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Original Article

Postoperative Patients in Jordan: Pain Prevalence, Characteristics, Beliefs, and Satisfaction

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ABSTRACT

Background: Unrelieved postoperative pain contributes to soaring medical costs and poor quality of life. Whilst much has been written about postoperative pain prevalence in the literature, few empirical studies have explored pain care in Middle Eastern countries.
Aims: This study aimed to determine pain prevalence, its characteristics, beliefs and satisfaction among postoperative patients in Jordan.
Design: This is a descriptive survey design.
Settings: This study was conducted in a 200-bed Jordanian public hospital located in the southern province of Jordan.
Participants: A convenient sample of 143 surgical patients was selected.
Methods: Data were collected by the American Pain Society Patient Outcomes questionnaire, Brief Pain Inventory scale and beliefs towards pain scale. Data were analyzed using SPSS version 21.
Results: Pain prevalence following surgery during the first 24 hours was 87%. The overall Mean of satisfaction of all participants was moderate (66.6%). The analysis found that the greatest interference of pain was with activity (Mean ± SD = 6.27 ± 3.30). The belief "people get addicted to pain medicine easily" was the most common misunderstanding (Mean ± SD = 3.48 ± 1.71). Male participants had worse average pain experience but were more satisfied with pain management than females (*ps* = .012, .017, respectively). Participants aged 30 or more had better pain management experience and satisfaction than those aged under 30 ($p = .021$).
Conclusions: The study revealed high pain prevalence among surgical patients that remains undertreated. If patients' postoperative environment is to be a "Pain Free Zone", nurses' training programs and the application of various screening tools in the postoperative context taking into account the role of gender and culture are urgently needed.

The prevalence and management of postoperative pain has become a global concern. Considerable evidence has revealed that despite increasing efforts and policies to enhance the pain management of surgical patients, severe and enduring pain continues to be endemic in clinical settings (Gupta, Sahi, Bhargava, & Talwar, 2015; Kassa & Kassa, 2014; Shoqirat, 2014). Unrelieved pain is costly in patient comfort and can lead to psychological, physiological, and socioeconomic consequences for patients, including the development of chronic pain and poor quality of life (Kaasalainen, Agarwal, Dolovich, Brazil, & Papaioannou, 2015; Stenberg, Fjellman-Wiklund, & Ahlgren, 2014; Theodoraki, Staikou, & Fassoulaki, 2014).

Despite common and persistent pain for most patients in clinical contexts, pain management has received astonishingly little attention from health care professionals, and the nursing role in particular is poorly developed, for example, in Canada, Ireland, and Jordan (Rose, et al., 2012; Shoqirat, 2015; Vickers, Wright, & Staines, 2014). Pain management depends on biomedical aspects of care related to patients' clinical condition, the training and knowledge of health professionals, and the broader sociocultural context that contributes to the pain experience (Ramia, Nasser, Salameh, & Saad,

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2017). Consequently there are increasing calls for research exploring how perceptions, attitudes, and beliefs among patients affect the quality of pain management (Lewthwaite et al., 2011; Tarigopula et al., 2014).

In response to these calls, a plethora of studies have examined patients' experiences of postoperative pain and found that levels of postoperative pain remain unacceptably high (Shoqirat, 2014; Theodoraki, et al., 2014; Wadensten, Fröjd, Swenne, Gordh, & Gunningberg, 2011) and nurses' pain assessments are often suboptimal (Ho et al., 2012; Manwere, Chipfuwa, Mukwamba, & Chironda, 2015). It was also found that patient satisfaction with postoperative pain management relies on patients' expectations, the intensity of pain experienced, promptness of acute pain service response, and effectiveness of treatment (Shoqirat, 2014; Tocher, Rodgers, Smith, Watt, & Dickson, 2012).

Other studies carried out in the United Kingdom, Turkey, and India revealed that the postoperative pain prevalence was 68% (n = 1,564), 88.5% (n = 46), and 84% (n = 101), respectively (Karabulut, Aktas, Gurcayır, Yılmaz, & Gokmen, 2015; Singh, Saikia, & Lahakar, 2016; Tocher et al., 2012). These more recent results confirm longstanding international concern that pain in hospital is often poorly managed and underestimated, fundamentally compromising the quality of care provided (Al-Shaer, Hill, & Anderson, 2011; Ramia et al., 2017; Theodoraki et al., 2014).

