Pharmacophore

ISSN-2229-5402

Journal home page: http://www.pharmacophorejournal.com

Pharmacophore
an International Journal
ISSN 2229-5402

IMPACT OF PROGRESSIVE MUSCLE RELAXATION TECHNIQUE ON APPARENT ANXIETY OF PATIENTS ELIGIBLE FOR ORTHOPEDIC SURGERY

Hanieh Dahmardeh[1], Farzaneh Barati[2*]

1. *MSN in nursing, Community nursing research center, Zahedan University of Medical Science, Zahedan, Iran*
2. *Ph.D student in nursing, medical surgical department, Golestan University of medical sciences. Gorgan, Irann*

ARTICLE INFO

Received:
03th Jun 2017
Accepted:
29th Nov 2017
Available online:
14th Dec 2017

Keywords: *Workplace spirituality, OCB, organizational commitment*

ABSTRACT

Background and objective: the most common effects of the traumas of incoming to humans are extremities fractures. Patients suffering from fracture require orthopedic cares including orthopedic surgeries; the surgical process causes to increase the incidence of physiological and psychological responses such as anxiety. So applying the progressive muscle relaxation techniques is important for these patients.
Materials and methods: in the present clinical trial study, 80 patients with fracture of lower limbs being eligible for orthopedic surgery were randomly selected by convenient method and randomly were appointed in two control and intervention groups of 40 people. Relaxation technique was done by test group samples before doing the surgery 3 times per day and every shift 10 to 20 times. Before and by discharging patient, the patients' anxiety was measured by means of the patients' anxiety questionnaire of Spielberger (STAI). The data were analyzed using statistical independent t-test, paired t-test and Chi square under SPSS 16 software.
Findings: by employing relaxation, the average score for the apparent anxiety before the intervention the intervention group was 47/9±0/7 and 46/4±64/49 in the control group (p = 0/38) and after the intervention it amounts to 48.70±6.59 in the intervention group and 46.4±66.02 in the control group (p = 0.008).
Conclusion: according to the findings, the implementation of progressive muscle relaxation technique can reduce the patients' anxiety eligible for orthopedic surgery. Due to the limitations of the present study, conducting more researches is recommended in this regard.

Copyright © 2013 - All Rights Reserved - Pharmacophore

To Cite This Article: Hanieh Dahmardeh, Farzaneh Barati, (2017)," impact of progressive muscle relaxation technique on apparent anxiety of patients eligible for orthopedic surgery" ***Pharmacophore, 8(6S),*** *e-1173618.*

Introduction

The most common effects of the traumas of incoming to humans are extremities fractures and most of facilities of medical centers and relief forces and physicians will be exhausted by it (1). Studies show that about half of the injured were those with severe traumas suffering from fracture of the extremities and the men exposed mostly to this type of damages (2 and 3); nowadays it has been known as one of the most important health problems around the world and is defined as diagnosing radiologically a crack in a connection (4). It is the fracture caused by strokes on bone which disturb the continuity of the bony blade (5). On the other hand, fractures are common damage in all age, social and sexual groups and may cause permanent disability of a wide range of victims (6)

Examinations in the United States have shown that 20 percent of the deaths during the year have been caused by fractures (7). Unfortunately, about the prevalence of fractures in Iran we have not any exact statistics in available (8). Patients suffering from fractures need to orthopedic care, including orthopedic surgery. Among the different kinds of surgery, this is considered the most painful surgery. Generally, after surgical procedures, one of the most important complaints of patients is pain (9 and 10) and it accompanies almost with all surgeries (11). On the other hand, the process of surgery is a diagnostic and therapeutic process in diseases which increase the incidence of different physiological and mental reactions in patient; in the meantime, the anxiety is regarded as one of the most important effects of surgery (12-13).

Anxiety caused by surgery in these patients will follow some effects including: increase in the secretion of hormones, incidence of dysrhythmic, malnutrition, lack of water and electrolyte balance, increased risk of infection, increased blood pressure, reducing the speed of wound healing and suspending surgery; all of these can direct affect the outcomes of the surgery, namely recovery period, amount of bleeding and taking anesthesia drugs as well as the postoperative pain. Hence we can conclude that anxiety will have a direct impact on the pain after surgery in these patients (14 and 15).

Corresponding Author: Farzaneh Barati, Ph.D student in nursing, medical surgical department, Golestan University of medical sciences. Gorgan, Iran

One of the purposes of medical treatments is relief and controlling the pain. During centuries the physicians have benefited from the sedatives to reduce the acute pains (16); but these medications have had the effects such as respiratory depression, nausea, vomiting, constipation, convulsions and possibly addiction that have caused to reduce their use (18 and 17). So it appears that we should reduce the extent of the use of narcotic pain medication or use other effective methods for controlling and reducing the pain (16 and 19).

