ORIGINAL ARTICLE

The Impact of a Patient Education Package on Outcomes of Pain Management Following Orthopaedic Surgery in a Tertiary Hospital in Malaysia

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ABSTRAK

Kepercayaan pesakit terhadap pengurusan kesakitan boleh menjejaskan hasil pengurusan kesakitan dan kualiti hidup. Tujuan kajian ini dijalankan adalah untuk menentukan kesan pakej pendidikan pra-operasi sakit ke arah kepercayaan kesakitan dalam kalangan pesakit-pesakit yang menjalani pembedahan ortopedik di hospital tertiari. Reka bentuk kajian 'pre-test pos-test' satu-kumpulan dijalankan pada pesakit-pesakit untuk menentukan impak pakej pendidikan tentang kesakitan terhadap skor 'post-test' kepercayaan tentang kesakitan dalam kalangan pesakit yang menjalani pembedahan ortopedik. Tiga puluh responden telah diambil menggunakan 'convenience sampling'. Pendidikan tentang kesakitan sebelum pembedahan berkaitan dengan pengurusan kesakitan diberikan kepada respons. Skor kepercayaan pra-operasi dan pos-operasi sakit, pengurusan markah dan kesan-kesan sampingan telah diukur dengan menggunakan borang soal-selidik halangan (BQ-13). Keputusan melaporkan perbezaan yang signifikan antara skor 'pre-test' (Mean = 41.87, Standard Deviation = 11.467) dan 'post-test' (Mean = 34,80, Standard Deviation = 13.026) kepercayaan terhadap kesakitan (t = 2.84, p =0.004). Terdapat juga perbezaan yang signifikan antara skor 'pre-test' (Mean = 37.10, Standard Deviation = 10.610) dan skor 'post-test' (Mean = 30.80, Standard Deviation = 11.424), pengurusan kesakitan (t = 3.856, p =0.0005). Responden dan jantina (t =-2.403, p =0.023) dan bangsa (F = 5.038, p =0.014) melaporkan perbezaan yang signifikan iaitu p < 0.05. Bagaimanapun, tidak terdapat perbezaan yang signifikan antara tahap pendidikan, etnik, sejarah pembedahan terlebih dahulu

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dengan kepercayaan kesakitan dengan p > 0.05. Kesimpulannya, terdapat kesan positif daripada pakej pendidikan kesihatan berkenaan kepercayaan kesakitan dan pengurusan kesakitan responden yang telah menjalani pembedahan ortopedik di hospital tertiari. Pengukuhan program pendidikan kesakitan adalah penting untuk mencapai matlamat pengurusan kesakitan pos-operasi yang optimum.

Kata kunci: kesakitan, pendidikan, ortopedik, pesakit, pembedahan

ABSTRACT

Patient's belief towards pain management may affect pain management outcomes and quality of life. The main aim of the present study was to determine the impact of a pre-operative pain education package towards pain belief among patients undergoing orthopaedic surgery in a tertiary hospital. A one-group pre-test post-test design study was conducted on orthopaedic surgery patients. Thirty respondents were recruited and pre-operative pain education was administered individually before surgery. Pre-operative and post-operative pain belief, management scores and side effects were measured using the Barrier Questionnaire (BQ-13). The results reported significant differences between pre-test scores (Mean = 41.87, Standard Deviation = 11.467) and post-test scores (Mean=34.80, Standard Deviation=13.026) of pain belief (t = 2.84, p = 0.004). There were also significant differences between pre-test scores (Mean = 37.10, Standard Deviation = 10.610) and post-test scores (Mean=30.80, Standard Deviation = 11.424) of pain management (t = 3.856, p = 0.0005). Respondent's gender (t = -2.403, p = 0.023) and ethnicity (F = 5.038, p=0.014) reported significant differences with p value < 0.05, respectively. However, there were no significant differences between educational level, ethnicity, prior surgical history with pain belief (p> 0.05). There was positive impact of the pain education package towards pain belief and painmanagement among respondents who underwent orthopaedics surgery in a tertiary hospital. Reinforcement of pain educational program is pivotal in order to achieve optimal post-operative pain management.

