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IMMP1

Pain and Anxiety on Post Orthopedic Surgery: A Descriptive Study

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ABSTRACT

Pain and anxiety is the most common problems following surgery. The aim of this study is to demonstrate socio-demographic, pain and anxiety scale. This research is descriptive study of 62 patients on post orthopedic surgery with lower extremity fracture. Data were espressed as frequency, percentage, mean and 95% CI. The results, mean of age was 41 years (95%CI: 37.5-44.7), 30.6% young adult and 69.4% middle age, 67.7% male and 32.3% female. Pain and anxiety were measured by the visual analog scale (VAS). VAS pain scale after Surgery was (mean: 49, 95% CI: 48.5-49.7), and VAS for anxiety was (mean: 47.8, 95% CI: 47.1-48.5). The conclusion is that the average pain and anxiety scale below 50 (below moderate) means that the patient with post orthopedic surgery still feels pain and anxiety but can tolerable. We suggest that it is necessary to give nursing interventions, for collaboration with medical therapy to achieve maximum results.

Keywords: Pain, Anxiety, Ortophedic surgery

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Introduction

Orthopedic surgery is considered among the most painful of surgeries (Pasero & McCaffery 2007; Lindberg et al., 2013). Pain is defined as an unpleasant sensory and emotional experience related with actual or potential tissue damage or described in terms of such damage (International Association for the Study of Pain, 1994). Pain associated with major orthopedic surgery, such as total join replacement (TJR) or action ORIF increases the risk perioperatively. One risk (12%) in both TJR and ORIF patients experiencing prolonged ambulation mostly involve pain (Chelly, B. et al, 2003; Novita, 2012).

Postoperative pain has been reported among approximately 40% of patients i.e. moderate-severe acute postoperative pain (Dolin et al, 2002; Wylde et al, 2011). In a study by Warfield and Kahn (1995), after surgery, about 80% or three of four patients said they had suffered pain from moderate to severe (Warfield & Kahn, 1995; Sivrikaya, 2012). Considering this, pain management after orthopedic surgery is very important (Harvey, 2005; Bu¨yu¨kyilmaz & Asxtı, 2010). WHO (World Health Organisation) recommends the use of analgesics to control pain (Kumagai, 2013).

The giving of analgesics is standard procedure in postoperative pain management (WHO, 2003). Administration of analgesics is proven to reduce postoperative pain because analgesics can block pain at the peripheral or central nervous system level (Kumagai, 2013). Despite this, many patients continue to experience intense pain after surgery, although it has developed programs and new standard in pain management is on going (Apfelbaum, 2003; Sivrikaya, 2012).

Unrelieved postoperative pain may lead to psychological and clinical changes that increase mortality, morbidity, decline quality of life and costs (Apfelbaum, 2003; Tse, Chan & Benzie, 2005; Ozer, 2013). High anxiety levels increase pain perception. In addition, acute pain also causes anxiety. The presence of health anxiety in patients who have chronic pain negatively influences their respon to pain and it is associated treatments (Brunckenthal, 2008; Ferrell, 2005; Jand and Slade, 2007; Potter and Perry, 2011) Clinical studies have found when pain after surgery addressed properly, will reduce complications and faster recovery. Pain and anxiety need to be handled properly, it is necessary to do the assessment scale of pain and anxiety that occurs in patients, especially post ORIF surgery, so that proper management can be taken, both pharmacological and non-pharmacological.

Objective of the study

The aim of this study to demonstrate socio-demographic, pain and anxiety scale on post ortophedic surgery of lower extremity fracture in Surakarta hospital, Central Java, Indonesia.

Material and Method

Study design and population

This research is descriptive study of 62 patients on post open reduction and internal fixation surgery of lower extremity fracture. Research was conducted from july-August in Surakarta Hospital, Cental Java, Indonesia, and obtainded 62 respondents. Eligible participants were taken from a surgical list provided by the hospital, as appropriate with inclusion criteria. The population in this study were all adult patients with extremity fracture age 18 -60 years who underwent ORIF surgery and were hospitalized in inpatient wards, of Karima Utama Hospital of Surakarta,

Central Java, Indonesia. The measurement of pain and anxiety was 6 hour after injection cetorolac.

Sample

To determine the eligible patients from the population, researchers use a consecutive sample. That the selection use inclusion and exclusion critheria. Inclusion critheria in this study include: 1) Patients have an extremity fracture. 2) Patients age 18-60 years. 3) Scheduled for ORIF procedures 4) Are expected to receive analgesic IV cetorolac. 5) Patients have the ability to communicate, i.e. no appreciable deficits in hearing or vision. Exclusion criteria in this study were: 1) inability to see sufficiently to mark the visual analog scale. 2) have other additional oeration.