On the other hand, as mentioned, the pain and anxiety have a direct impact on each other (15-14) and we can say that with controlling one we can affect other. So we can benefit from non-medicinal methods and techniques to control the anxiety (43). One of these suggested methods to reduce the anxiety of patients is the progressive muscle relaxation method (21-20). It is a non-pharmaceutical intervention to reduce the treatment of stress, anxiety, nausea, vomiting and pain (2 2 and 23) and its purpose is to create awareness of stress and muscle relaxation and teaching a way through which the muscles can be relaxed (24); it can be used alone or as part of the therapeutic programs. Its characteristics include: lack of mobility of the body, exercising control on the spotlight, low consistency of muscles, growing certain framework of the mind that can be described as reflective non-judgmental and mindfulness (25). As noted, the progressive muscle relaxation is a non-invasive, low-cost method and without the side effects for the patient that can be performed independently by the patient himself (26 and 27) and after brief training (28); it includes exercises during which the individual tenses and then relaxes the selected muscle groups up to access to deep relaxation. This process causes to increase blood flow and improve blood performance of members and have the elimination of tension and muscle pull; this case is associated with decreased anxiety (29 and 30).

With regard to the contents mentioned and the importance of taking advantage of non-invasive methods, such as progressive muscular relaxation in controlling anxiety after surgical procedures, the aim of this study was to examine the effect of progressive muscle relaxation technique on the apparent anxiety of patients eligible for orthopedic surgery in Sistan and Balouchestan trauma center in 2017.

Materials and methods

The present study was carried out as a random controlled clinical trial. The research population was constituted by all patients with fracture of the lower extremity in 2016. According to previous studies, the sample size was estimated for each group as follows: X_2 =1.9, X_1 =2.64, $Z_{1-\beta}$ = 1.28, $Z_{1-\alpha}$ = 1.96, S2 = 1.14, S_1 = 0.827. In total 80 patients were studied by convenient method and with the use of the random numbers table were placed in two experimental and control groups. 3 members of the intervention group did not participate in training sessions and 3 persons of the control group did not refer for completing the follow-up questionnaire. Consequently, final analysis was done for 74 patients (37 people in each group).

The criteria for exclusion from study included: experience in relaxation technique or doing a particular exercise during the past six months, failing to complete the questionnaires and having no anxiety. On the other hand, the scores of each of the two scales of apparent and hidden anxiety can be placed in a range between 20 and 80; the people who have the score of anxiety of 75 to 65, are of severe anxiety and those who have the score higher than 76 are of very severe anxiety and thus are excluded from the study.

Criteria for inclusion in study include: not taking medication affecting the anxiety and the desire to participate in the intervention, diagnosing fracture by orthopedic specialist, confirming the need for orthopedic surgery by orthopedic specialist, the lack of use of muscle relaxant drugs, psychotropic and hypnotic, fracture in lower extremities and the least anxiety score 20.

The data collection tool was the questionnaire of individual profile and questionnaire of apparent anxiety of Spieberger (STAI). The questionnaire of Spielberger consists of 40 questions and is used for measuring anxiety level. The questionnaire has two parts, the first part is related to the study of the individual's anxiety modes (apparent anxiety) and includes (20) questions with scale of degree classification (not at all, to some extent, medium, very high); to each of the options were belonged the scores respectively (zero to three). At the end, total of positive and negative scores obtained was determined in one of three groups: mild anxiety (scores 0-21), medium anxiety (scores 21-40) and extreme anxiety (scores 41-60). After getting permission the researcher referred to Orthopedic Department of hospital Khatam al-Anbiya (PBUH) in Zahedan as the center of the events of Sistan and Baluchestan Province, and while introducing the purpose of research selected the patients eligible for surgery who have inclusion criteria, explained the importance of research for patients and after acquiring informed consent asked them to complete the personal details questionnaire and the anxiety questionnaire of Spielberger. Then on the first day, after becoming stable and with confirmation of the orthopedic specialist the progressive muscle relaxation technique was taught to the intervention group patients. For this purpose, an educational program will be planned and conducted in 7 steps for patients; the steps of this planning are: introducing the muscles and muscle groups, teaching in the field of the implementation stages of progressive muscle relaxation technique using practical explanation and demonstration by the researcher, answering the questions of juvenile delinquents on relaxation technique, performing technique by the researcher using the audio tape, implementing technique by patients along with the researcher, expressing differences in the physical and mental feelings of samples after doing relaxation and finally doing the technique by samples and under the supervision of the researcher.