Keywords: pain, education, orthopaedics, patient, surgery

INTRODUCTION

Pain is defined by the American Pain Society Quality of Care Committee, as an unpleasant sensory and emotional experience arising from actual or potential tissue damage or described in terms of such damage (Lin et al. 2005). Post-operative pain is the most regular and expected complication following orthopaedic surgery (Caumo et al. 2001). Acute pain is associated with post-operative surgery; different patients even though undergoing the same incision, may perceive pain differently (Polomano et al. 2008). Nurses play an important role and responsibility in ensuring adequate pain

assessment and management towards patients while being hospitalized. An adequate knowledge, beliefs and attitudes by nurses could alleviate their misconception of pain assessment and pain management (Dihle et al. 2006).

In Universiti Kebangsaan Malaysia Medical Centre (UKMMC), researchers found that many patients would rather tolerate their pain then to report to nurse for their analgesic administration. They perceived that analgesic agents should only be taken when necessary. Hence, most patients deemed to withstand their pain, resulted in poor recovery, increased length of stay, increased cost incurred and immobilization during hospitalization (Ho et al. 2013). According McCaffery and Ferrell (1997), pain is a complex physiological and psychological phenomenon which is very subjective in nature. Inadequate information leads to patients' misconception and reluctance to report pain and should be overcome to ensure an effective pain management.

A typical belief among patients is that their desire to be "good" patients and fear of addiction with opioids could be the contributing factors to poor pain management. They are reluctant to report their pain to the physicians and nurses. A previous study reported the patient's belief that pain builds character as they view pain as having moral value and may lose their face values (Ho et al. 2009). Patient's ignorance and lack of proper knowledge related to pain management may further increase barrier to obtain and optimize pain control (Ortiz et al. 2015).

Post-operative pain after orthopaedic surgery can be devastating. Hence, proper pain management education package is expected to enhance optimum delivery of care in order to achieve adequate patient's satisfaction and comfort. The aim of the present study was to examine the impact of an education pain package and to measure to what extent it has on pre-education and post-education of orthopaedic patients' belief towards pain management.

MATERIALS AND METHODS

DESIGN

This study was conducted in the Orthopaedic Surgery Wards which comprise the male Orthopaedic Ward, the female Orthopaedic Ward, Spinal Ward and Trauma Ward of UKMMC. UKMMC is a tertiary hospital which receives both emergency and referred cases. A pre-test-post-test study design was done to examine the impact of the pain education on the outcome of patients undergoing orthopaedic surgery in a tertiary hospital.

PARTICIPANTS

The recruitment of respondents in this study began when the patient was admitted to the Orthopaedic Ward for an elective orthopaedic surgery. The respondents were selected through convenience sampling. The purpose of this study was delineated by the researchers verbally to the respondents and a written consent was acquired. Prior to the routine pre-operative teaching by the ward nurse, the respondents were asked to

answer the Barrier Questionaire-13 (BQ-13) as a pre-test to get a baseline data of their belief about pain and pain management.

PRE-OPERATIVE EDUCATION INTERVENTION

The researchers provided pain education package with routine information to the patients. Other healthcare professionals also gave intermittent usual routine care and information in terms of their surgery and anaesthesia, wound care, physiotherapy, routine hemodynamic observations and pain management. After the pre-test, all of the participants were administered a self-devised Pain Education Package which included the following: definition of pain, basic pathophysiology of pain and its effects on pain, general understanding about pain, management, medications and side effects and non pharmacological management of pain. The investigators administered the pain education package verbally with the aid of a flip chart. Estimated time of presentation was at least 15 minutes. A shorter education time was preferred to make sure that the participant was focused during the verbal administration

DATA COLLECTION AND INSTRUMENTS

The research instrument consisted of socio-demographic data and a modified BQ-13 which was adapted from Boyd-Seale et al. (2010) with permission. A set of BQ-13 was used to assess the patient's pain belief, pain management and side effects of medication. Each item was measured with a 6 point Likert scale, with 0 being 'Do not agree at all' and 5 being 'Agree very much'. Post-test BQ-13 was administered on 3rd post-operation day.

