hebrew, which may have limited their effectiveness in Hebrew-speaking participants whose mother tongues were Russian or Arabic. The Muslim and Christian populations were small. In addition, the study population consisted of patients with cancer in one hospital and cannot be generalized to other Israeli institutions. Bone marrow and hematology daycare patients were underrepresented; therefore, future pain studies should include larger samples of hematology-oncology patients.

Conclusions and Implications for Nursing

Fifty-six percent of the total patient sample experienced moderate to severe present pain when completing the pain severity scales, and 66% had experienced severe pain in the past 24 hours. More than 66% of the sample never asked for additional medication even when they continued to experience pain. In addition, ambulatory patients had to wait longer for their pain medication, and about 33% of them never asked for pain medication, even though they experienced pain. The Israeli Ministry of Health (2001) has made pain the fifth vital sign; as part of a larger plan to improve pain control among patients with cancer, nurses in this setting should be directed to assess patients' pain levels more systematically, particularly in the ambulatory care setting.

Patients' expectations regarding relief of pain in general and their own pain in particular were significantly related to their perception of pain severity. When conducting baseline assessments of patients' pain severity, nurses also should assess patients' expectations regarding relief of pain. In addition, in-service nursing education on the treatment of pain needs should focus on ways to reduce pain, as well as on the influence of patients' expectations regarding their pain relief.

Patients' personal characteristics also should be examined in Israeli healthcare settings, which receive patients from diverse sociocultural and religious backgrounds. The current study found that Muslim patients reported increased levels of pain severity. Therefore, nurses assessing pain among patients with cancer should be aware of the way in which those factors may impinge on the patients' pain experience.

Although most patients with cancer in Israel understand Hebrew, the country has a large older immigrant population from Russia and an indigenous population of Arab speakers who may understand and speak Hebrew but would be more comfortable with pain assessment tools in their mother tongue. Therefore, pain assessments among those populations could be facilitated by assessment tools translated into Russian and Arabic.

The pain barrier items with the highest mean scores were related to addiction and saving analgesics until pain worsens. Patient education related to those and other pain barriers could expel fears regarding the use of analgesics, particularly opioid analgesics, which are the back bone of severe pain control among patients with cancer.

Because of the significant relationship of patients' expectations regarding pain relief and pain severity levels, additional research should be conducted in the area of patients' expectations and the factors that influence those expectations. In addition, a significant difference existed among pain severity levels between Jewish and Muslim patients with cancer. Additional research should be conducted recruiting larger samples of Muslim patients. Similarly, future research should recruit a larger Christian sample because the current study had only two Christian patients and little meaningful analysis could be conducted.

Pnina Naveh, RN, MA, is the coordinator of palliative care and Rinati Leshem, RN, BA, is a supervisor, both in the Oncology Nursing Service of Hadassah Medical Organization; Yossi Freier Dror, MA, is a statistician at Mashav Applied Research Company; and Catherine F. Musgrave, RN, DNSc, is the coordinator of the Oncology Curriculum in the School of Nursing at the Henrietta Szold Hadassah Hebrew University and a research and academic advisor in the Oncology Nursing Service at Hadassah Medical Organization, all in Jerusalem, Israel. This work was funded, in part, by a small research grant from Hadassah Medical Organization. Dror received an honorarium for assistance with the statistics from Hadassah Medical Organization. Naveh can be reached at pninan@hadassah.org.il, with copy to editor at ONFEditor@ons.org. (Submitted April 2010. Accepted for publication July 22, 2010.)

References

Bagcivan, G., Tosun, N., Komurcu, S., Akbayrak, N., & Ozet, A. (2009). Analysis of patient-related barriers in cancer pain management in Turkish Patients. *Journal of Pain and Symptom Management, 38,* 727–737. doi:10.1016/j.jpainsymman.2009.03.004

Beck, S.L., Towsley, G.L., Berry, P.H., Lindau, K., Field, R.B., & Jensen, S. (2010). Core aspects of satisfaction with pain management: Cancer patients' perspectives. *Journal of Pain and Symptom Management, 39,* 100–115. doi:10.1016/j.jpainsymman.2009.06.009

Breivik, H., Cherny, N., Collett, B., de Conno, F., Fibet, M., Foubert, A.J., . . . Dow, L. (2009). Cancer-related pain: A pan-European survey of prevalence, treatment, and patient attitudes. *Annals of Oncology, 20,* 1420–1433. doi:10.1093/annonc/mdp001

