

Original Article

Post-Operative Pain after Caesarean Delivery: Initial Assessment for Quality Improvement

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Abstract

Background: Pain is usually a common symptom of any disorder especially after surgery, in which pain management is a critical component of health care quality.

Objective: The aim of this study was to assess post-operative pain for women underwent caesarean section in the Shifa Medical Complex (Gyn/Obst wards).

Methods: This was a hospital-based cross-sectional study. Two hundred seven women who had undergone caesarean delivery were included in the study and interviewed on their first postoperative day using the American Pain Society/Patient Outcome Questionnaire.

Results: Response rate was 86.2%. Mean age was 28.1±6.5 years old. One hundred nine (46.1%) reported severe pain on Visual Analog Scale (VAS ≥ 8). Mean pain intensity in the first 24 hours after surgery was 7±2 out of 10 on the VAS. Women reported moderate interference of pain with activity and sleep pattern (5.88±2.85 and 5.78±2.91 respectively out of 10 on the VAS). Women (78.2%) did not involve in the decision of pain management, however they reported satisfaction.

Conclusion: Post-operative pain control was sub-optimal, however the patients reported satisfaction. Education of nurses and physicians on pharmacology of analgesics and tranquilizers and on non-pharmacological measures are recommended. A unify pain management policy and protocol is urgently needed to ensure safe practice.

Keywords: American Pain Society's Patient Outcome Questionnaire, Pain evaluation, Pain management, Post-operative pain

Introduction

Pain is a common symptom of any disorder that requires patients to seek healthcare. In surgical wards, a common question asked by patients is about amount of pain they will experience after surgery. However, post-operative pain management remains an issue of concern for clinicians and patients, because several studies have shown unsatisfactory practices to control pain postoperatively (Dihle et al., 2006; Schoenwald & Clark, 2006). This fact was

supported by a statement highlighted the poor pain assessment and management in British hospitals: "the treatment of pain after surgery in British hospitals has been inadequate and has not advanced significantly for many years" (Royal College of Surgeon. 1990). Unrelieved pain can result in negative consequences affecting patients' psychological and physiological functions (Carr et al., 2005), interrupting wound healing and delaying patient discharge (Bardiau et al., 2003) with subsequent impaired quality of

an individual's life (Kehlet et al., 2006; Manjiani et al., 2014).

Pain is recognized as a fifth vital sign and a subjective issue special to individual themselves (Lorenz et al., 2009; Walid et al., 2008). Therefore, it is usually underestimated and undertreated (Browne, 1996; Farrel et al., 1991). It is influenced by a variety of factors including but not limited to, age, gender, culture, previous experience and not least personal coping skills (Hall-Lord & Larsson, 2006; Shaw, 2006). The combination of this factors makes it complex to build a benchmark for all patients experiencing different quantity of pain after surgery. This means that every pain should be assessed at an individual level (Slomam et al., 2005).

Pain assessment is an initial step toward efficient relief of postoperative pain, which allows healthcare providers to be aware of the patient's condition. Moreover, it allows patients to actively participate in their care, resulting in feeling comfortable and improvement of body functions (Mc Guire, 1992). Previous studies revealed that postoperative pain in the first 24 hours occurs among 48%-88% of patients; of which 30% experienced severe pain (Asmundsdottir et al., 2010; Lorentzen et al., 2012; Wadensten et al., 2011). The best approach to ensure effective pain management is through exploring patient's opinion (AHCPR, 2002).

Pain management is an important aspect of healthcare quality in surgical wards (Peck et al., 2001). Two approaches can be used for pain management: either pharmacological interventions or comfort measures (non-pharmacological). However, control pain improves when both approaches are applied together. The routine pain management strategy in our study place does not consider patient's opinion about level of pain experienced. Usually, physicians prescribe non-steroidal anti-inflammatory medications (Diclofenac sodium 75mg IM/ bid and Tramadol 100 mg IM once). In addition, non-pharmacological interventions including walking outside the bed and deep breathing exercises are recommended.

