ORIGINAL RESEARCH PAPER

Physiotherapy

EFFICACY OF AEROBIC EXERCISE AND JACOBSON'S RELAXATION TRAINING IN REDUCING MIGRAINE AMONG FEMALES

KEY WORDS: Migraine, Aerobic training, Jacobson's Relaxation.

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ABSTRACT

Introduction: Headache affects almost half of the adult population worldwide. Migraine is the second most frequent primary headache characterized by recurrent headaches that are moderate to severe. Often experienced along with emotional instability, depression, stress eating, extreme sensitivity to light or sound, sweating, temperature changes, tummy ache and diarrhoea.
Methods and materials: 20 females between 18 – 30 years with complains of migraine are included in the study. Women with cardiovascular problems, neurological deficits, history of severe injury and Pregnant women are excluded. Twenty females are divided in to two groups – one group received aerobic training and other Jacobson's relaxation training for 4 weeks. SF – 12 Questionnaire was used as outcome measure.
Results and conclusion: The group which followed Jacobson's relaxation training was found to be statistically significant when compared with the aerobic training and proved to be cost effective.

INTRODUCTION

Headache is among the most common reason for visits to primary care physicians and physical therapists among females. Headache affects almost half of the adult population worldwide. Different types of headache often co-exist such as cervicogenic headache, tension type headache and migraine.

MIGRAINE:

Migraine is the second most frequent primary headache characterized by recurrent headaches that are moderate to severe. With over 10% of people in the Indian population is affected. Migraine is a widespread disease leading to high healthcare costs and has a major impact on females life. Typically, headache affects one half of the head which are pulsating in nature and lasts for 2 to 72 hours. Associated symptoms may include nausea, vomiting and sensitivity of light, sound (or) smell. The pain generally made worse by physical activity. Migraines believed due to a mixture of environmental and genetic factors. Changing hormones levels may play an important role in migraine affects slightly more before puberty. The pathogenesis of headache is not yet unambiguously clear, several explanatory factors have been proposed including disorders in neural connections, soft tissues, bony structures and body positions. Females with migraine often receive medication as the first choice, supported by physiotherapy.

AEROBIC TRAINING:

Aerobic exercise (also known as cardio exercise) is physical exercise of low to high intensity that depends primarily on the aerobic energy. Aerobic literally means "relating to involving, or requiring free oxygen" and refers to use of oxygen to adequately meet energy demands during exercise via aerobic metabolism. Generally light to moderate intensity activities that are sufficiently supported by aerobic metabolism can be performed for extended periods of time. Examples for aerobics exercise are running, jogging, swimming, cycling and walking. Kenneth Cooper was first person to introduce the concept of aerobic exercise. In 1960, Cooper started research into preventive medicine. He became intrigued by the belief that exercise can preserve one's health. He sparked millions into becoming active and is now known as the "father of aerobics.

JACOBSONS RELAXATION TRAINING

It is a technique for learning to monitor the state of muscular tension. It was developed by American physician Edmund Jacobson in the early 1920s. This technique involves learning to monitor tension in each specific muscle group in the body by deliberately inducing tension in each group. This tension is then released, with attention paid to be contrast between tension and relaxation. With this simple knowledge, you can then induce physical muscular tension at the first sign of the tension that accompanies anxiety and with physical relaxation comes mental calmness.

More research is needed to determine which physical therapy approaches are effective for females with migraine. To provide best physical therapy treatment for women with migraine to reduce their intensity and frequency of headache as soon as possible. The present study finds out whether aerobic training or relaxation training is effective in females with migraine.

METHOD AND MATERIALS

20 females between the age group 18 – 30 years with complains of migraine (International headache criteria for migraine) which was clinically diagnosed by Physician and report at least three migraine day per month was included for the study. Women with cardiovascular problems, neurological deficits, history of severe injury and Pregnant women are excluded. SF – 12 Questionnaire was used as outcome measure.