Carlson, J., Youngblood, R., Dalton, J.A., Blau, W., & Lindley, C. (2003). Is patient satisfaction a legitimate outcome of pain management? *Journal of Pain and Symptom Management, 25,* 264–275. doi:10.1016/S0885-3924(02)00677-2

Cohen, M.Z., Musgrave, C.F., McGuire, D.B., Strumpf, N.E., Munsell, M.F., Mendoza, T.R., . . . Grips, M. (2005). The cancer pain experience of Israeli adults 65 years and older: The influence of pain interference, symptom severity, and knowledge and attitudes on pain and pain control. *Supportive Care in Cancer, 13,* 708–714. doi:10.1007/s00520-005-0781-z

Cohen, M.Z., Musgrave, C.F., Munsell, M.F., Mendoza, T.R., & Gips, M. (2005). The cancer pain experience of Israeli and American patients 65 years and older. *Journal of Pain and Symptom Management, 30,* 254–263. doi:10.1016/j.jpainsymman.2005.03.011

Comley, A.L., & DeMeyer, E. (2001). Assessing patient satisfaction with pain management through a continuous quality improvement effort. *Journal of Pain and Symptom Management, 21,* 27–40. doi:10.1016/S0885-3924(00)00229-3

Davis, M.P., & Walsh, D. (2004). Epidemiology of cancer pain and factors influencing poor pain control. *American Journal of Hospice and Palliative Care, 21,* 137–142. doi:10.1177/104990910402100213

Dawson, R., Spross, J.A., Jablonski, E.S., Hoyer, D.R., Sellers, D.E., & Solomon, M.Z. (2002). Probing the paradox of patients' satisfaction with inadequate pain management. *Journal of Pain and Symptom Management, 23,* 211–220. doi:10.1016/S0885-3924(01)00399-2

Dihle, A., Helseth, S., & Christophersen, K.A. (2008). The Norwegian version of the American Pain Society Patient Outcome Questionnaire: Reliability and validity of three subscales. *Journal of Clinical Nursing, 17,* 2070–2078. doi:10.1111/j.1365-2702.2007.02142.x

Fuchs, Z., Novikov, I, Blumstein, T., Chetrit, A., Gindin, J., & Modan, B. (2003). Patterns of drug use among the community-dwelling old-old population in Israel. *Israel Medical Association Journal, 5,* 346–351.

Gordon, D.B., Dahl, J.L., Miaskowski, C., McCarberg, B., Todd, K.H., Paice, J.A., . . . Carr, D.B. (2005). American Pain Society recommendations for improving the quality of acute and cancer pain management. *Archives of Internal Medicine, 165,* 1574–1580. doi:10.1001/archinte.165.14.1574

Gunnarsdottir, S., Donovan, H.S., Serlin, R.C., Voge, C., & Ward, S. (2002). Patient-related barriers to pain management: The Barriers Questionnaire II (BQ-II). *Pain, 99,* 385–396. doi:10.1016/S0304-3959(02)00243-9

Hofman, M., Morrow, G.R., Roscoe, J.A., Hickok, J.T., Mustian, K.M., Moore, D.F., . . . Fitch, T.R. (2004). Cancer patients' expectations of experiencing treatment-related side effects: A University of Rochester Cancer Center-Community Clinical Oncology Program Study of 938 patients from community practices. *Cancer, 101,* 851–857. doi:10.1002/cncr.20423

Israeli Ministry of Health. (2001). *Professional standard* [In Hebrew]. Retrieved from http://www.health.gov.il/download/forms/ND-44int.pdf

Lin, C. (2000). Applying the American Pain Society's QA standards to evaluate the quality of pain management among surgical, oncology, and hospice inpatients in Taiwan. *Pain, 87,* 43–49.

Max, M. (1991). American Pain Society quality assurance standards for relief of acute pain and cancer pain. In M.R. Bond, J.E. Charlton, & C.J. Woolf (Eds.), *Proceedings of the 6th World Congress on Pain: Research and clinical management* (vol. 4, pp. 313–319). Philadelphia, PA: Elsevier Science.

Neville, A., Peleg, R., Singer, Y., Sherf, M., & Shvartzman, P. (2008). Chronic pain: A population-based study. *Israel Medical Association Journal, 10,* 676–680.

