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Original Research Paper

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EFFECTIVENESS OF PAIN EDUCATION AND CONVENTIONAL THERAPY IN TENSION HEADACHE IN FEMALES.

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ABSTRACT

Background: Tension type headache is the most common headache among the primary headache occurring in the middle -aged people. Pain education aims to explain to patients the biological psychological processes involved in pain and, more importantly, to take the focus away from associated to anatomical structures such as muscles, fascia, cartilage and so on. Pain education provides constraining evidence in pain reduction, improving function, pain catastrophizing, and limitation of physical movement. Pain education initially changes a patient's perception of pain. **Objective:** This study was conducted to investigate the impact of pain education as an adjunct to conventional exercise on pain coping behaviour in chronic tension type headache. **Methodology:** The study was a 3- week randomised controlled trial. A total of 100 patients within age group 18-40 years were included and assigned into two groups: GROUP A were given conventional exercises (50 participants) and GROUP B were given conventional exercises along with pain neuroscience education (50 participants). The severity of chronic tension type headache, pain catastrophizing, level of stress before the beginning of treatment and at the end of 3 weeks were measured using Numeric Pain Rating Scale (NPRS), Pain Catastrophising Scale (PCS), and Stress Questionnaire. **Results:** The result revealed that more significant improvement was seen in experimental group where Pain education was given. **Conclusion**: The study concluded that both the groups showed improvement in the pain, but the experimental group showed more significant improvement in pain, movement and other factors.

KEYWORDS : Pain education, chronic tension type headache, female middle age group.

INTRODUCTION

Tension-type headache is the most common headache among the primary headaches that may affect the physical, social, and the psychological aspect of the individual. The tension type headache is divided into chronic and episodic types [1]. Chronic tension type headache (CTTH) with 15 or more headache episodes per month (>15days /month) significantly impacts quality of life (QOL)and causes disability in day-to-day life and accompanied by high personal and socio-economic costs [1].

Chronic tension type headache is recurrent episodes of headache which lasts for minutes to weeks. From mild to moderate and of bilateral in location and does not worsen with the routine physical activity[2]. The pain can radiate from the lower back of the head, the neck, eyes, or other muscle groups in the body. Tension type headache affect about 1.89 billion people[3] and women are more affected than male (The female-to-male ratio is 5:4) and the average age of onset is 18-30 years. The highest incidence of pain occurs between the ages of 30-39 and decreases slightly with age [4,5]. Stress, anxiety, lack of sleep, depression, young age, not eating on time, poor health are the most common risk factors that may cause tension type headache in individuals[6].

The pathologic basis of tension type headache is most likely derived from a combination of personal factors, environmental factors, and alteration of both peripheral and central pain pathways[8] Peripheral pain pathways receive pain signals from pericrania (around the head) myofascial tissue (protective tissue of muscles)[8]. The prolonged alterations in the peripheral pain pathways that lead to increased excitability of the central nervous system pain pathways, resulting in the transition of episodic tension type headache into chronic tension type headache[8]. Specifically, the hyperexcitability occurs in central nociceptive neurons (the trigeminal spinal nucleus, thalamus, and cerebral cortex) resulting in central sensitisation, which manifests clinically as allodynia and hyperalgesia of chronic tension type headache [9,10] Also the patients have decreased pain and thermal threshold which further supports for central sensitisation that occurs in chronic tension type headache[9]. According to some research, dysfunction in supraspinal descending inhibitory pain pathways may have a role in pathogenesis of central sensitisation in chronic tension type headache[9].

Pain education changes a patient perception of pain. Pain education can be used with a combination of treatments, including exercise therapy that can help to achieve adherence to the treatment[4] Hence exercise can be delivered in a much better way and increase the efficacy of therapeutic intervention. Patient may present with maladaptive cognitions, behaviour, or coping strategies in response to pain. Typically, they acquire a protective(movement-related) pain memory, which causes a barrier to adhere to therapeutic treatment such as exercise, decreasing the likelihood of a good outcome. Therefore, these maladaptive behaviours, central sensitisation and previous failed treatments are all indicators for Pain Education[5], taking into consideration the above-mentioned mechanism, the mandate asks for modern neuroscience approach using a comprehensive rehabilitation program comprising pain education along with conventional physical therapy approach.

Aim:

To evaluate the efficacy of pain education and conventional therapy in tension headache in females.

