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ORIGINAL ARTICLE

Effectiveness of Art Therapy on Pain Perception among Post-Operative Patients in Orthopedic wards of Selected Hospitals, UAE

PRIYALATHA MUTHU[1], FATIMA MUSABEH KHALIFA ALGHAFLI[2]
[1]Adult health nursing department, Ras Al Khaimah College of Nursing, Ras Al Khaimah Medical and Health Sciences University, Ras Al Khaimah, United Arab Emirates)
[2]Clinical risk manager, Abdullah Bin Omran Hospital, RAK - UAE)
Correspondence to: Priyalatha Muthu

ABSTRACT

Art therapy the essence of psychotherapy enables to reduce patient's suffering from pain sensation by focusing the way the patient perceives the current situation; pain relieved as well along the way. The aim of the study was to assess the effectiveness of art therapy on pain perception among postoperative orthopedic patients and to find association between pain perception scores of postoperative patient with their selected demographic and clinical variables.Pre-experimental research design among 50 orthopedic post-operative selected using consecutive sampling technique. Demographic data, clinical data and pain scores assessed using numeric pain scale before and after the art therapy for three consecutive days. Majority (70%) of the participants were males. About 62% were married and 42% had primary level of education. Majority (32%) had road traffic accident and 28% meet with work site injuries. On day-1 pre-art most of the patients (52%) experienced moderate to severe pain (28%), on day-2 and day-3, they experienced mild (44%) to moderate (42%) level of pain. After an hour of the art therapy, pain assessment on day-1, the patients had mild (38%) to moderate (34%), while on day-2, majority (72%) experienced mild pain and 26% had moderate pain. On day-3, the pain was verbalized to be with mild (78%) to moderate (22%). Art therapy was effective in reducing pain (p=0.000) Variables like age, gender, educational level and nationality were noted to be significantly associated with the pain scores along with diabetes, hypertension, and type of injury. Art therapy is beneficial hence be utilized effectively by nurses to help alleviate pain among post- operative orthopedic patients.

INTRODUCTION

Every individual's pain is seen as a unique and complex event experience. The most common complaint among postoperative orthopaedic patients is pain at the operated location followed by muscle spasm. Apart from using the pharmacological measures, the non-pharmacological treatment are also found to be beneficial.

Art therapy is a relatively recent notion among non-pharmacological methods. It's a treatment method that's utilised in a series of sessions to help people feel better. "improve cognitive and sensorimotor functions, foster self-esteem and self-awareness. It helps to cultivate emotional resilience, promote insight, enhance social skills, reduce and resolve conflicts or distress and advance societal and ecological change"[(1)]. Art therapy helps in exploration of feelings, boosts self-confidence, explore creativity and have a therapeutic effect on the person in a way that reduces anxiety level. Art therapy can help people communicate their emotions, and psychologists can understand what they see (2). Art therapy aims to improve a patient's physical, mental, and emotional well-being by utilising the expressive elements of art creating. The objectives of the study were to assess pain perception scores before and after art therapy , find association between pain perception scores of postoperative orthopedic patients with their selected demographic variables and with their selected clinical variables.

MATERIALS AND METHODS

Research Design: one group pretest-posttest pre-experimental design to compare pain perception of the respondent before and after the art therapy.

Setting: Saqr Hospital is UAE government-owned hospital, at Ras Al Khaimah.

Sample: Post- operative orthopedic patients fulfilling the inclusion criteria were selected for the study.

Sample Size: At the confidence level of 95%, confidence interval of ten, the calculated sample size was 50 using Rao software Inc.

Sampling Technique: consecutive sampling technique to select the patients

Inclusion Criteria

1 Only individuals taking paracetamol, COX2 inhibitors like Parecoxib and Celexocib, and NSAIDs were included to exclude confounding variables.

2 Patients who are able to communicate in English or Arabic

3 Patients who have had orthopaedic procedures such as Open reduction with internal fixation (ORIF), Interlocking Nailing (ILN), Kirschner's Wire (K-wire), Closed reduction, Arthroscopy, and tendon repair.