ETHICAL APPROVAL

The research was approved by the Ethics Committee of Universiti Kebangsaan Malaysia Medical Centre (UKMMC) (Code No.FF-2014-185). Permission was granted by the Dean cum Director of Universiti Kebangsaan Malaysia Medical Centre. Written informed consent was obtained from the respective respondents. The privacy and confidentiality of each individual' information was maintained and the subject were given the right to withdraw from participation.

DATA ANALSYIS TECHNIQUES

Data analysis for this study was done using SPSS version 21. The relationship between sociodemographic variables with the BQ-13of orthopaedic surgery patients were analyzed by inferential statistic analysis using student t-test and Analysis of Variance (ANOVA).

RESULTS

The sociodemographic data consisted of gender, ethnicity, education level and history of prior surgery. There were equal amount of respondents for each gender, 15 male respondents (50%) and 15 female respondents (50%). Majority of the respondents were Malays 21 (70%), Chinese 7(23.3%) and Indians 2(6.7%). Regarding the educational level of the respondents, 6 had primary level (20%), 13 had secondary level (43.3%) while 11 had tertiary (36.7%).

Table 1: Respondents' age, gender, ethnicity, religion, educational level, and history of prior surgery.

Demographic data	Frequency	Percentage
Gender		
Male	15	50%
Female	15	50%
Ethnicity		
Malay	21	70%
Chinese	7	23.3%
Indian	2	6.7%
Educational level		
Primary	6	20%
Secondary	13	43.3%
College	11	36.7%
History of prior surgery		
Yes	17	56.7%
No	13	43.3%

Table 2: Respondents' pre-test and post-test scores in pain beliefs, management and side effect of pain medication.

	Mean ± SD	t	p
Pre-test scores of pain belief	41.87±11.467	2.480	0.004*
Post-test scores of pain belief	34.80±13.026		
Pre-test scores for pain management	27.47±6.857	3.575	0.001*
Post-test scores for pain management	22.03±8.393		
Pre-test scores for side effect of pain medication	14.47 ± 6.806	1.257	0.219
Post-test scores for side effect of pain medication	12.77 ± 6.339		

Seventeen respondents had history of prior surgery (56.7%) while 13 respondents (43.3%) did not have it (Table 1).

Table 2 reported apaired samples t-test used to comparethe Barrier Questionnaire-13 of the pre-test (Mean = 41.87, standard deviaton = 11.467) and post-test (Mean = 34.80, Standard Deviation = 13.026). There was a reduction of mean score of pain belief of 7.07. This was statistically significant (t = 2.84, p = 0.004). The pre-test of pain management (Mean = 27.47, Standard Deviation = 6.857) and post-intervention scores (Mean = 22.03, Standard Deviation = 8.393) was statistically significant (t (9) = 3.58, p = 0.001). Pre-test and post-test of side effects of pain medication reported a mean score and standard deviation of (Mean = 14.47, Standard Deviation = 6.806) and (Mean = 12.77, Standard Deviation = 6.339) respectively. However, this difference was statistically insignificant, t (29) = 1.257, p = 0.219.

Table 3: Association between respondents' pain belief with gender and prior surgical history

	Mean ± SD	t	p
Gender			
Male	37.13 ± 9.790	-2.403	0.023*
Female	46.47 ± 11.420		
With prior surgical history	39.82 ± 12.880	-1.082	0.289
Without prior surgery	44.38 ± 9.188		

Table 4: Association between respondents' pain belief with ethnicity and educational level

	Mean ± SD	f	p
Ethnicity			
Malay	41.62 ± 11.320		
Chinese	45.14 ± 12.375	0.881	0.426
Indian	33.00 ± 9.988		
Education level			
Primary	38.00 ± 19.261		
Secondary	42.21 ± 8.040	1.057	0.361
Tertiary	45.73 ± 11.010		

There were statistically significant differences between gender with BQ-13 where the male respondents (Mean = 37.13, Standard Deviation = 9.790) scored higher than female (Mean = 46.47, Standard Deviation = 11.420); (t = -2.403, p = 0.023). There was no significant difference in terms of history of prior surgery (p=0.289) as shown in Table 3. In Table 4, there were no significant differences between respondent's pain belief with ethnicity and education level respectively (p=0.426 and p= 0.361).