In Palestine, no literature were found that had assessed post-operative pain among women undergoing caesarean sections (CS). Thus, this is a unique study aimed to assess the quality of postoperative pain and patient satisfaction among women who had undergone CS in the largest and

referral medical complex (Obs/Gyn wards) in the Gaza Strip, Palestine.

Methods

Design and setting: This was a hospital based cross-sectional study which took place in Shifa medical complex, which is a referral hospital located in the Gaza Strip and comprises three main hospitals: surgical, internal medicine and Obs/Gyn. The Obst/Gyn hospital has ten wards with 176 bed and serves thousands of females in Gaza city, in addition to cases referred from other hospitals outside its catchment area. The average monthly number of CS and normal deliveries performed in the hospital is 500 and 1200 respectively. The hospital has no pain clinic and no standardized protocol on how to address and manage pain.

Sample and sampling: A convenient sample of 207 women undergone CS were recruited. Women who were alert and oriented, willing to participate, >18 years old, exposed to general or spinal anesthesia, Arabic speaking and on their first post-operative day were included in the study. Women with a mental disorder and/or were in a critical situation were excluded.

Data collection: The Arabic version of the revised American Pain Society/ Patient Outcome Questionnaire (APS-POQ-R) which was established in 1991 (Bond et al., 1991) and revised in 1995 and 2010 (Dihle et al., 2008; Zoega et al., 2014) was used. The questionnaire was translated into 11 languages including Arabic (Gordon et al., 2010). The Arabic version was available and extracted from American Pain Society's website (<http://americanpainsociety.org/education/2010-revised-outcomes-questionnaire>). The APS-POQ-R was widely used among inpatients to assess quality and satisfaction with pain management (Asmundsdottir et al., 2010; Bostrom et al., 1997; Comley & DeMeyer, 2001; Dihle et al., 2006; Lin, 2000; McNeill & Sherwood, 1998). The questionnaire has two parts: The first part concerned the demographic and basic characteristics of participating subjects. The second part measured quality and satisfaction toward pain management in five dimensions as a measure of quality: 1. Pain severity; 2. interference on functions and sleep; 3. relief impact of pain negative emotions; 4. side effects of treatment; and 5. perceptions of care (satisfaction). Response to dimensions 1, 2, 3, and 4 were measured by a visual analogue scale (VAS) from 0 to 10 (or on 100 Numerical Scale

for question 2). Data were collected over three months period and on the first post-operative day, because the maximum post-operative pain is experienced 12-48 hours after surgery. Moreover, patients remember better their pain experience on their first 24 hours following surgery (Nettina, 1996). Every day in morning and after physicians round, women were gathered in a group and were given the questionnaire to fill out it. A fifteen minutes maximum time frame was sufficient to complete the questionnaire.

Ethical consideration: Prior to starting, hospital management provided its permission to conduct the study. All women were provided with aim and objectives of the study, and consent was obtained verbally to ensure willingness for participation with emphasize on privacy, anonymity, confidentiality and voluntary participation.

Data analysis: All data were analyzed using SPSS version 20.0 software. Continuous variables were expressed as mean \pm standard deviation ($M \pm SD$), whereas, categorical variables were presented in a form of frequency and percentage. Scores on VAS are from 0 to 10 and are classified into three groups; mild (1-3), moderate (4-7) and severe (8-10). All tests were conducted at the 5% significance level.

Results

Women characteristics: Two hundred forty women agreed to participate in the study. Thirty-three invalid questionnaires were excluded, of which twenty participants left the study unexpectedly and thirteen did not complete the whole questionnaire. Mean age \pm SD was 28.1 ± 6.5 years ranged from 16 to 50 years old. More than half of the women were treated with Tramadol 100mg IM once daily (58.9%) (Table 1).

Severity of pain: Women were asked to rate their pain on 10-points numerical scale. Intensity of pain was divided into three categories; mild (1-3), moderate (4-7), and severe pain (≥ 8). Twelve (5.8%), 85 (41.3%) and 109 (46.1%) of women reported mild, moderate and severe pain respectively in the first 24 hours after surgery. Mean pain experienced in the first 24 hours post-surgery was 7.0 ± 2.0 on the 10 points numerical scale, but the most repeated score was 8 on a 10 points numerical scale. Eighty-four (41.0%) reported that the least pain was mild during the first 24 hours of surgery (< 3), while 105 (51.2%) and 14 (6.7%) reported moderate and severe pain

respectively. More than two thirds declared that the severe pain persisted fifty percent or less during first 24 hours after surgery (Fig. 1).