Exclusion Criteria

1 ICU admission for orthopaedic patients who are neurologically or hemodynamically unstable.

2 Patient has a fracture of the dominant hand's bones.

3 Orthopedic patients who are taking a variety of analgesics

Instrumentation: The tools used for the research study were Numerical Pain Scale - Pain scale categorized as: 0 - no pain, 1-3 scores: mild pain, 4-6 scores: moderate pain, 7-19 scores: severe, 10 score: worst pain. Oter data were collected using the demographic data performa and clinical data performa.

Procedure for Data Collection: The selected participants were explained about the purpose of the study and the informed consent form was given. The pain

numeric scale was used pre and post intervention along with the demographic and clinical data sheet to collect the data. The post -therapy pain perception score was assessed one hour after the art therapy on all the three consecutive days.

Interventional protocol:

1 Patients were given crayons, colour pencils, and sheets after being informed about the art therapy.

2 Patients were asked to draw whatever they wanted to reflect how they felt or thought at the time, using colours of their choice and discretion. They were given enough space to draw and were left alone.

3 Each session lasted 30 minutes every morning after 9 a.m., three hours after the pain medication was delivered. These seminars took place over the course of three days.

Ethical Approval: Obtained from RAKMHSU and from RAK Ethical Committee of Ras Al Khaimah, UAE.

RESULTS

Table 1: Distribution of participants based on demographic variable (n=50)

Variables		F	%
Age	18-24 years	8	16
	25 – 34 years	18	36
	35- 44 years	16	32
	45 – 54 years	4	8
	55 – 65 years	4	8
Educational Level	Primary Level	21	42
	Secondary Level	19	38
	Diploma Certificate	4	8
	College Level	4	8
	Bachelor's Degree Certificate	2	4
Marital Status	Single	12	24
	Married	31	62
	Widow	1	2
	Divorced	4	8
	Separated	2	4

Table 1: Shows that participants who belongs to the age range 25-34 years were 36% and 42 % of them completed primary level of education. Most of the participants (62%) were married

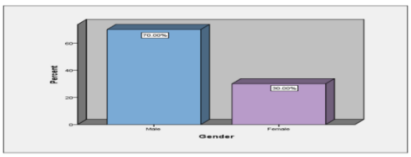

Figure 2: Distribution based on gender: majority (70%) of the participants are male with a highest post-operative orthopedic case compared to females that has 30 % representation.

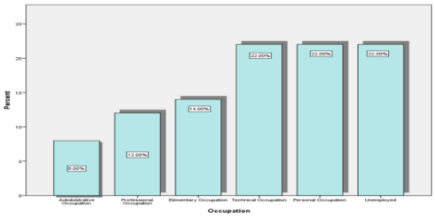

Figure 3: Distribution based on occupation: majority (66%) of the participants represented technical, business or unemployed individuals. About 34% represented administrative, professional and elementary in the field of occupation.

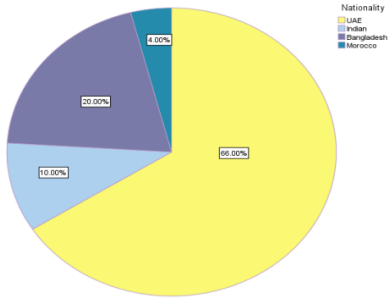

Figure 4: Distribution based on nationality: majority (66%) of the participants were UAE nationals and 34 % were Asian nationals; Indian, Bangladeshi and Moroccan.

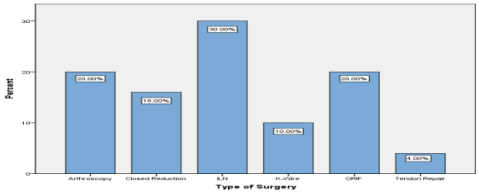

Figure 5: Distribution based on type of surgery: majority (30%) of patients' underwent type of surgery of Interlocking nailing (ILN), Open reduction and internal fixation (ORIF) 20% and arthroscopy has 20%, patient underwent closed reduction were 16%, Kirschner's wire (K-wire) 10% and tendon repair were 4%.

