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Research Article

The Role of Nurses in Pain Management in Post-Bariatric-Surgery Patients at Aster Sanad Hospital

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Abstract

Introduction: Weight-loss or bariatric surgeries help people lose weight and hence limit health risks that are related to obesity. These surgeries are alternatives to other methods of reducing weight that have proved ineffective in treating extreme cases of the condition. Bariatric surgeries reduce body weight through restriction and malabsorption. One of the essential requirements in health care is adequate pain management. Unmanaged pain can have an adverse psychological and physiological effects, which greatly impacts, not only desired clinical and psychological outcomes but also patient's overall quality of life. The role of nurses is very crucial in pain management after surgery. The nurses work closely with surgeons to provide good patients care, and nurses are the ones who usually intervene in the management and relief of pain as it rises to unbearable levels. The aim of this study is to determine how effective the role of the nurses in assessing pain, determination of the kind of pain and hence the best approaches in providing patients' care for post bariatric patients in the ward. **Study design and tools:** The study was conducted at the surgical ward of Aster Sanad Hospital in Riyadh, Saudi Arabia. A total of 50 post-operative bariatric patients were enrolled. In this study, we evaluated the perception of patients based on various criteria such as pain severity, score, pain relief methods, factors that lead to increased pain, type and location of pain, and radiation area. This was done by following the PQRST tool in pain assessment. **Results:** In terms of pain severity, 14 (28%) of patients reported to have mild pain, 23 (46%) had moderate pain, 11 (22%) reported severe pain and 3 (6%) of patients had no pain. Effective pain relief methods varied from one patient to another. The majority of patients 18 (36%) found that walking was effective in relieving pain, while 15 (30%) patients had effective pain control by using prescribed analgesic medications. Our study reported that 26 (52%) of patients suffered from post-operative pain when attempting to move, while 10 (20%) of patients experienced pain when drinking water. We found that 32 (64%) of patients had no pain radiation to other areas of the body whereas 15 (30%) of patients had pain radiating to their back and only 3 (6%) of patients had pain in the abdominal area. Moreover, Approximately, 22 (44%) of patients experienced stabbing pain, while 21 (42%) of patients had burning pain. 2 (4%) of patients had colic pain and 2 (4%) experienced both burning and stabbing pain. **Discussion:** Determining how effective the role of nurses in assessing pain, establishing the kind of pain and hence the best approaches in providing patients' care for post bariatric patients in the ward is very imperative. It is important to explore effective, efficient and favourable outcomes for the management of post-operative pain, which would improve the clinical outcomes and patients' quality of life.

Keywords: Pain; Nurses; Post-bariatric-surgery; Weight loss

Introduction

Weight-loss or bariatric surgeries help people lose weight and hence limit health risks that are related to obesity. These surgeries are alternatives to other methods of reducing weight that have proved ineffective in treating extreme cases of the condition. Bariatric surgeries reduce body weight through restriction and malabsorption. Restriction reduces the amount of food that the stomach can store, hence limit the calories taken in. Malabsorption either shortens or bypasses the ileum to reduce the number of calories absorbed into the body. There are four types of bariatric surgeries including duodenal switch and biliopancreatic distraction, Roux-en-Y gastric bypass, sleeve gastrectomy, and laparoscopic adjustable gastric band. The choice of the type of bariatric surgery depends on the severity of obesity, Body Mass Index (BMI), effectiveness of non-surgery methods of reducing weight, and risks likely to be encountered. Given that obesity and weight loss are a problem, and other methods of weight loss have proven ineffective, especially in providing consistent weight loss results, bariatric surgery is indeed a lifesaver. Bariatric surgery is a peculiar field, given the potential a single surgery has in limiting if not, curing a number of medical diseases such as arthritis, diabetes, liver disease, venous stasis diseases, high cholesterol, chronic headaches, sleep apnea, and hypertension. Over the last ten years, fast recovery and minimal intrusive methods have led to the uptake of bariatric surgery. Even with distinction of the weight loss operations as either restrictive or malabsorptive, there has been an evolution in the procedures undertaken. Advances in technology and research have relegated some of the procedures including jejunocolic bypass, vertical banded gastroplasty, biliopancreatic diversion, and jejunoileal bypass to legacy status for better procedures [1]. However, even with the adoption of new procedures, there are factors to consider before choosing any singular procedure. Moreover, there are post-surgery interventions and side effects that candidates must consider before undertaking any of the procedures [2].