Interference with activity and sleep: Twenty-eight women (13.6%), 114 (55.4%) and 60 (29.0%) reported mild, moderate and severe effect of pain on movement in bed respectively as measured by the VAS. Forty-nine women (33.7%) reported to have severe pain which significantly affected movement outside bed. Patient with mild, moderate or severe pain experienced sleep disorder, however without statistical significance ($P > 0.05$). Mean pain interference with ease sleep and continuous sleeping was 5.88 ± 2.85 and 5.78 ± 2.91 respectively on the 10 points numerical scale (Fig. 2).

Impact of pain on emotions: Majority of women (84.9%) reported mild to moderate feeling of anxiety and worry because of pain (score ≤ 7 on VAS) (2.77 ± 3.32). However, other negative emotional consequences of pain (depression, frightened and helpless) were not a concern for them (Fig. 3). Overall, mean pain experienced by women who had undergone CS had low inference with activity, falling asleep and emotions (3.8 ± 1.7 on 10 points VAS) (Table 2).

Adverse drug effect: Majority of women reported low incidence of adverse drug effect in the first 24 hours after surgery (1.8 ± 1.6) on the 10 points VAS (Fig. 4).

Satisfaction with and quality of pain management: One hundred forty one (68.1%) women reported comfort with interventions provided to relief pain (score ≥ 6 on VAS). However, the majority (78.2%) were not actively involved in decisions regarding pain management (2.28 ± 3.49 on VAS). By and large, 160 women (77.3%) were generally satisfied with management of pain during hospitalization (score ≥ 7 on VAS). One hundred ninety seven (95.2%) received information about choices and alternatives to control pain. Of which, 48.8% and 29.5% stated that information was not beneficial at all and highly informative respectively (Fig. 5). With regard to comfort measures, 30 (14.5%) used no measures, while 66 (32.0%) followed walking in ward and 104 (50.2%) used more than two comfort measures to relief their pain. Ninety one (44.0%) women reported that nurses and physicians encouraged them to use non-pharmacological measures, while 39 (18.8%) had never been encouraged.

Table 1: Women characteristics

Variable	M±SD	n (%)
Age	28.1±6.5	
Education		
Up to secondary		111 (53.6)
University		87 (42.0)
Postgraduate		9 (4.4)
Postoperative analgesia		
Paracetamol tab		4 (1.9)
Diclofen 75mg IM		48 (23.2)
Tramadol 100mg IM		122 (58.9)
Pethidine 50mg IM		33 (15.9)
Frequency of analgesia		
Once		124 (59.9)
bid		74 (35.7)
Tid		4 (1.9)
SOS		5 (2.4)

Response to APS-POQ-R items

Table 2 provides a descriptive analysis of APS-POQ-R items.

Item	Mean	SD
On this scale, please indicate the least pain you had in the first 24 hours	7.0	2.0
On this scale, please indicate the worst pain you had in the first 24 hours	4.1	2.0
How often were you in severe pain in the first 24 hours?	3.9	2.6
Pain severity	5.0	1.5
Doing activities in bed such as turning, sitting up, repositioning:	6.1	2.3
Doing activities out of bed such as walking, sitting in a chair, standing at the sink:	5.6	2.3
Falling asleep	5.9	2.9
Staying asleep	5.8	2.9
Anxious	2.8	3.3
Depressed	1.2	2.4

Frightened	1.8	2.9
Helpless	1.5	2.7
Pain inference	3.8	1.7
Nausea	1.1	2.3
Drowsiness	3.7	3.1
Itching	0.4	1.6
Dizziness	2.1	2.9
Adverse drugs effect	1.8	1.6
In the first 24 hours, how much pain relief have you received?	6.6	2.3
Were you allowed to participate in decisions about your pain treatment as much as you wanted to?	2.4	3.5
Circle the one number that best shows how satisfied you are with the results of your pain treatment while in the hospital?	7.8	2.1
Did you receive any information about your pain treatment options?	3.9	4.1
Pain relief	5.2	1.8