Table 4: Distribution according to pain relief measures utilized by the participants (n=50)

Pain relief measures used by participants	F	%
Watching Television	1	2.0
Reading book or magazines	1	2.0
Using Social Media	1	2.0
Deep breathing exercises	1	2.0
Watching Television & Listening to Music	4	8.0
Watching TV/Listening Music/Talking to Someone/Using Social Media	11	22.0
Watching TV/Listening to music/Talking to someone	5	10.0
Watching TV and Deep breathing exercises	2	4.0
Watching TV/Talking to someone/using social media/& yoga and meditation	5	10.0
watching TV and using social media	7	14.0
Listening to music/talking to someone and using social media	10	20.0
Talking to someone and Yoga and meditation	1	2.0
Reading Books/magazines and using social media	1	2.0
Total	50	100.0

Table 4: Shows that the 22% of participants were watching television, listening to music, talking to someone and using social media as a measure of distraction to pain. Majority of the participants used multiple measures for pain reliefs at home.

Table 5: Distribution of pain perception scores pre-art therapy from day 1 to day 3 (n=50)

Post-op Days	Mild pain (1-3 score)		Moderate pain (4-6 score)		Severe pain (7-9 score)		Mean	SD
	f	%	f	%	f	%		
1	10	20	26	52	14	28	5.22	1.632
2	22	44	21	42	7	14	4.26	1.562
3	19	38	25	50	6	12	4.34	1.437

Table 5: Shows the accumulated pain perception scores of the participants' pre - art therapy sessions that correspond to the post-operative days. Comparing the three mean there is a reduction in the pain perception scores from day 1 to day 3 before the part therapy, while the day -1 mean is higher than day 2 and 3.

Table 6: Distribution of pain perception scores post-art therapy from day 1 to day 3 (n=50)

Post-op Days	Mild pain (1-3 score)		Moderate pain (4-6 score)		Severe pain (7-9 score)			
	f	%	f	%	f	%	Mean	SD
1	19	38	17	34	14	28	4.70	2.196
2	36	72	13	26	1	2.0	2.640	1.425
3	39	78	11	22	0	0	2.720	1.498

Tables 7: Effectiveness of Art Therapy (n=50)

Post-op Day	Pain score Mean before Art Therapy	Pain score Mean after Art Therapy	Standard Deviation	Std. Error Mean	t-value	df	Sig. (2-tailed)
1	5.220	4.700	2.196	.310	15.127	49	.000*
2	4.260	2.640	1.425	.201	13.099	49	.000*
3	4.340	2.720	1.498	.211	12.832	49	.000*

*Significant difference at p< 0.05 levels

Table 8: Association between pain perception score and selected demographic variables

Demographic Variables		Chi-Square	df	p-value
Age (in years)	18-24 25-34 35-44 45-54 55-65	17.600	4	.001*
Gender	Male Female	8.000	1	.005*
Educational Level	Primary Level Secondary Level Diploma Certificate College Level Bachelor Degree's	33.800	4	.000*
Nationality	UAE India Bangladesh Morocco	47.440	3	.000*
Pain score day 1 post art therapy		19.120	7	.008*
Pain score day 2 post art therapy		72.080	6	.000*
Pain score day 3 post art therapy		10.600	4	.031*

*Significant difference at p< 0.05 levels

Table 6: Shows the accumulated pain perception scores of the participants' post- art therapy sessions that correspond to the post-operative days. Comparing the three means there is a reduction in the pain perception scores from day 1 to day 3.

Tables 7. Shows the mean of the pain perception scores of the patient during pre art therapy and post art therapy for three consecutive days. There is a significance (p = 0.000) reduction of the pain perception scores from pre art therapy to the post therapy session.

Table 8. shows an association between the pain perception score on post art therapy among patient with their selected demographic profile.