One of the essential requirements in health care is adequate pain management. Unmanaged pain can have an adverse psychological and physiological effects, which greatly impacts, not only desired clinical and psychological outcomes but also patient's overall quality of life. Unfortunately, unmanaged pain remains greatly unresolved despite great advancement in knowledge. Effectual management of pain results in better clinical outcomes and enhanced patient's satisfaction. Although research has reported improvements in pain management, little awareness of best practice protocols in post-operative pain persists. Hence, more interventions in clinical practices are very essential [3].

The role of nurses after surgery is very crucial in pain management. The nurses work closely with surgeons to provide good patients care, and nurses are the ones who usually intervene in the management and relief of pain as it rises up to unbearable levels. Pain management is very important in such multi-dimensional surgeries (International Association for the Study of Pain (IASP) [4-6]. Communication with surgeon and medical team is vital after any type of weight-loss surgery (bariatric Procedure). Patients' tolerance to pain varies greatly, so it's often hard for the bariatric surgeon or nurse to determine how the patient will react in comparison with other patients who underwent a bariatric surgery. While a moderate amount of discomfort is expected following bariatric surgeries, the patient must notify the surgical team of any intolerable pain. At our hospital, a scale of 0-10 is used to evaluate pain levels in patients with 0 being no pain at all and 10 being the worst pain possible. This help nurses and surgical team determine whether they should act or not. Another way to communicate pain by patients is through simple descriptive terms such as mild, moderate and sever [7].

Nurses play an important role in management of post-operative pain, which makes it such a considerable role in the surgical field. Nurses typically define 'quality' as a conformance to standards of care, and patients usually have an undefined quality of care [8]. Nurses are responsible in ensuring early detection, accurate pain assessment, pain management, and evaluation of pain during pre-operative and post-operative care [9]. This often places nurses in a position of setting the standard and quality of care in a particular medical facility. The effectiveness, efficiency, optimality, acceptability, legitimacy and equity of how nurses deal with patients' management of pain are one of the important attributes that lead to a judgment that care is of "good" or "poor" quality [10,11]. While much effort is needed to improve the effectiveness of pain management, educational programs in practice are much needed [10].

The aim of this study is to determine how effective the role of the nurses in assessing pain, determination of the kind of pain and hence the best approaches on providing patients' care for post bariatric patients in the ward. What a patient believes and understands about pain is critical in influencing the patient's reaction to the pain therapy provided. It is imperative to explore effective, efficient and favourable outcomes for the management of post-operative pain.

Study Settings

The study was conducted at the surgical ward of Aster Sanad Hospital in Riyadh, Saudi Arabia. The participants were patients who underwent bariatric weight loss surgery. A total of 50 post-operative bariatric patients were enrolled in the study.

Procedures

In this study, we evaluated the perception of patients based on various criteria such as pain severity, score, pain relief methods, factors that lead to increased pain, type and location of pain, and radiating area. The patient's perception of pain was measured on a scale from 0 to 10, with 0 being no pain at all, and 10 being extremely painful. The design of the study involved asking patients to describe or rate their experience of pain. For example, the severity of pain was assessed based on descriptive measures such as no pain, mild, moderate, severe. The location of pain was also observed to check whether it was local at the operation site or whether it radiated to other areas of the body such as back, chest and abdomen. In addition, patients were monitored for any pain relief in response to different body positions such as walking, lying, or the need for use of analgesic drugs or spirometer. Increased pain was also assessed based on what patients reported, for instance, when coughing, drinking water, or moving. The type of pain (stabbing, burning, colic etc.) was also assessed.

Tools

The following specific tools and series of questions involved in pain management were used for pain assessment.

- P (provoking factors): What is the patient perception of pain? What makes the pain better? What makes it worse?
- Q (quality): What is the nature of pain? How is it described e.g. burning, stabbing, shooting or tingling?
- R (region and radiation): Where is the pain located? Does the pain radiate or spread to other parts of the body?
- S (symptoms and severity): How severe is the pain? Does it interfere with activities and other functions? How severe is the pain from 1-10?
- T (timing and treatment): Is the pain constant or does it come and go? Is the pain sudden or gradual? How long does it last?

Results

Severity of pain

The study investigated the experience of patients to feelings of pain in the acute postoperative period (24-48 hours after surgery) according to the severity of pain. 14 (28%) of patients reported to have mild pain, 23 (46%) had moderate pain, 11 (22%) reported severe pain and 3 (6%) of patients had no pain. Refer to (Figure 1).