Existing literature has cited diverse factors that are instrumental in this situation, including lack of time in clinical practice (Bergman, 2012; Batiha, 2012); deficient training, knowledge, and skills among health professionals (Namnabati, Abazari, & Talakoub, 2012); and poor leadership, limited power, and gender bias in nursing in particular (Fornasari & Michele, 2012; Zuccaro et al., 2012).

Jordan is increasingly devoting significant resources to the development of national health provision, including updating the nursing curriculum to include updated strategies for pain management (Batiha, 2012; D'emeh, Yacoub, Darawad, Al-Badawi, & Shahwan, 2016); however, there is still insufficient empirical research seeking to understand pain management prevalence, characteristics, and satisfaction among patients in the postoperative context. A qualitative study conducted in Jordan found that surgical patients' experiences of nursing pain management were summarized by the phrases "not up to their expectations," "poorly informed," and largely "not satisfied about this aspect of care" (Shoqirat, 2015). These results are congruent with quantitative work indicating that Jordanian hospital nurses lack knowledge and consequently underestimate patients' pain, in accordance with the global picture presented by worldwide studies (Albaqawi, Maude, & Shawhan-Akl, 2016; Gupta et al., 2015; Kassa & Kassa, 2014).

Pain is a highly subjective phenomenon that differs according to ethnic and socioeconomic factors; consequently, because the available bulk of evidence concerning pain is derived from Western contexts, current pain theory may not be applicable to other health care systems and populations. Thus health care professionals face a dilemma in some countries, such as Jordan, as a result of the paucity of data needed to guide their pain management interventions to reduce the incidence of severe pain, enhance patient satisfaction, and reduce length of stay. Patients' beliefs about and understanding of pain fundamentally affect their reactions to pain and pain therapy provided by health care professionals (Glowacki, 2015). Therefore the aim of this study was to describe pain prevalence and characteristics, beliefs, and satisfaction among postoperative patients in Jordan. Once these dimensions of pain management have been identified and understood, a future strategy to enhance the quality of life of those patients in pain can be devised.

Methods

Design and Sample

This study was part of a 3-year funded project focusing on the pain management from the perspective of hospital patients and nurses using triangulation methodology. Although the qualitative data were published elsewhere (Shoqirat, 2014, 2015), in this article a descriptive survey design was used to identify the prevalence, satisfaction, and beliefs regarding pain management among postoperative patients in Jordan. A convenient sample of 143 surgical patients was used. Inclusion criteria were participants aged 18 years and older, with no communication difficulties or mental health issues, at least 24 hours postoperative, and able (psychologically and physically) to take part in the study. Accordingly, three mentally and/or physically ill patients were excluded.

This survey research was conducted in a 200-bed Jordanian public hospital located in the southern province of Jordan. The study targeted patients admitted in the departments of general surgery, orthopedic surgery, obstetrics, and gynecology. In the target hospital, postoperative pain was controlled only through pharmacologic interventions, according to national guidelines, in particular using morphine, pethidine, tramadol, and paracetamol (Perfalgan, Tylenol). To date, the target hospital does not have a pain management team, and analgesics are commonly prescribed by the surgeon. The study used three related tools, as explained next.

Study Measures

American Pain Society Patient Outcomes Questionnaire

The two-part revised American Pain Society Patient Outcomes Questionnaire was used (Gordon et al., 2010). Part I comprises patients' demographic data, including age and gender. Part II of the questionnaire includes 14 questions, the first two of which are yes-or-no questions referring to the presence of pain and the third of which concerns the pain score: Has the patient, since arriving at the hospital, been in pain? Has the patient been in pain during the last 24 hours? What is the worst pain score for the last 24 hours?

The remaining 11 questions had options to respond on a 10-score satisfaction scale arranged from lowest to highest. Over the last 20 years, the APS-POQ has been deemed a valid instrument with satisfactory psychometric properties (Gordon et al., 2005; McNeill, Sherwood, Starck, & Thompson, 1998), with a total internal consistency (Cronbach's α) of 0.770 (Wang, Sherwood, Gong, & Liu, 2013). Previous results provide support for the internal consistency, construct validity, and clinical feasibility of the instrument (Gordon et al., 2010).