Then this technique was applied by samples of intervention group, after surgery, daily and every day 3 times, and each turn 10 to 20 times until discharging and the questionnaire was completed again. It must be noted that in the case of the control group no intervention was done and the mentioned questionnaires were given to patients; they received only the narcotic routine drug of department.

Findings

By employing the relaxation, the average score of obvious anxiety before the intervention was 47.9±0.7 in the intervention group and 46.4±64.49 in the control group (p = 0.38) and after the intervention, it amounted to 48.6±70.59 in the intervention group and 46.4±66.02 in the control group.

Age	34/51 ± 10/19

Gender	Woman	31 (41/3)
	Man	43 (57/3)
	Total	74 (98/7)

Group	Before intervention	After intervention
Intervention group	47/0±9/7	48/70±6/59
Control group	46/64±4/49	46/66±4/02
P	0/38	0/008

Anxiety	Before intervention	after intervention	P value
Total score of apparent anxiety	5/70 ± 46/90	5/53 ± 47/69	0/365

Discussion

Patients suffering from fracture experience normally a domain of symptoms that includes anxiety. Relaxation reduces muscle tension and decreases anxiety and creates a balance between posterior and anterior hypothalamus and as a result prevents the effects of tension. The findings of the present study showed that the application of the method of relaxation causes to reduce apparent anxiety of patients with fracture being eligible for Orthopedic surgery. Aqebati et al also showed that relaxation has caused to reduce anxiety and stress in cancer patients (31). Difference of the present study with that of Aqebati is that they investigated the patients with a chronic disease like cancer, while the present study has dealt with the patients who have experienced an acute situation and severe pain.

Hamidi Zadeh et al also obtained some results similar to the present study and showed the impact of the relaxation technique on the anxiety and anxiety stress of elderly people with high blood pressure (32). Ghobadi et al also obtained similar results of the present study and showed that the progressive muscle relaxation technique has a positive impact on anxiety and depression of hemodialysis patients (33)

On the other hand, the results of a study of Asvadi Kermani et al in which the impact of progressive muscle relaxation technique training on anxiety, depression and quality of life of cancer patients undergoing chemotherapy in Oncology and Hematology Center of Tabriz was examined did not show a significant difference between the two groups; it is not consistent with the results of present study (34)

According to the results of the present study, paying attention to this aspect of the apparent anxiety of patients is important; it can be said that with regard to the high rate of prevalence of the anxiety among the patients suffering from fracture, the use of non-pharmaceutical methods such as relaxation technique makes possible the more access for this group of patients to control apparent anxiety and create an environment with less tension for them.

Conclusion

According to the results of this study it seems that implementing progressive muscle relaxation technique can positive affect the patients' anxiety. Therefore, given that the progressive muscle relaxation technique is a non-invasive and low cost intervention, it can be in line with the educational role of nurses.

Authors' contribution

Hanieh Dahmardeh: design and implementation, extraction of results of the research and compilation of article

Appreciation

We express our gratitude to all involved patients without whose cooperation and assistance was not possible doing this research.

References

1. Krug EG, Sharma GK, Lozano R. The global burden of injuries. American journal of public health. 2000;90(4):523.
2. Sanchez-Tocino J, Turegano-Fuentes F, Perez-Diaz D, Sanz-Sánchez M, Lago-Oliver J, Zorrilla-Ortúzar J, et al. [Severe pelvic fractures, associated injuries and hemodynamic instability: incidence, management and outcome in our center]. Cirugia espanola. 2007;81(6):316-23.
3. Feehan LM, Sheps SB. Incidence and demographics of hand fractures in British Columbia, Canada: a population-based study. The Journal of hand surgery. 2006;31(7):1068. e1-. e9.
4. Elmstahl S, Gullberg B, Janzon L, Johnell O, Elmstahl B. Increased incidence of fractures in middle-aged and elderly men with low intake of phosphorus and zinc. Osteoporos Int 1998;8:333-340
5. Adams John, Adams' principles of nursing, 2001, translated by Asadi M., Rayisi M. First ed., Publication Tabib, Tehran, 2002, p. 21-25.
6. Griffin XL, Smith N, Parsons N, Costa ML. Ultrasound and shockwave therapy for acute fractures in adults. Cochrane database of systematic reviews (Online). 2012;2:CD008579.
7. Mahdavi Rowshan M. et al. nutritional condition and serum concentration in people suffering from bone fracture, medical Journal of Tabriz University of medical sciences, Volume 30, No. 3, 2006, p. 131-136
8. Melton LJ. The prevalence of osteoporosis [Editorial]. Bone Min Res 1991:12:1769-1998