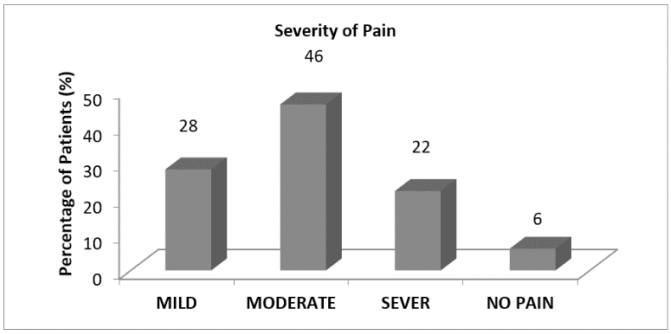

Figure 1: The severity of pain as reported by patients who underwent bariatric surgery.

Pain relief methods

According to previous studies on pain management, effective pain control reduces post-operative mobility such as deep breathing and the basic four post-operative mobility activities: turning in bed, sitting at the side of the bed, standing, and walking.

Effective pain relief methods varied from one patient to another. The majority of patients 18 (36%) found that walking was effective in relieving pain, while 15 (30%) patients had effective pain control by using prescribed analgesic medications. A few patients 4 (8%) found both walking and analgesic medications useful in reducing pain. 6 (12%) of patients reported that the use of spirometer had effective pain relief, while 1 (2%) of patients had effective pain relief by eating, and 1 (2%) of patients found that assuming a different lying position quite helpful in reducing pain. 2 (4%) of patients had effective pain relief by two methods, which were walking and use of spirometer. Only one patient (2%) felt better using both analgesic medications and spirometer. Refer to (Figure 2).

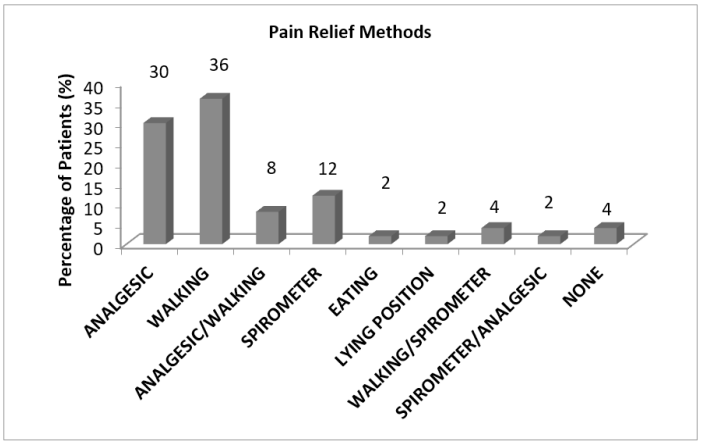

Figure 2: Pain relief methods as reported by patients who underwent bariatric surgery.

Intensified pain

The neuromatrix theory of pain revealed that the pain as a multidimensional experience produced by influences not only from injury, inflammation or other tissue pathology but also from areas in the brain. At the same time, the brain processes a neural network determining the particular qualities of the pain experience and behaviour as well as the cognitive interpretation of the situation. Many patients expect and accept pain as a natural consequence of surgery. However, postoperative pain continues to be a clinical problem.

Our study reported that 26 (52%) of patients suffered from post-operative pain when attempting to move, while 10 (20%) of patients experienced pain when drinking water. 9 (18%) patients suffered from post-operative pain when coughing, and only one patient (2%) experienced pain due to constipation as a consequence of operation. Refer to (Figure 3).

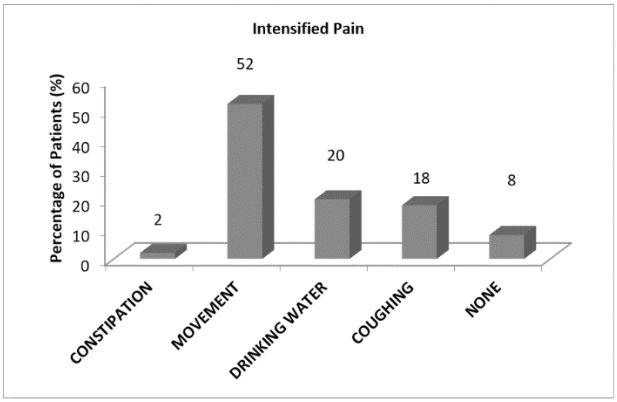

Figure 3: Reasons for intensified pain in post bariatric operation patients.