Objectives:

1. To evaluate the efficacy of pain education in tension headache.
2. To understand the impact of pain education in patients with tension headache.

Methodology

- **Study Design:** Randomised controlled trial
- **Study Type:** Interventional study.
- **Sample Method:** Convenient sampling.

- **Sample Size:** 100
- **Source Of Data:** General population between the age of 18-40 years.

Inclusion Criteria
- Female patients willing to give consent.
- Age group between 18-40 years.
- Chronic tension headache.

Exclusion Criteria
- Whiplash associated disorders.
- Recent spine surgery.
- Pregnancy.

RESULT:

Data Analysis

Group	Time frame	PCS		NPRS		Stress Questionnaire	
		z-value	p-value	z-value	p-value	z-value	p-value
Group A	Pre	0.214	0.001	0.214	0.001	0.106	0.200
	Post	0.2	0.001	0.205	0.001	0.111	0.002
	Difference	0.21	0.001	0.211	0.001	0.200	0.001
Group B	Pre	0.115	0.020	0.222	0.001	0.200	0.001
	Post	0.120	0.030	0.247	0.001	0.232	0.001
	Difference	0.2	0.001	0.304	0.001	0.180	0.001

Data set for group A is not normally distributed as the variables have indicated significant outcome in the observation. The researcher shall use non-parametric test for data analysis purpose in the following sections for Group A.

Data set for group B is not normally distributed as the variables have indicated significant outcome in the observation. The researcher shall use non-parametric test for data analysis purpose in the following sections for Group B.

DISCUSSION:

The study was performed with intention to evaluate the impact of pain education in adjunct to conventional exercises in patients with chronic tension type headache. While analysing the outcome measures of the study, it was revealed that the group which received the Pain education along with conventional exercises showed more improvement in pain beliefs as compared to the group which received only conventional protocol. Both the groups showed an improvement in pain status. Also, the pain beliefs of patients in group B were significantly reduced as compared to group A when analysed at pre and post intervention.

The statistical analysis of group B showed significant differences at post intervention in terms of fear avoidance as Pain education helps patients to understand the mechanisms underlying the pain problem by explaining that pain is the result of sensory hypersensitivity rather than a damaged spine. As a result, caution should be taken when trying to explain pain neurophysiology to chronic tension type headache individuals with poor self-reported pain[2]. Pain education was shown to reduce pain ratings, insufficient awareness of pain, disability, pain catastrophizing, fear avoidance, and unhealthy attitudes and behaviours related to pain when used for musculoskeletal disorders. A study showed findings that in patients with chronic tension type headache both manual therapy and active interventions, like moist pack, postural correction, occipital release are effective in reducing symptoms and disability[3].

To better understand the potential effects of postural correction and occipital release training in patients with chronic tension headache more comprehensive studies with longer follow-up durations are needed. Other studies stated that Pain Education combined with cognition-targeted motor control training appears to be more effective than current best-evidence physiotherapy for improving pain, symptoms of central sensitization, disability, mental and physical functioning, and pain cognitions in individuals with chronic tension type headache.

This knowledge may result in reduced fear of injury or damage while moving the spine, possibly resulting in a decrease in kinesiophobia. This implies that pain e education can reduce the perceived chronicity and the perceived negative impact of the illness, whereas it can increase the perceived fluctuations of the illness and the perceived personal control.

The concept of reconceptualizing pain, a cornerstone of Pain education, aims to have patients see their pain differently. This implies that even though they still experience pain, they think differently about it, equating it to sensitization of the nervous system versus the health of the tissues. This reconceptualization imparts a message of "despite the pain," it is worthwhile to move, exercise, engage, and continue in daily activities and not necessary to seek additional care for the sensitization (pain). This behaviour change is the key to changing any patient's healthcare status. In our study the statistical analysis of group A showed significant differences at post intervention in terms of pain (NPRS)(PCS) as neck muscles strengthening exercise strengthens the weak muscles, and it decreases the imbalances in muscles and increases stabilization in the neck to improve neck pain and dysfunction levels. Hence implication of Pain education as an adjunct to conventional therapy will not only reduce the fear of pain but also reduce the chronicity and impact of illness.

CONCLUSION

However, the Pain Education demonstrated an additional benefit along with the conventional treatment protocol in reducing pain, improving function. Hence, a statistically significant difference was seen between group comparisons.

Limitations
- The Occupational aspect of patients was not taken into consideration.
- whiplash injury was excluded from the study.

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