DISCUSSION

Pain is a complex physiological and psychological phenomenon which is very subjective in nature (McCaffery & Ferrell 1997). Inadequate information leads to patients' misconception and reluctance to report pain and should be overcome to ensure an effective pain management. A typical belief among patient is their desire to be a "good" patient and fear of addiction with opioids could be the contributing factors. In Malaysia, the pain management barriers are caused by the physicians' and patients' attitudes towards the use of opioids (Lim 2008). Patients possess many different perceptions related to pain and its management. Failure of healthcare providers to assess and document pain has been one of the major barriers for an effective pain control.

The findings from this study indicated reduction between pre-

test and post-test scores of pain belief and management among patients undergoing orthopaedic surgery. Conclusively, the decrease in the pain belief and management scores were statistically significant which implicate the effectiveness ofpain education package in this study. In a previous study by Taylor & Stanbury (2009), it was shown that pain information provided by health care providers would enhance patients and family members of their awareness towards pain management. The provision of information and appropriate education tailored to the patients' needs and level of understanding would further compliment in reducing patient anxiety and avoiding unrealistic expectations related to the pain relief (Al Samaraee et al. 2010).

There were no significant differences between the pre-test and post-test scores for side effects of pain medication. They are reluctant to report their pain to physicians and nurses. According to Ho et al. (2009) patients believe that pain builds character as they view pain as having moral value and may lose their face values. Patient's ignorance and lack of proper knowledge related to pain management will further increase barrier to obtain optimal pain control. They would rather withstand the pain than to get the pain relieved. Patients dread the side effects of the opioid analgesics, and this may be supplemented by the bad attitude of the nurses in administering opioid analgesics to patients (McCaffrey & Ferrell 1997; Taylor, & Stanbury 2009). Another study reported a high proportion of patients who believed that usage of analgesics may cause addiction to pain medication easily (Bozimowski 2012). The information regarding analgesic in pain management is important in pain relief towards pain belief after six hour surgery (Brown et al. 2013). This showed that effective information delivered may give positive improvement in patient's pain belief towards pain management.

Female patients scored higher for pain belief compared to males. This was probably because women were more open to pain and were willing to share with others regarding their pain compared to males who are more reserved and would not divulge their problem for fear of losing face (Patel et al. 2014). Also, there was no significant difference in terms of prior surgical history although those without prior surgical history scored higher in terms of pain belief. This could be due to those who did not experience surgery beforehand, and had higher acceptance of analgesics compared to those who had experienced surgery and who may have a higher threshold of pain.

There were no significant differences in pain belief between ethnicities although Chinese scored the highest while Indians were the lowest. This could be due to Indians having lower threshold of pain though this is not proven as yet.In contrast, Kapoor and Thorn (2014) showed that ethnicity did not influence the healthcare use or prescription of opioids. In terms of education, tertiary education had the highest score with the lowest being primary. This is expected as the higher the education level, the better the understanding of pain relief

management. According to Costello and Thompson (2014), knowledge gap and nurses' lack of sufficient information about opioids may affect their ability to provide effective medication instructions to their patients

CONCLUSION

In conclusion, there was a positive impact of the pain education package towards pain belief, management and side effect of medications. Reinforcement of pain educational program is pivotal in order to achieve optimal post-operative pain management. Patients will achieve better comfort, faster mobilisation and reduced length of stay. This may be cost effective and time saving for both patients and the organisation.

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