Oliver, I.N., Taylor, A.E., & Whitford, H.S. (2005). Relationships between patients' pre-treatment expectations of toxicities and post-chemotherapy experiences. *Psycho-Oncology, 14,* 25–33.

Oliver, J.W., Kravitz, R.L., Kaplan, S.H., & Meyers, F.J. (2001). Individualized patient education and coaching to improve pain control among cancer outpatients. *Journal of Clinical Oncology, 19,* 2206–2212. doi:10.1002/pon.804

Panteli, V., & Patistea, E. (2007). Assessing patients' satisfaction and intensity of pain as outcomes in the management of cancer-related pain. *European Journal of Oncology Nursing, 11,* 424–433. doi:10.1016/j.ejon.2007.09.002

Rassin, M., Klug, E., Nathanzon, H., Kan, A., & Silner, D. (2009). Cultural differences in child delivery: Comparisons between Jewish and Arab women in Israel. *International Nursing Review, 56,* 123–130. doi:10.1111/j.1466-7657.2008.00681.x

Reyes-Gibby, C.C., Aday, L.A., Todd, K.H., Cleeland, C.S., & Anderson, K.O. (2007). Pain in aging community-dwelling adults in the United States: Non-Hispanic whites, non-Hispanic blacks, and Hispanics. *Journal of Pain, 8,* 75–84. doi:10.1016/j.jpain.2006.06.002

Roscoe, J.A., Jean-Pierre, P., Shelke, A.R., Kaufman, M.E., Bole, C., & Morrow, G.R. (2006). The role of patients' response expectancies in side effect development and control. *Current Problems in Cancer, 30,* 40–98. doi:10.1016/j.currproblcancer.2005.12.001

Serlin, R.C., Mendoza, T.R., Nakamura, Y., Edwards, K.R., & Cleeland, C.S. (1995). When is cancer pain mild, moderate, or severe? Grading pain severity by its interference with function. *Pain, 61,* 277–284. doi:10.1016/0304-3959(94)00178-H

Shvartzman, P., Friger, M., Shani, A., Barak, F., Yoram, C., & Singer, Y. (2003). Pain control in ambulatory cancer patients—Can we do better? *Journal of Pain and Symptom Management, 26,* 716–722. doi:10.1016/S0885-3924(03)00220-3

Vallerand, A.H., Templin, T., Hasenau, S.M., & Riley-Doucet, C. (2007). Factors that affect functional status in patients with cancer-related pain. *Pain, 132,* 82–90. doi:10.1016/j.pain.2007.01.029

van den Beuken-van Everdingen, M.H., de Rijke, J.M., Kessls, A.G., Schouten, H.C., van Kleef, M., & Patijn J. (2007). Prevalence of pain in patients with cancer: A systematic review of the past 40 years. *Annals of Oncology, 18,* 1437–1449.

Ward, S., Donovan, H.S., Owen, B., Grosen, E., & Serlin, R. (2000). An individualized intervention to overcome patient-related barriers to pain management in women with gynecologic cancers. *Research in Nursing and Health, 23,* 393–405. doi:10.1016/j.pain.2009.02.021

Ward, S.E., Carlson-Dakes, K., Hughes, S.H., Kwekkeboom, K.L., & Donovan, H.S. (1998). The impact on quality of life of patient-related barriers to pain management. *Research in Nursing and Health, 21,* 405–413. doi:10.1016/0304-3959(93)90165-L

Ward, S.E., Goldberg, N., Miller-McCauley, V., Mueller, C., Nolan, A., Pawlik-Plank, D., . . . Weissman, D.E. (1993). Patient-related barriers to management of cancer pain. *Pain, 52,* 319–324.

Ward, S.E., & Gordon, D. (1994). Application of the American Pain Society quality assurance standards. *Pain, 56,* 299–306.

Ward, S.E., & Gordon, D.B. (1996). Pain satisfaction and pain severity as outcomes in pain management: A longitudinal view of one setting's experience. *Journal of Pain and Symptom Management, 11,* 242–251.

Ward, S.E., Wang, K.K., Serlin, R.C., Peterson, S.L., & Murray, M.E. (2009). A randomized trial of a tailored barriers intervention for cancer information service (CIS) callers in pain. *Pain, 144,* 49–56.

Wells, N., Johnson, R.L., & Wujcik, D. (1998). Development of a short version of the barriers questionnaire. *Journal of Pain and Symptom Management, 15,* 294–297.