Brief Pain Inventory

Pain was also assessed with the Brief Pain Inventory, which is a self-reported instrument designed to assess the intensity and quality of pain, the extent to which pain relief was obtained, and the extent to which pain interferes with function (Daut, Cleeland, & Flanery, 1983). The questionnaire has 10 closed (multiple choice or dichotomous yes-or-no) questions. The first three questions referred to the presence of pain and were answered with yes or no.

In the next three questions patients were asked to rate their pain intensity in three different situations, including pain now (i.e., during the interview), least pain felt since admission, and worst pain felt since admission, using a numeric rating scale from 0 ("no pain") to 10 ("pain as bad as you can imagine"). Patients were then asked about how pain interferes with seven aspects of life: general activity, mood, walking ability, normal work, relations with other people, sleep, and enjoyment of life. Severity and interference were rated on a numeric score from 0 ("does not interfere") to 10

("completely interferes"). In the seventh question, surgical patients were also asked about their perception of the time lapsed from their request for an analgesic to its administration. The answers were placed into one of six different categories: (1) I did not ask for any analgesic; (2) delay of 0-15 minutes; (3) delay of 16-30 minutes; (4) delay of 31-60 minutes; (5) delay of more than 60 minutes; and (6) asked for but never administered. This variable was referred to as "time elapsed."

The eighth and ninth questions asked about patient dissatisfaction with pain management and with the medical and paramedical staff. The degree of satisfaction or dissatisfaction was based on a Likert scale of seven categories: (1) highly satisfied, (2) very satisfied, (3) satisfied, (4) neither satisfied nor dissatisfied, (5) dissatisfied, (6) very dissatisfied, and (7) highly dissatisfied. The tool has been found to be a valid and reliable instrument for chronic noncancer pain (Keller et al., 2004; Tan, Jensen, Thornby, & Shanti, 2004). The internal consistency reliability (Cronbach's α) was >0.80 for the Brief Pain Inventory (Kapstad, Rokne, & Stavem, 2010).

Barriers Questionnaire

Seven items from the Barriers Questionnaire were used (Ward et al., 1993) to measure patients' beliefs in the domains of fear of addiction, concerns about tolerance to analgesics, concerns regarding side effects, fatalism (pain is inevitable), desire to be a good patient (avoid talking about pain), fear of distracting the doctor (i.e., through complaining), and concern that increased pain means progression of the disease. Participants were asked to indicate their level of agreement about these beliefs on a 0- to 5-point rating scale, where 0 is no agreement at all and 5 is total/much agreement. The reliability of the Barriers Questionnaire is well established (Cronbach's α of .89) (Ward et al., 1993), and it is recommended in pain management research (Boyd-Seale et al., 2010).

The content validity of the final Arabic version of questionnaires (n = 3) used in this study was established by review of pain experts (n = 7) from Jordanian hospitals and nursing faculties. These included a pharmacist, four staff members with a nursing Ph.D., nursing supervisors, a doctor, and a clinical nurse specialist in pain management. A pilot study was carried out at the target hospital with 10 surgical patients who were excluded to ensure clarity and thus the reliability of the instrument. No changes were made to the questionnaires.

All questionnaires were translated into Arabic and then back-translated into English. The adequacy was evaluated by four experts on pain treatment who were fluent in both languages (Arabic and English) and published in this area of expertise. Minor changes were made to some words such as *pain* and *suffering* to reflect Arabic and colloquial semantic expressions pertaining to these concepts. For example, the differentiation between *medical* and *physical* health is confusing in Arabic; thus only the concept of "medical health" was used.

Data Collection

Ethical approval was sought from the Ethics Committee at the Faculty of Nursing at Mutah University and from the Ministry of Health in Jordan. Participation in the study was voluntary. Confidentiality was achieved by using codes, and all questionnaires were kept in a secured office. All participants were assured that refusing the participation in this study would not have any negative outcomes on the care offered to them. It was strongly emphasized that any information would be considered anonymous and strictly confidential and that the medical staff would not have access to the answers. Receiving and completing questionnaires were considered to indicate consent. A trained research assistant with a significant experience in pain management, unknown to participants and medical staff, distributed the questionnaires. The research assistant was also responsible for helping illiterate patients to fill in the questionnaire. The data collection process took about 2 months, from August to October 2016.