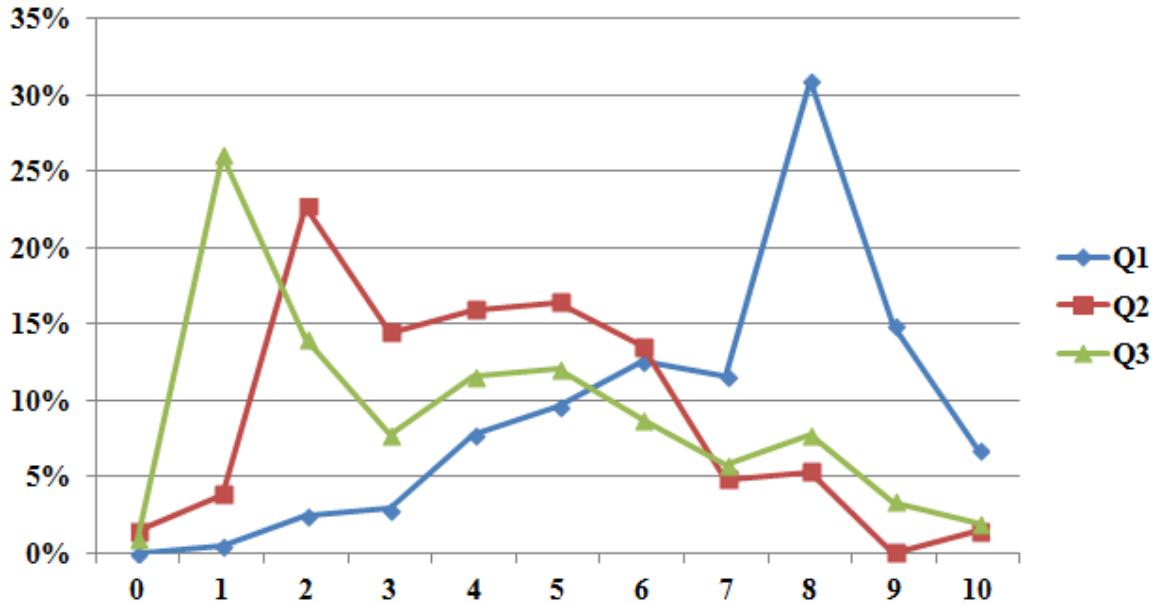


Figure (1): Pain severity measured by **Q1:** least pain in the first 24 hours, **Q2:** the worst pain in the first 24 hours. **Q3:** How often severe pain in the first 24 hours?.