Pain radiating to other body areas

Assessment of patients' pain by the nurse and medical staff is an important part of the surgical experience to ensure appropriate interventions in a timely manner as this helps in the recovery process from surgery. A pain assessment system to enhance the care of patients in terms of pain management is very crucial.

By asking patients to state where they felt pain in their body, we were able to ascertain the most common sites that pain might radiate to. We found that 32 (64%) of patients had no pain radiation to other areas of the body whereas 15 (30%) of patients had pain radiating to their back and only 3 (6%) of patients had pain in the abdominal area. Refer to (Figure 4).

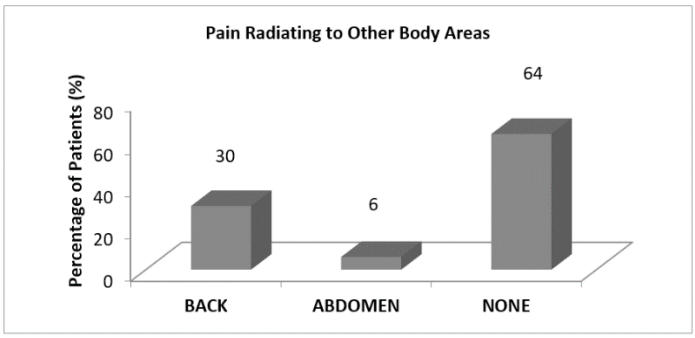

Figure 4: Radiating pain to other parts of the body in bariatric post-operative patients.

Types of pain

Patients experienced different types of pain. Approximately, 22 (44%) of patients experienced stabbing pain, while 21 (42%) of patients had burning pain. 2 (4%) of patients had colic pain and 2 (4%) experienced both burning and stabbing pain. These are illustrated in (Figure 5).

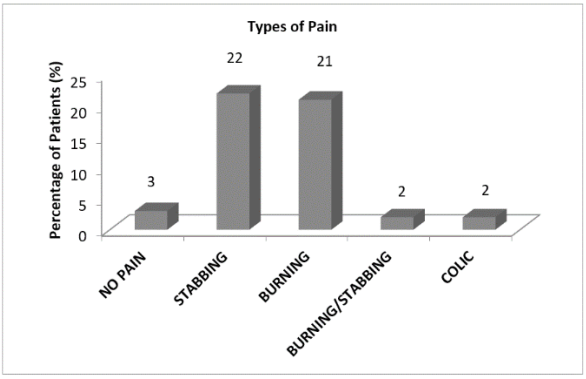

Figure 5: The different types of pain as experienced by bariatric post-operative patients.

Site of pain

In this study, patients reported that they felt pain at a variety of body sites. The majority of patients 19 (38%) experienced abdominal pain, followed by 18 (36%) of patients who experienced epigastric pain. The remaining were as follow: 5 (10%) of patient suffered from chest pain, 2 (4%) of patients had both chest and abdominal pain, 2 (4%) of patients had pain at the operation site, 1 (2%) experienced both abdominal and operation site pain, and 1 (2%) of patients had pain at the left side of the abdomen. Refer to (Figure 6).

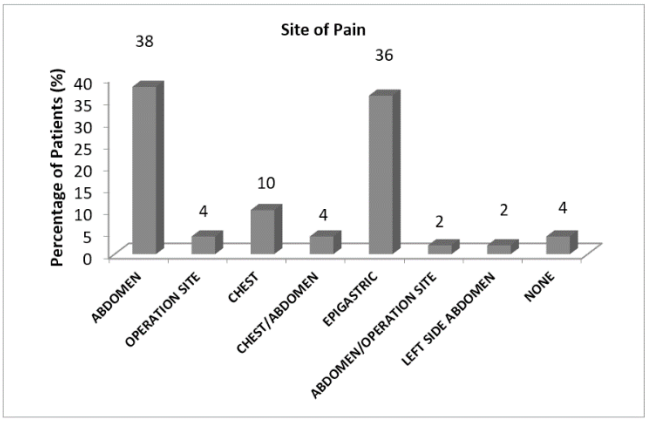

Figure 6: Locations of different sites of pain in bariatric post-operative patients.