Data Analysis

Data were analyzed using SPSS Version 21 (IBM Corp., Armonk, NY). A p value (<.05) was defined to be statistically significant. An item-by-item analysis was conducted. The sample was described by descriptive analysis, including means and standard deviations (SDs) of continuous variables and frequencies and percentages of categorical variables. A mean interference score was calculated, with higher scores reflecting greater pain intensity and greater interference with function.

The numeric data in the pain intensity and interferences were summarized using means, frequency tables, and correlations. The relationships among demographic variables were examined by Pearson's correlation, Kruskal-Wallis tests, and one-sample t tests.

Results

Participant Characteristics

A total of 150 questionnaires were distributed over a three-month period, and 143 questionnaires were returned (a response rate of 95%). The majority of participants were female (n = 82, 57.3%). Slightly more than half were aged ≥30 years (51%, n = 73). The majority were educated to the highest secondary school certificate (Tawjihi) (n = 111, 78%), and only 32 participants (22%) were educated to the bachelor's degree level.

Pain Characteristics and Satisfaction

The analysis revealed that pain was prevalent among surgical patients. When participants were asked whether they had experienced pain in the last 24 hours, 125 (87%) reported that they had pain and only 13 (13%) had not. The mean score of worst pain over the last 24 hours was 6.18 (SD = 3.41) out of 10. The mean of current and average pain in the last 24 hours was (mean ± SD = 5.87 ± 3.34) and (mean ± SD = 5.27 ± 3.18), respectively, as shown in Table 1.

With regard to pain interference, participants were asked six questions to rate on a numeric scale from 0 (does not interfere) to 10 (completely interferes). These questions were related to the level of pain interference with patients' aspects life, such as activity, mood, walking, relationships, sleep, and recovery from surgery. The results indicated that the greatest interference was with activity (mean ± SD = 6.27 ± 3.30) and the lowest interference was with sleep (mean ± SD = 4.88 ± 3.58).

Table 1
Pain Characteristics and Interferences

	Mean	SD
Pain now	5.87	3.34
Worst pain	6.18	3.41
Average pain	5.27	3.18
Pain interference with activity	6.27	3.30
Pain interference with mood	5.74	3.56
Pain interference with walking	4.88	3.58
Pain interference with relationships	5.56	3.60
Pain interference with sleep	5.86	3.67
Recovery from surgery	5.81	3.56

SD = standard deviation.
Pain and interference were rated on a 0-10 scale with 0 being no pain or interference and 10 being worst pain or most interference.

Patient Satisfaction

Participants were also asked about the level of satisfaction with the management of pain they received. Responses ranged from 1 (very dissatisfied) to 6 (very satisfied). The overall mean satisfaction of all participants was 4.0 (SD = 1.6). Mean satisfaction with nurses' response to pain was 4.11 (SD = 1.5), and mean satisfaction with physicians' response to pain was 4.0 (SD = 1.6). With regard to waiting time for analgesic medication, more than a third (n = 56, 39%) received it within 10 minutes.

The majority of participants (n = 84, 58.8%) reported that they had poor management of pain and asked to change pain medication. Nearly two-thirds of participants (66.4%, n = 95) were willing to take the strongest pain medication.

Analysis revealed that male participants had worse mean pain experience than their female counterparts ($p = .012$). Statistically significant results were found between the average pain in the last 24 hours. Overall, it was found that pain interfered more with the daily lives of those aged 30 years or younger compared with those aged 30 years or older ($p = .032$). One-way analysis of variance revealed that male patients were more satisfied with pain management compared with female patients ($p = .017$). Likewise, those participants aged 30 or older had better pain management experiences and satisfaction than those aged younger than 30 ($p = .021$).