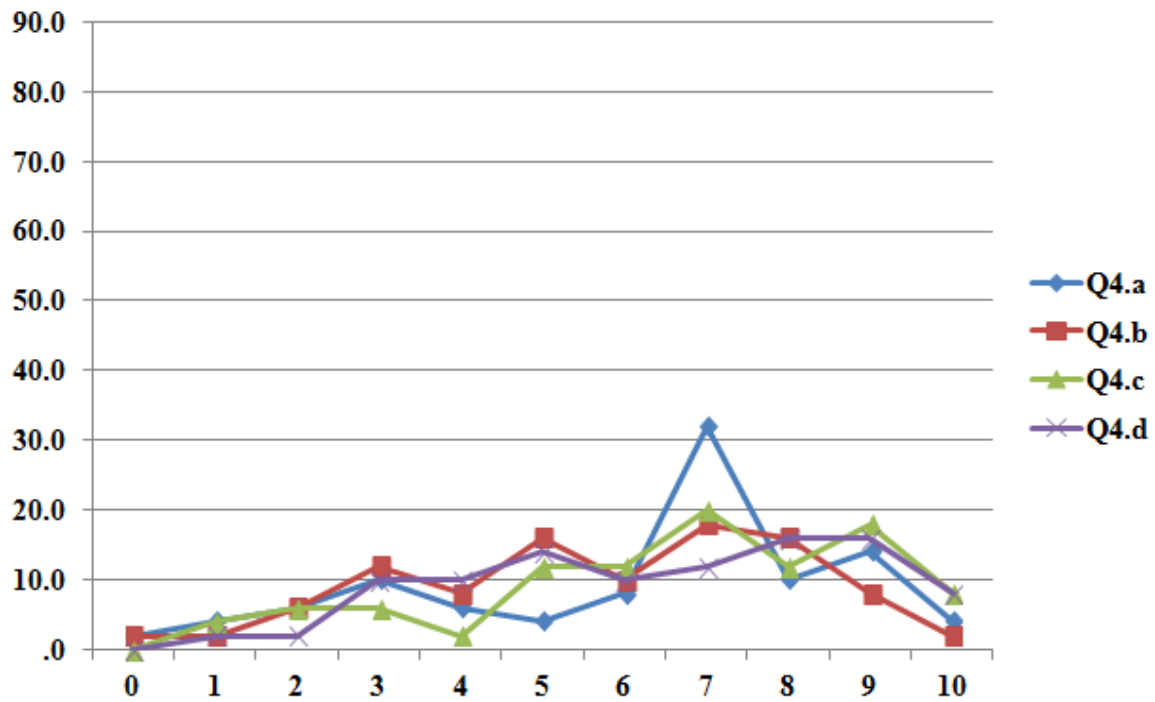


Figure (2): Pain inference: Q4a: Doing activities in bed, Q4b: Doing activities out of bed, Q4c: Falling asleep, Q4d: Staying asleep

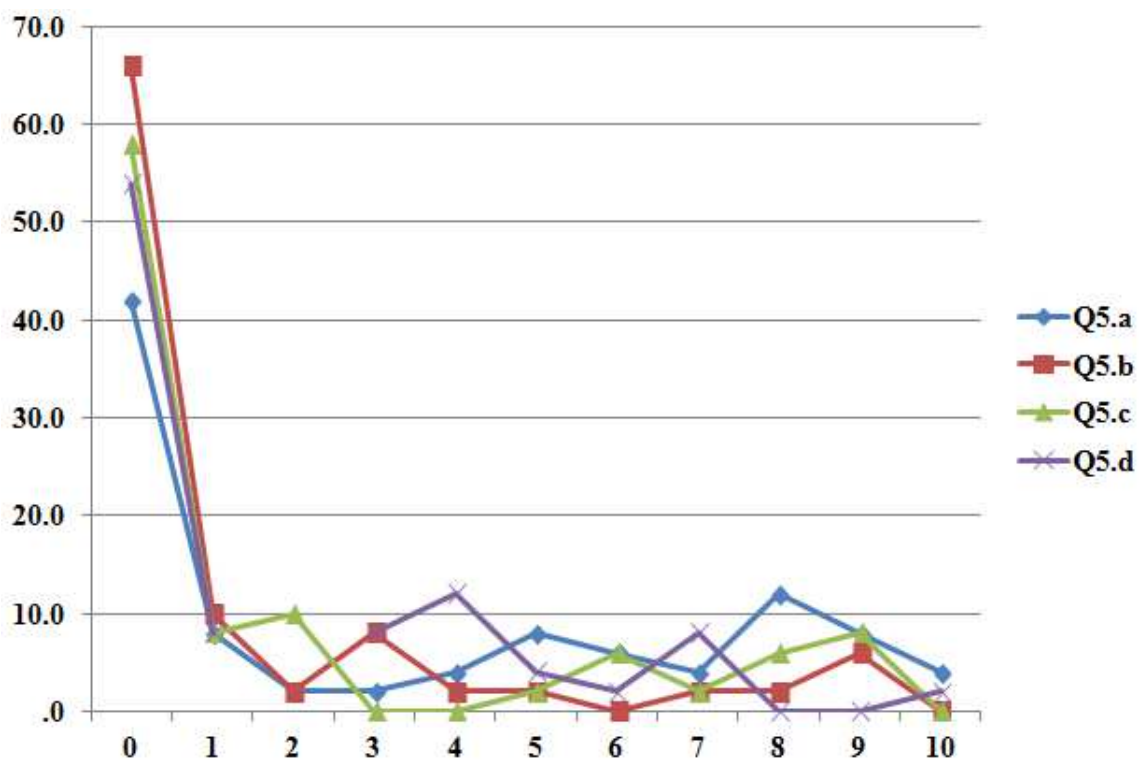


Figure (3): Effect of pain on mood and emotions: Q5a: Feel anxious, Q5b: Feel depressed, Q5c: Feel frightened, Q5d: Feel helpless