Discussion

One of the leading causes of death in the industrialised world is obesity [12]. The prevalence of obesity has doubled since 1980. The rate continues to grow significantly in the United States. Obesity is defined by an increased BMI that is higher has normal, where normal BMI is 25kg/m^2; BMI that is >30 kg/m^2 is considered obese; BMI > 40kg/m^2 is morbidly obese and BMI > 50kg/m^2 is considered super-morbidly obese. This raise in obesity showed in both men and women alike, and in all races, ethnic, and socioeconomic backgrounds. The life expectancy is reduced by 5 to 20 years due to morbid obesity, predicting that the current generation might have a shorter life expectancy than the last generation [12].

Bariatric surgery has become a common effective way of treating morbid obesity. The number of procedures of bariatric surgeries had increased sevenfold since 1997 in the United States, suggesting that bariatric surgery has proven to be safe and effective [12]. Weight loss surgeries could be classified as malabsorptive and restrictive. 88% of bariatric procedures in the United States are Roux-en-Y gastric bypass (RNYGB), which is restrictive and malabsorptive. Other malabsorptive procedures such as biliopancreatic diversion-duodenal switch (BPD-DS) is not as common in the United States due to its higher risk profile. The same goes with other restrictive procedures such as the Laparoscopic Adjustable Gastric Banding (LAGB), Vertical Banded Gastroplasty (VBG), gastrectomy, and sleeve gastrectomy procedures are all procedures to reduce the size of stomach so it fills faster with small amounts of food.

The experience of pain can be sensory or emotional that is influenced by various factors including sensory, cognitive, behavioural, socio-cultural, and physiological factors. Assessing the perceptive of patients to pain after operative procedures is imperative. The neuromeric theory of pain revealed that pain as a multidimensional experience produced by influences, not only from injury, inflammation, or other tissue pathology but also from areas in the brain. At the same time, the brain processes a neural network determining the qualities of the pain experienced and behaviour as well as the cognitive interpretation of the situation. The physiological response on the body such as the endocrine, autonomic, immune and endogenous opioid system is conceptualized as a type of chemical gating mechanism, the most effective in reducing pain [13,14]. Nevertheless, surgeries often involve tissue damage, which initiates nociceptive stimuli and acute pain experience [15]. This mechanism increases the level of pain and may produce continuous pain that sometimes develops into a chronic condition [16].

Pain control after bariatric surgery is a major challenge. Although several reviews covering anaesthesia and analgesia for obese patients were published, there was mainly expert opinion and a paucity of evidence-based recommendations. Advice on general pain management includes multimodal analgesic therapy, preference for regional techniques, avoidance of sedatives, non-invasive ventilation with supplemental oxygen, early mobilisation and elevation of the head of bed to 30 degrees.

In our study, we were interested in patients' perception to pain management approaches. Effective pain relief methods varied from one patient to another. While 52% of our cohort of patients suffered from post-operative pain when attempting to move, we could, in fact, demonstrate that most patients who underwent bariatric surgery experienced mild pain, which could be relieved by walking. Some patients found that prescribed analgesic medications helpful and those account to 30% of our cohort. Interestingly, only 6% of our cohort had pain in the abdominal area, which was the site of operation. We found that the majority of patients (30%) had pain radiating to their back and 64% had no pain radiation to other areas of the body at all.

The gold standard of pain assessment is patient's self-report. Fink et al. reported that pain management tools are highly reliant on verbal communication in particular those tools, which use numeric ratings. While these tools might be useful for verbally communicative patients, it might not be appropriate for patients who are unbale to communicate verbally or are cognitively impaired [4]. It is paramount to rely on other nonverbal cues such as changes in vital signs, and facial grimacing. Various responses to pain have been reported in Alzheimer's patients by Marzinski [17]. For instance, a patient who often moaned and shook became quiet and reserved when experiencing pain [17]. Appropriate pain management and educating nurses about safe pain reporting and management is imperative. This will help preventing pain undertreatment and subsequent uncomfortable effects.

Conclusion

In conclusion, pain that is experienced in any part of the body after surgery is an important post-operative complication, which is essential to acknowledge in the bariatric surgery population. Determining how effective the role of the nurses in assessing pain, determination of the kind of pain and hence the best approaches on providing patients' care for post bariatric patients in the ward. It is imperative to explore effective, efficient and favourable outcomes for the management of post-operative pain, which would improve the clinical outcomes and quality of life of patients.

Conflicts of Interest

The authors disclose no conflict of interest with regard to this study.

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