Patient Beliefs

Participants were asked to indicate their level of agreement about pain using seven statements on a six-point rating scale, from 0 (no agreement at all) to 5 (total agreement). Overall, participants agreed with those beliefs as evident by the mean scores of all items (mean ± SD = 3.0 ± 1.3).

Descriptive statistics indicated that the belief that "people get addicted to pain medicine easily" was the most common misunderstanding (mean ± SD = 3.48 ± 1.71). Participants had little agreement with the belief that "pain medicine cannot really control pain" (mean ± SD = 2.54 ± 1.182) (Table 2). Agreement with all items was statistically significant in favor of male participants ($p = .046$) and age ($p = .010$).

Discussion

This study aimed to determine pain prevalence, characteristics, beliefs, and satisfaction among postoperative patients in Jordan. The results revealed that pain was prevalent among 87% (n = 125) of all surgical patients (n = 143). The mean score of worst pain over the last 24 hours was 6.18 (SD = 3.41) out of 10. It is alarming that the pain prevalence in this study was the highest (87%) compared with many earlier cultural studies where pain prevalence was found to vary from 14% to 84.17% (Enrique Machado-Alba et al., 2013; Mwaka, Thikra, & Mung'ayi, 2013; Singh et al., 2016; Sommer et al., 2008). Likewise, the quantitative evidence from the study is reinforced by data from international research raising serious doubt about postoperative pain management and its effectiveness (Bayuo & Agbenorku, 2015; Shoqirat, 2014).

Table 2
Barriers to Pain Management (n = 143)

Beliefs	Mean	SD
People get addicted to pain medicine easily	3.48	1.71
Pain medicine should be saved for the worst pain	3.26	1.88
Good patients avoid talking about pain	3.0	1.96
Pain is sign illness has gotten worse	3.0	1.89
Easier to put up with pain than side effects of pain medicine	3.0	1.95
Complaints of pain distract physician from underlying illness	2.74	1.81
Pain medicine cannot really control pain	2.54	1.82
Total	3.0	1.35

SD = standard deviation.
Responses were rated on a 0-5 scale, with 0 representing no agreement and 5 representing total agreement.

Nevertheless, although the current results are unfortunate given that freedom from pain is a human right, the high prevalence of acute pain in the postoperative in this study should be interpreted carefully. First the results are compared with previous studies where, for example, the sample included only certain postoperative patients such as abdominal surgery (Singh et al., 2016) or medical pain patients (Gupta et al., 2015). In the present study the sample was diverse and included orthopedic patients, who often suffer from more severe pain after surgery (Barbosa et al., 2014).

Second, the high prevalence of pain in this study might be explained by other data, in particular patients' beliefs. The analysis found that the belief that "people get addicted to pain medicine easily" was the most common misunderstanding among surgical patients (mean = 3.48, 69.6%), followed by the belief that "pain medicine should be saved for worse pain" (mean = 3.26, 65.2%). This finding may indicate that the fear of addiction among patients might hinder their willingness to seek pain management postoperatively, even if pain is severe, thus contributing to high prevalence of acute pain (Jones, 2015; Shoqirat, 2014; Singh et al., 2016). This belief is not only common among patients but also among nurses, thus precluding the creation of a pain-free surgery recovery (Bayuo & Agbenorku, 2015; Posso, Giaretta, Santanna, Ranzani, & Gouvea, 2013).

Third, at present the hospital does not have a pain management team, and analgesics are commonly prescribed by the surgeon, which might contribute to poor assessment, follow-up, and thus overall philosophy of pain management. However, it is surprising that even in highly developed countries in Europe pain is still prevalent in postoperative contexts (Haukenes, Hensing, Stålnacke, & Hammarström, 2015; Tocher et al., 2012). Nevertheless, barriers to pain management in the postoperative context are multifaceted, ranging from the lack of routine monitoring of pain, surgical fear, inadequate awareness about perioperative pain, and attitude of the nurses to poor nursing image and authority (Rantala, Kankkunen, Kvist, & Hartikainen, 2014; Shoqirat, 2015). Thus it can be argued that a high prevalence of acute postoperative pain demonstrates that optimal management at the organization is definitely lacking. Despite this generally negative picture, it was surprisingly found that about 66.6% (n = 95) of participants were satisfied with the pain management they received, despite the high prevalence of acute pain (87%, n = 125).