PROCEDURE

Participants are recruited via information given by the physicians. Interested participants got brief explanation about the study protocol. After the return informed consent, a physiotherapist will make an appointment to conduct an endurance test to determine the optimal heart rate. Participants will be examined by a therapist to confirm the diagnosis of migraine and to check inclusion and exclusion criteria. Diagnosis of migraine is based on the International headache criteria for migraine. Instructions are given to follow the headache diary and the intensity of the headache is measured. Participants are randomized to either the aerobic training or the relaxation training group. Overall 20 participants are planned to be enrolled in the study. In that, 10 females are selected for aerobic training group and remaining 10 females selected for relaxation training group.

Participants who are enrolled in the exercise group will perform aerobic training thrice a week for 4 weeks. Each training session should be documented in the participant's headache training diary. Aerobic training consists of indoor cycling with warm up period of 10 min, a 30min exercise period and a 5 min cool down phase. Heart rate will be measured during exercise training.

Participants for the relaxation group will perform the relaxation training, thrice a day for 4 weeks. Relaxation training session should be documented in the participant's headache training diary. Relaxation training is based upon Jacobson's progressive muscle relaxation Participants will learn a long (about 30 min) version of relaxation training.Consistent participation in either exercise or relaxation is important to checked regularly

RESULT:

This study focused on comparing the two physical modalities such as aerobic training and Jacobson relaxation training in female subjects with migraine. Study reports that Jacobson relaxation

training is best treatment for migraine.
In the mean value of,
AEROBIC TRAINING [PRE-TEST] = 27, [POST TEST] = 28.9
JACOBSONS RELAXATION TRAINING [PRE TEST] = 27.1, [POST TEST] = 30

TABLE: I SF – 12 Questionnaire: Mean value

Group	Mean value of pre - test	Mean value of post test
Aerobic training	27	28.9
Jacobson's relaxation training	27.1	30

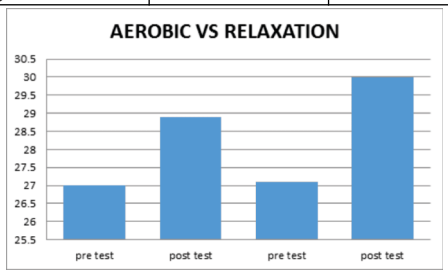

FIGURE: I Shows the mean value difference that present between aerobic training and relaxation training pre and post test

DISCUSSION:

Migraine is a primary headache disorder characterized by moderate to severe headache, nausea, extreme sensitivity to light and sound, intense unilateral throbbing or pulsing, is the second most frequent primary headache seen most commonly in female. This directly have an impact on their quality of life and leads to high health care cost.

At present, there is only scarce scientific evidence on the effectiveness of various therapeutic modalities in treating patients with migraine. So, we are in need to do more study to find out the efficacy of treating method which are cost effective. This study focused on comparing two physical therapy modalities such as aerobic training and Jacobson relaxation training to treat migraine.

Aerobic endurance training refers to ability of body to continuously transport oxygen throughout its various systems for extended period. By maintaining the flow of oxygen, an individual can exercise continuously for longer period without wearing down. Several studies reported that aerobic training reduces the indices of migraine

Jacobson relaxation training is also known as progressive relaxation therapy. Type of therapy focuses on tightening and relaxing of specific muscle group in sequence. Several studies reported that Jacobson relaxation training reduces the indices of migraine.

Some researchers believe that migraine pain caused by contractions of muscles of head and neck and the pain causes exacerbation of muscle tension in the area and the vicious cycle continues repeatedly. The relaxation training will break this vicious cycle. Relaxation helps by reducing the demand for tissue oxygenation, reduction of chemical substances such as lactic acid, reduction of skeletal muscle tension, stress and release endorphins. By this process relaxation training helps to reduce the intensity and frequency of migraine in females.

According to the study results the Jacobson's relaxation training seems to be superior to the Aerobic training. So the relaxation is the cost effective treatment modality which helps female affected with migraine to have an improved quality of life.

CONCLUSION:

The first choice of treatment for migriane is taking medicine but by doing the relaxation tarining regularly we can getrid of this global health issue with least expenditure. This research can be taken into next level by increasing the sample size and can compare with other treatment modalities.

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