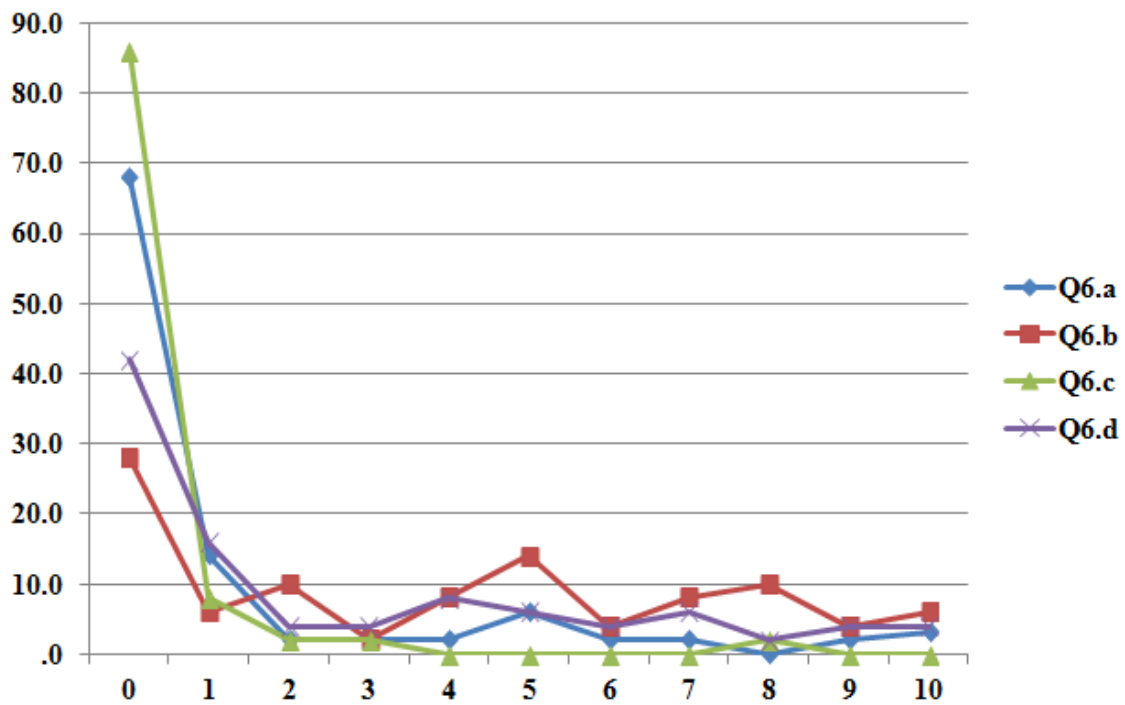


Figure (4): Adverse drugs effect: Q6a: Nausea, Q6b: Drowsiness, Q6c: Itching, Q6d: Dizziness'

