Efficacy of Study for Correlation of TTH vs Age and Gender Factors Using EMG Biofeedback Technique

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ABSTRACT

In this study, the authors have tried their best to check the effect of tension type headache (TTH) over age and gender. TTH is produced by stress, and it may start at any stage of life. Subjects usually suffer from two types of TTHm i.e. for short time and for long time. When subjects suffer for a long time, it affects both mind and body. So, checking at which age it started and how the gender is affected by this problem is useful. For this study, we have used use EMG biofeedback therapy. Biofeedback is the process which examines the body part by sending the wave to ear drum, by electric signal, etc. Here, we took two parameters, age and gender, to analyze the effect of TTH. To check this, we have tested the subjects by using different modes, i.e. audio mode, video mode, and audio-visual mode. Trend models have different types of outcomes by mathematical expression i.e. linear, cubic, exponential, etc. So, the comparisons of outcome are in different modes, it showed that the TTH problem affects females at an early age compared to males.

KEYWORDS
Alternative Medicine (AM), Analgesic Consumption, Anti-Depressants, Audio, Mental and Physical Scores, Muscle Relaxants, Other Medication (OM), PM Prophylactic Medication, SF36, Triptans, TTH, Visual

INTRODUCTION

Social Annals for TTH Along With Age

Everyone deals with stress at any point of time. Both young and old people have to face stress and tension. Due to various obstacles or hurdles prevailing in their lives. According to a study, the average age of onset of TTH is 25 to 30 years. It attains maximum peak between the ages of 30 to 39 which decreases slightly with age. Various studies reveal that the lifetime prevalence of TTH is 30% to 78%. The data from a study conducted in New Zealand reveals that 34.5% children in NZ

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aged up to 7-13 years suffer from frequent headaches. About 9% of these children suffer from TTH in adulthood (Rubin, 1992).

11.1% people of 26 years members are suffering from TTH and this rate increases to 17.5% at the age of 32 Years. Out of those suffering from TTH at the age of 32, 10.3% have infrequent episodic Tension type headache (ETTH), 87.2% have frequent TTH and 2.6% are suffering from chronic TTH. According to epidemiological studies, second decade is considered as the most common time period for the onset of TTH in individuals. However, these higher and chronic levels of TTH decreases after the age of 60 (Rastogi et al., 2018a).

A study conducted over 1972 individuals between 18-65 years of age revealed that TTH is prevalent in the age group of 40-49 years (35%). However, a significant decline in the number was observed after the age of 49.

**Gender-Based Studies on Chronic TTH at a Glance**

Studies reveal that TTH affects women slightly more than man. The female to male ratio of TTH is 5:4. As per a recent study, the rate of TTH is 1.6 times higher in females than males.

As per a study conducted over 1972 members aged between 18-65 years of age, 441 patients were diagnosed with TTH which constitutes about 22.3%. Out of this 22.3% people, 25% were women i.e. about 272 cases and 19% constitutes man which covers about 169 cases. This study also analyzed 68.4% females suffering from chronic TTH and 60.6% females from episodic TTH (Fumal et al., 2008).

So as per this study, 62.4% were female suffers and 37.5% male sufferers maintaining a ratio of 1.6:1. A study conducted in New Zealand, the prevalence of TTH in females is twice as compared to males. Chronic TTH was observed in 68.4% people and episodic TTH. The reports by various studies clearly reveals that female to male sufferer’s ratio ranges from 1.6:1 to 3:1.

**Background and Purpose of Study With Experimental Setup**

This study was conducted over a group of 230-250 subjects (patients) suffering from Tension Type headache. These subjects were divided into 7 groups and EMG therapy was experimented over them (Rastogi et al., 2018b).

All the three modes of EMG therapy-audio, visual, audio-visual was applied over all the patients over a period of 1 year. The observations were recorded after a time span of 1 month, 3 months, 6 months and so on. These observations were recorded and well analyzed on various parameters. For this study we correlated all the three modes of EMG with age and gender (Boureau et al., 1991).

**PREVIOUS STUDIES**

**Biofeedback**

In 1969, an organization named “Biofeedback Research Society (BRS)” coined the term “biofeedback” against the term Auto regulation. In 1976, this organization was renamed as Biofeedback Society of America (BSA). However, it is presently known as “The Association for Applied Psychophysiology and Biofeedback.”

A physician named Edmund Jacobson is one of the earliest contributors in the field of biofeedback. In 1938, he conducted an experiment to find out if muscles are actually relaxed by the therapy of electromyography (EMG) (Rastogi et al., 2017a). Earlier it was considered that autonomic responses can’t be controlled voluntarily. However, in 1962 Miler and LioDicara observed that curarized rats have the ability to control their autonomic responses.

The father of biofeedback, Joe Kamiya found that some subjects can identify the alpha waves which are produced when EMG therapy is performed on them. They can also alter the alpha frequency of 1MHz, thus enabling them to control and manage their neuro-biological system (Rastogi et al., 2018c). Two physicians Marinacci and Whatmore used biofeedback to treat stroke patient’s way before this
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