Measurement

Instruments that used to measure the intensity of pain in this study using a visual analog scale (VAS), include VAS for pain and VAS for anxiety. This scale uses a 100 mm horizontal line. VAS scale was measured using a millimeter from 0 to 100 mm (Gould et al., 2001). Anchor descriptions are often used for pain is scale of 0 indicated "No pain" and to scale 100 is "worst pain immaginable" (Hjermstad et al.,2011). Gallagher et al (2002) conducted the validity and reliability of the VAS scale, the result is, VAS proven valid to measure pain (F = 79.4, P <0.001) (Allerd et al., 2010). VASA consists of a horizontal line with a length of 100 mm. The left end of the horizontal line has an anchor "no anxiety" and the far right is the "high anxiety". VASA validity has been investigated by Hornblow, & Kidson, (1976) this instrument, proved to be useful for measuring anxiety.

Validity and reliability

Gallagher et al (2002) conducted the validity

and reliability of the VAS scale, on the 40 patients with abdominal pain in the emergency room. Intra-class correlation coefficient (ICC) between VAS at one minute apart was used to perform test-retest reliability. VAS proven reliable with ICC = 0.99 (95% CI 0989 to 0992). Researchers using ANOVA test to measure the validity of the measuring instrument VAS. the result is, VAS proven valid to measure pain (F = 79.4, P <0.001) (Allerd et al., 2010).

VASA validity has been investigated by Hornblow, & Kidson, (1976) tested against two groups, namely psychiatric inpatients and medical students. This instrument, proved to be useful for measuring anxiety. VASA reliability has been investigated by Lim Hook et al (2008), on the female surgical patient, given music therapy and assessed the level of anxiety. Reliability results in Lim Hook research was .96 (p <.001) (Lim Hook et al., 2008).

Statistical analysis

Data were espressed as frequency, percentage, mean and 95% CI. The stata 13 statistical sofware was used to perform statistical analysis.

Results

The research data based on demographic characteristics and medical history of the subject is shown in table 1. The average age was middle age (31-60 years) and the fewer age was young adults (18-30 years). The mean age was 41 years, 95% CI : 37.5-44.7.

From the table.1, it can also be concluded that the distribution of patients by gender, the number of male more than female respondents. Male patients were 67.7% and female were 32.3%. the mean 1.3, 95% CI : 1.2-1.4.

The distribution of patients based on history of previous surgery, the most of patients was the patients

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who do not have a history of previous surgery 75.8% and patients who have history of previous surgery were 24.2%.

Based on table 1, the mean of pain were 49 with 95% CI : 48.5 – 49.7 and the mean for anxiety were 47.8 with 95% CI : 47.1- 48.5.

Table 1   Frequency, percentage and convidence interval (CI) of demographic characteristics patients, pain and anxiety

Variables	n (62)	%	95% CI
Age group			41 years (95CI:
-(18-30 years)	19	30.6	37.5-44.7)
-(31-60 years)	43	69.4	
Gender			
-male	42	67.7	(mean: 1.3,
-female	20	32.3	95%CI: 1.2-1.4)
Surgical history			
-never			
-ever	47	75.8	NA
	15	24.2	
VAS Pain Scale Post surgery	62	100	(mean: 49, 95%CI: 48.5-49.7)
VAS anxiety scale Post surgery	61	100	(mean: 47.8, 95%CI: 47.1-48.5)

Discussion

In this study the majority of age were middle age (69%) and young adults (31%).. The mean of age was 41 years (95CI: 37.5-44.7), 30.6% young adult and 69.4% middle age (mean: 1.7, 95% CI: 1.6-1.8). The

age range in this study were 18-60 years can be categorized into young adulthood (18-30 years) and middle age (31-60 years). This age range is selected, based on the research of Basic Health Research of Indonesia (2007), that the majority of the population in indosenia who have fracture is the productive age range (18-60 years). The age 18-60 years defined as respondents because not only the age of most fractures in Indonesia, but also in this age range or adulthood occasionally reported pain only if it is a pathological condition and malfunction (Strong, Unhur , Wright, & Baxter, 2002; Singh and Lewallen 2008; Novita; 2012). Whereas in patients with age that can be classified as the age of the children will be difficult to report pain experienced (Potter & Perry, 2011). Meanwhile, at the age of older adults (> 60 years) tend to bury the pain, because they may think pain is an expected part of aging (Kumagai, 2013).   On this research, the majority of patients that had fracture was midle age (31-60). This means that most patients fracture, is the productive age category, where the patient is still actively working, where mobility is very high. this is according to basic health research of Indonesia (2007), which states that fractures that occur due to an accident, whether work accidents or traffic accidents. other causes, probably because at the middle age, bone density has been pretty much reduced. It is appropriate with the research by Jhonell & Kanis, (2006) stated that osteoporosis is another cause of fracture, recorded in the year 2000 there were an estimated 9.0 million osteoporosis fractures