Patient satisfaction is widely used as a vital indicator of quality outcomes (Al-Abri & Al-Balushi, 2014; Schroeder et al., 2016) and effective educational programs (Ramia et al., 2017), but the question arises of how this can be valid when patients are in pain and yet report being satisfied. Indeed, although male participants reported a worse average pain experience ($p = .012$), they also reported greater satisfaction with their pain management compared with female participants ($p = .017$). This satisfaction is incongruent with other findings from this study suggesting that about 62.6% participants agreed with the statement that "pain interferes with activity," in particular for those younger than 30 years of age ($p = .032$).

This satisfaction needs to be interpreted with care. These findings are not consistent with previous research (Karabulut et al., 2015; Masigati & Chilonga, 2014). The culture and gender roles might explain this inconsistency. First, in Jordan surgery is always connected to pain (with words in the semantic cloud of "surgery" being derived from the root "blade"), thus suffering from pain is expected. Second, male participants in this study were satisfied

despite being in pain because they might consider themselves as more masculine and less sensitive to pain, to match social expectations (Alabas, Tashani, Tabasam, & Johnson, 2012). Culture, as a group of customs, beliefs, attitudes, and practice of a certain population, may shape patients' expression of pain (Lovering, 2006). It is also believed that pain as a subjective experience is influenced by the way we have been raised. For example, some male patients might have a high threshold for pain because they were told in childhood that "boys do not cry" (Richardson, 2012). In line with this, it was found previously that men consume less morphine than women after surgery, and the gender of patients might play an imperative role in pain satisfaction (Zeidan, Al-Temyatt, Mowafi, & Ghattas, 2013). This observation postulates that patient satisfaction with pain management despite the prevalence of pain should not discourage adequate analgesics. Thus, one might argue that being satisfied with pain management is not an accurate indicator of the absence of pain prevalence and therefore suffering. Health care providers are called to be aware that pain expressions and culture are indivisible in the postoperative context. Once patients' cultural expression and signals of pain are explored and considered, more effective pain management can be delivered (Givler & Maani-Fogelman, 2018).

Implications to Nursing Practice

In the light of this discussion, there is a need to maximize postoperative patients' awareness of their human right to receive adequate pain management, considering gender role issues and cultural context. This might be accomplished through pain management care systems that are grounded in scientific evidence and incorporate best practice guidelines focusing on patients' experiences and satisfaction. In this context, the interdisciplinary team approach to pain management is multifaceted; it is an essential component of providing excellence in patient care after surgery. The team approach offers insight for patients and is often linked mainly to improved patient recovery, outcomes, knowledge, and satisfaction. However, substantial and serious commitment at the level of ward, organization, and policymaking and continuous longitudinal measurement are needed to adjust the overall pain experience in the postoperative context to meet the demands of increasing development.

Limitations

The present study was part of larger case study research targeting surgical wards in Jordan; thus the findings might not be generalizable to other clinical areas or hospitals. The sample was selected on a convenient basis, and the results might not represent the views and attitudes of other surgical patients with various sociodemographic characteristics. Survey research, in general, relies on patient self-reporting and memorizing, which may not always be accurate during the stressful time of hospitalization. Future studies might replicate the present study with a larger sample of surgical patients in different settings to validate the generalizability of the results.

Conclusions

This study offers valuable insights into the world of surgical patient satisfaction and beliefs relating to pain and its prevalence and management. Although effective postoperative pain management is vital for the provision of humane patient care, this was not the case in this study, where the prevalence of pain among surgical patients was high. What was surprising in this study was the satisfaction with pain management received by postoperative patients despite the prevalence of pain and its interference with daily life. This paradox of logic was more common among male participants and those aged 30 years and older. These findings therefore highlight the urgent need for training nurses to reduce barriers—in particular, the fear of addiction—and thus encourage patients to seek pain analgesics as needed.

The findings are also pertinent to the application of various screening tools in the postoperative context, taking into account the role of gender and culture. If patients' postoperative environment is to be a "pain-free zone," serious efforts and commitments are needed at the level of ward and organization to improve nursing pain management through multiple interventions targeted at patient and nursing staff factors.

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