9. Buyukyilmaz FE, Asti T. Postoperative pain characteristics in Turkish orthopedic patients. Pain Manag Nurs. 2010;11(2):76-84.
10. Ko YL, Lin PC. The effect of using a relaxation tape on pulse, respiration, blood pressure and anxiety levels of surgical patients. J Clin Nurs. 2012;21(5 6):689-97.
11. Hamdy RC. The decade of pain control and research. South Med J 2001;94(8):753-4
12. Mattew M, Benedetto C, Rosenberg R, Soufer R. Pre surgical Depression predicts medical morbidity 6 month After coronary Artery Bypass Graft surgery. Psychosomatic Medicine. 2003; 65:111-118.
13. Gamchirs A. Medical and surgical nursing: a core text. Edinburgh: Churchill Livingston Co; 2000.
14. Kabka A. Anxiety And Surgery [serial online]. 2002, Available from: URL: http://www. Weslwyan.Edu/Synthesis.Com
15. Lavernia J, Carlo SC. Feer and Anxiety Strong Respons for Delaying Surgery. Jour todays News. 2003; 54: 233-44.
16. Copples S, A. Pain as hatful experience: a philasophical and diagnosis and implications for holistic nursing care. Nurs forum 1992;27(1):5-10
17. Pouresmail V. & Rahnama M. & Haj Nasrullah A., impact of exercise training before surgery on the pain after surgery Cholecystectomy, Quarterly of Pazhouhandeh, 1998, year IV, No. 3, 295-292
18. Jacox A. managing acute pain. Am J Nurs 1992;22(5):49-55
19. Bolander V.B. Sornoson and luckman's basic nursing. A psychophysiologic approach. 3 red edition. Philadelphia: w.b. saunders co 1994.P.985
20. Admi H. Nursing student's stress during the initial clinical experience. J Nurs Educt. 1997 Sep; 36(7): 323–7.
21. Mailloux CG. The extent to which students' perceptions of faculties' teaching strategies,students' context, and perceptions of learner empowerment predict perceptions of autonomy in BSN students. Nurse Educ Today. 2006 Oct; 26(7): 578-85.
22. Kiani G. The effect of applying progressive muscle relaxation on the stress and hemodynamic parameters in patients with myocardial infarction. [Dissertation]. Tehran: Tarbiat Modares University; 2002.
23. Gafari S, Ahmadi F, Nabavi M, Memarian R. The effect of progressive muscle relaxation technique on depression, anxiety and stress patients with multiple scelerosis. J Research Medi. 2008; 32: 45-53.
24. Seyyed Gorgany N. Overcomes your stress, before it overcome to you. Schtainmetz J (author). 1st edition. Tehran: Hezaran publications; 1997. [Persian]
25. Sadoc BJ, Sadoc VA. Abstract of psychology: behavior science and clinical psychology. Translated by rezaei F. 1 ed. Tehran: Argmand publication; 2009.
26. Hamid N. The Effect of Relaxation and Mental Imagery and Relaxation Therapy on Anxiety and Hopefulness in Women with Breast Cancer in Ahvaz. Asian J Med Pharm Res. 2012;2(1):10-5.
27. Alwan M, Zakaria A, AbdulRahim M, AbdulHamid N, Fuad M. Comparison between Two Relaxation Methods on Competitive State Anxiety Among College Soccer Teams During Pre-Competition Stage. International Journal of Advanced Sport Sciences Research. 2013;1(1):90-104.
28. Jorm AF, Morgan AJ, Hetrick SE. Relaxation for Depression. Cochrane Database Syst Rev 2008: CD007142.
29. Davis M. Tutorial Relaxation and Stress Reduction. Khajehmougahi N. Tehran: Tabib; 2005. 78-81.
30. Davis M, Eshelman ER, Mckay M. The Relaxation and Stress Reduction Workbook. London: New Harbinger Publication; 2000. 85-115.
31. Aqebati N. et al. impact of the relaxation on anxiety and anxiety stress of cancer patients admitted to the hospital, Journal of Faculty of nursing and midwifery, Iran University of medical sciences, volume 23, No. 65, September 2010, 15-22.
32. Hamidizade S, Ahmadi F, Asghari M. Evaluation the effect of the relaxation on the rate of anxiety and stress of the elders with hypertension. J Shahrekord Univ Med Sci 2006; 8(2):45-51
33. Ghobadi A. et al. Effect of progressive muscle relaxation technique on anxiety and depression in hemodialysis patients, Scientific & research Quarterly of clinical cares, second year. No. 4, 2014.
34. Dehdari. T, Hidarnia .A, Ramazankhani. A, Sadeghian. S, Ghofranipour. F, Babaei. GH Etemadi, S. Effect of muscular progressive relaxation training on anxiety and quality of life in anxious patients after coronary artery bypass surgery, Journal of Islamic Azad University, Volume 17, Number 4, 86, p 211 to 205.1786