DISCUSSIONS

Due to the involvement of numerous tissues, patients who have undergone orthopaedic surgery should anticipate to experience more intense pain. When comparing orthopaedic patients to post-laparotomy patients, Ekstein,et.al., (2011) found that orthopaedic patients experienced severe post-operative pain on the self-rated pain visual analogue scale (VAS, 1-10)[3]. These patients required greater analgesia and other pain-relieving medications. The patients described the pain as stabbing and tiring-exhausting external discomfort at the surgery site. The patient's perceived nocturnal discomfort was significant, disrupting their sleep quality.[4] In the present study also, the patients experienced severe pain on day 1 and pain levels ranged from moderate to mild by day 3.

The pain perception mean scores after art therapy from the day one to three was noted to be reduced when compared to the pre- art therspy pain perception scores was statistically significant (p<0.001). Finding in a study done by Shella (2017) also demonstrated a significant improvement in pain after art therapy sessions among patients regardless of gender, age, or diagnosis (p<0.001) [5]. Another study conducted by Grossman (2016) among orthopaedic patients found that art therapy reduced pain on post-operative days 1, 2, and 3 with statistical significance (p 0.01). [6]

According to studies, pain in older adults induces more inflammation over time because they are more sensitive to pain, whereas inflammation in younger patients occurs more immediately, with a greater magnitude, and lasts longer (7). The patient's age, according to Ekstein et al. (2011), was a contributing factor in pain perception[3]. Similarly, in the present study, there was significant association between pain perception and age (p<0.001). Education status plays an important role in pain perception. This close association of education with pain is consistent was found in recent researches emphasizing the importance of neurological factors in the perception of pain. (Atlas, 2009) [8]. In the present study, it was noted that there is significant association between education status (p< 0.005).

According to a study by Marchand (2012), women report more pain than men (9). Women had a lower pain threshold and tolerance to experimental pain, including mechanical, thermal, and electrical stimuli, according to the author. In other words, women are more sensitive to painful stimuli than men. Nascimento (2020) found that gender was a factor in pain perception differences, with males having higher thresholds and pain tolerance, as well as a reduced inclination to report discomfort (10). In this study finding, majority (70%) of the participants were males and

the pain perception score are also noted lower than females. This study findings illicit that art therapy can be used effectively irrespective of the demographic variables like age, gender, nationality, educational status, occupation or marital status among patients

There was an association noted between pain perception scores with diabetes status can be attributed tot the findings as reported by Gylfadottir (2019) where diabetic patients had diabetic neuropathy causing it to be either painful or non-painful[11] .

The other variables found to have significant association with pain perception were the hypertension and type of injury. Hypertension was more common in those whose pain began after surgery, according to Giummarra et al. (2020), with a 10% higher adjusted odds compared to people whose pain began after injury(12). When other demographic, clinical, and pain-related characteristics were taken into account, the association between widespread pain and hypertension was no longer significant, with 23 percent higher odds in people with 3–6 sites of pain and 48 percent higher odds in those with seven or more sites of pain.

Because the significance of many sorts of injuries is well understood, there is an expectation that the damage will be unpleasant. A broken bone, for example, necessitates medical attention, possibly even surgery. The fracture will require a time of healing, which will most likely include immobilisation. In order for the bone to mend, orthopaedic operations require insertion equipment such as pins or screws. The physical and mental agony caused by these severe post-operative experiences from the injury and recuperation can be excruciating.

These patients, according to Landers (2020), are unable to ambulate early and are confined to bed for a longer period of time, which exacerbates pain and misery not only physically but also psychologically (13). Hence this study findings elicit that art therapy can be used effectively irrespective of the clinical variables like diabetes status, hypertension, type of surgery or type of injury among post - operative orthopedic patients.

CONCLUSION

Postoperative pain management is an integral part of nursing practice and thus, the findings of this study emphasizes art therapy as an effective means of pain management technique among post- operative patients enabling nurses to adopt holistic approach to the postoperative care in order to improve the effectiveness of pain management.

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