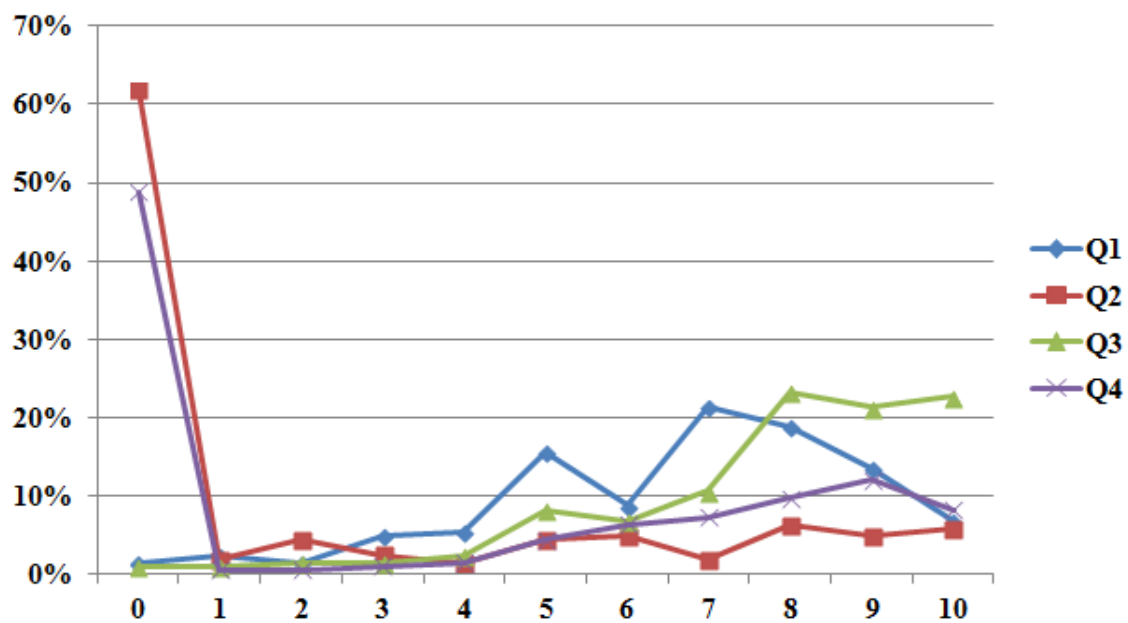


Figure (5): Pain relief: Q1: pain relief received?, Q2: participation in decisions about pain treatment, Q3: satisfaction with the results of pain treatment, Q4: information about pain treatment options

Discussion

In this study, the intensity of pain reported in the first 24 hours after CS surgery on the 10 points numerical scale, was quite high (M: 7.00; Median: 8.00), similar to that reported by Klopfenstein et al. (2000). Whereas, Chung and Lui (2003) reported 24.1% and 3.3% of subjects with moderate and severe pain respectively. Our findings raised the issue of whether pain management was optimal or not. Differences in reported incidence of pain could be attributed to various factors; for instance, organizational factors and cultural aspects. Western studies revealed that healthcare organizations stressed on the importance of implementing pain management and therefore, nurses and physicians were aware about the importance of administering analgesia to reduce intensity of pain and improve quality of life (QoL) and wellbeing. In return, the practice in our hospitals remains traditional and routinely based. With regard to cultural aspect of pain after surgeries, some communities are reluctant to disclose pain as shown by Chung and Lui (2003), who stated that Chinese people are usually hesitant to display pain to public.

Improving the quality of pain management is dependent on multifaceted factors, which requires the involvement in all aspects of care players, including nurses, patients and physicians and having a uniform guidelines and protocols. Findings of our study have shown that most women were satisfied with quality of pain management. Usually, satisfaction is built on experiences and expectations (Sixma et al., 1998). However, Beck et al. (2010) has shown that despite severe pain experienced by patients, they usually express satisfaction. This paradox impression attributes satisfaction not only to pain relief measures, but also to other hidden factors such as relationship with healthcare providers (Beck et al., 2010; Dawson et al., 2002).

The art of nursing in the management of pain after surgery includes non-pharmacological measures. Emotional support, back massage and relaxation techniques, deep breathing exercise, providing favorite entertainment for patients, early out of bed movement and visiting time opportunities for patients are the best examples to minimize pain. Physicians and nurses should assess patients and respond to their needs. It is necessary to raise knowledge of physicians and nurses about pharmacology of pain killer

classifications because it will help them in clinical decision about pain control and relief.

Conclusion

Pain after caesarean section was not appropriately controlled and this may result in negative consequences and outcomes to women. Development of protocols and guidelines to control pain post-operatively become highly necessary to unify health worker performance. Education of physicians and nurses is urgently needed on the best methods to control and relieve pain considering local context values and resources. Based on our study and the importance of post-operative pain management, further studies are required in this regard to involve all unanticipated hospitals and include other surgical wards.

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