Patients in this study as a whole were 62, composed of 42 male patients (68%) with (mean: 1.3, 95%CI: 1.2-1.4) and 20 female patients (32%) with (mean: 1.3, 95% CI: 1.2-1.4). The number of respondents male more than female respondents because the

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incidence of traffic accidents and work accidents occurs more frequently in men than in women. This is according to a survey conducted research agency of the State (RISKESDAS) who conducted the research in 2007, states that the incidence of fractures in Indonesia as a result of traffic accidents, blunt trauma or a fall is more in male patients (Riskesdas, 2007). In this study showed that the majority patients with postoperative ORIF respondents in Hospital of Surakarta were male.

Based on the tabel 1, the most of patients was the patients who do not have a history of previous surgery 75.8% and patients who have history of previous surgery were 24.2%. however the result showed that all patients have almost the same range, both pain and anxiety. This is contra with the statement by Marmo & D'Archy (2013), They stated that the person who had previous pain due to surgery or any other kind, then the memory of painful experience related to pain can increase sensitivity to pain later. The same thing was also presented by Smeltzer, Bare & Hinkle, (2010) stated that the more a person has the experience of pain, the less a person's ability to tolerate pain. But research by Novita (2012), obtain the result that previous pain experience has no effect on pain. It further explained that if the individual experiencing the same pain, but the pain was successfully removed then the client will be easier to interpret pain so it will be ready to take actions to eliminate the pain.

In this study, measurement of pain and anxiety using visual analog scale for pain (VAS) and the visual analog scale for anxiety (VASA). Each has the same range of 0-100, but has a different descriptive anchor. VAS and VASA selected to be used as a measurement scale because it has been proven valid and reliable to measure pain and anxiety. This measurement instrument must have a high sensitivity to changes in

pain, it is necessary to assess which are the most sensitive in detecting changes in pain. The same thing is also presented by valente (2011), states that "Perhaps the most important validity criterion for a pain measure is its ability to detect changes in pain with pain treatment or procedures known to produce pain" (Valente, 2011).

Based on the table 1, it can be concluded that the average level of pain post ortophedic surgery was mean 49 and for the anxiety scale was 47.8. It mean pain and anxiety scale after receiving ketorolac is still in the moderate level. This result was consistent with the previous study by Novita (2012), use Numerical Rating Scale to measure pain post ortopedhic surgery, the result was pain scale after receiving ketorolac is still in the moderate level. This situation can happend because ortopedhic surgery especialy ORIF surgery, this procedure is made incission, the bone is secured with pins, srews, nails, or plate (Kumagai, 2013). This procedures can increase the level of pain and pain can also increase the anxiety.

Another study states that 75% of Patients believe it is "necessary" to feel pain following surgery (Apfelbaum, 2003). This is what makes the reason that all patients of the age range 18-60, male or female and patients that have and dont have experience of surgery complained of pain almost the same level. Anxiety was also a manifestation that has a relationship with pain, the higher the pain can lead to increased anxiety as well. Due to the level of pain in all respondents almost the same, then the anxiety level also has a range that is nearly same, both young adulthood or middle age. this is evidenced by the result of this research, that the patients had pain and anxiety almost on the same range.

This evidenced by VAS pain scale was (mean 49, 95% CI: 47.1-48) and VAS anxiety scale after surgery was (mean: 47.8, 95%CI: 47.1-48.5). From this

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value can be seen that, can be trusted 95% that the mean value is in the range 47-48. It means that the range of values of pain in this study do not differ too much. as well as the patient's anxiety level, have almost the same range.

Other factors affecting the similarity of this range, probably due to the measurements performed in all patients after 6 hours of administration of analgesics,, because the onset and duration of analgesia is 4-6 hours. In this study also determined only patients with lower extremity fractures and underwent ORIF surgery and received injection of analgesic is selected to be sample.

Conclusiom

The conclusion is majority of patients who undergone surgery are middle age. The average pain and anxiety scale below 50 (below moderate) means that the patient still feels pain but still on tolerable pain.

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