

Effect of Rehabilitative Nursing Interventions on Patients with Chronic Tension-Type-Headache

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Abstract:

Background Chronic tension-type headaches (CTTH) are one of the most common presenting complaints in ambulatory care clinics and are the most common reason for using over-the-counter analgesic medications. **Aim:** The aim of study was to evaluate the effect of rehabilitative nursing intervention (RNI) on patients with CTTH. **Setting:** the study was conducted at neuro-psychiatric out-patient in two hospitals in Shebin El-kom city, Menoufia Governorate and patient's homes for follow up. **Sampling:** A purposive sample of 60 CTTH diagnosed patients was included. The cases were followed up for 8 weeks to determine the effect of (RNI) on improving health profiles of CTTH patients. **Tools:** A semi-structured interviewing questionnaire, Nottingham Health Profile (NHP) and visual analogue scale (VAS) were used. **Results:** the mean age of studied patients was 35.60±12.75 years, 46.7% had high education, 56.7% were female, The highest percent (68.3%) was married. The higher percent of triggering factor (70%) was due to nervousness. There was statistically significant positive correlation between age and Nottingham Health Profile scores. A highly significant improvement was found among widows patients post intervention compared with pre. There was improving in all dimensions of health profiles (part & part II) post intervention. The difference mean score between post and pre for improvement was higher in energy/tolerance but the difference mean score was the little in physical mobility. **Conclusion:** CTTH have a disabling, annoying effects on diseased patients, implementation of RNI for patients with CTTH have a positive effect on improving all patients' health dimensions and wellbeing. **Recommendations:** application of rehabilitative nursing intervention supported with medication regimen and increase duration of follow up time in future studies is useful in alleviation of the negative impact of CTTH.

Keywords: CTTH, relaxation, trigger factors, self help management, and rehabilitation.

Introduction:

Headache is a very common problem that affects many people every year. Approximately 14,000 patient visits to health care professionals occur each year due to headache complaints.

⁽¹⁾ Over 90% of men and women have one or more headaches each year, with 4.5 million Americans experiencing recurrent headaches ⁽²⁾, since approximately half of all individuals with frequent or chronic TTH experienced remission of their headaches in a 12-year epidemiological follow-up study. ⁽³⁾

Tension type headache (TTH) is a distressing condition which, when chronic, can affect patients almost daily and can often be difficult to treat effectively. ⁽⁴⁾ It is the most common

type of recurrent primary headache disorders that includes significant functional limitations, and imposes large individual and socio-economic burdens. ⁽⁵⁾

Most common causes of intermittently recurrent headache are adequately treated with simple analgesics and cause little concern to the sufferer. However, when symptoms become more frequent or severe and sufficient to interfere with daily life, advice on appropriate self-medication may be sought. ⁽²⁾

Headache disorders are classified as primary or secondary. The etiology of primary headaches is not well understood and they are classified according to their clinical pattern. The

most common primary headache disorders are tension-type headache, migraine and cluster headache. The major health and social burden of headaches is caused by primary headache disorders and medication overuse headache. They are painful and debilitating for individuals, an important cause of absence from work or school and a substantial burden on society. ⁽⁶⁾

World Health Organization (WHO) ⁽⁷⁾ would bring headache disorders onto the 10th most common disabling conditions for the two genders and into the 5 most common disabling conditions for women. Patients with chronic headache have a level of functioning worse than patients with such chronic condition as arthritis, diabetes, and back problems. ⁽⁸⁾ The only chronic conditions that had similar levels of functional impairment to chronic headache were myocardial infarction and congestive heart failure, and the only disorder with worse levels of patient wellbeing and functioning was symptomatic HIV infection. ⁽⁹⁾

Headache triggers have been defined as “factors that, alone or in combination, induce headache attacks in susceptible individuals”.⁽¹⁰⁾ Triggers (also called precipitating factors) usually precede the attack by less than 48 h. The most commonly reported triggers are: stress and negative emotions; hormonal factors for females; flicker, glare and eyestrain; noise; odours; hunger and consumption of certain foods and alcohol; weather; fatigue; and lack of sleep. There is a long tradition in the clinical management of individuals who suffer from recurrent headaches to emphasize the importance of identifying the triggers and then avoiding them. ⁽¹¹⁾

Measuring health-related life aspects, is an expression of one's perceptions of their position in life that is affected by physical health,

psychological state, and social relationships .It includes subjective perceptions of one's life situation in the context of the culture and value system in which they live and in relation to their goals, expectations, and standards. Measuring health-related life aspects, also, makes it possible to quantify the burden of illness and to compare the burden with unhealthy and healthy people having headache. ⁽¹²⁾

The aim of relaxation training is to help patients to recognize when their muscles are tensed and relaxed and to teach them to control muscle tension in their daily life. Progressive relaxation training and autogenic relaxation training are commonly used techniques in the treatment of CTTH. ⁽¹³⁾ In patients with CTTH, the combination of stress management therapy and tricyclic antidepressant was demonstrated to be more effective than behavioral treatment or drug treatment alone. ⁽¹⁴⁾

Improved strategies for better prevention and treatment are therefore, needed. ⁽¹⁵⁾ Patients' knowledge about headache and its treatment is often poor and may lead to wrong conceptions of disease and insufficient therapy. Likewise, education in non-pharmacological prevention may also be valuable to the patients; an interdisciplinary approach is often recommended and considered to be very highly relevant in providing chronic and often refractory headache patients with appropriate therapeutic care.⁽¹⁶⁾ The main activities undertaken by the specialist nurse include patient consultations to monitor their progress at intervals. This includes follow-up to medical clinic consultations or inpatient episodes, monitoring drug efficacy and tolerability, supporting patients with treatment changes and addressing patients' queries. ⁽¹⁷⁾

Significance of study:

CTTH is a distressing condition. It can affect patients almost daily and can

often be difficult to treat effectively. Moreover approximately half of all individuals with frequent CTTH experience remission of their headaches. CTTH may lead to significant functional limitations, and may impose large individual and socio-economic burdens. ⁽⁴⁾

Little is known about the prevalence of headache and the associated analgesic use. Self-medicating for headache is very popular in the Middle East particularly in Egypt. Chronic and inappropriate use of over-the-counter drugs such as analgesics particularly non steroidal anti-inflammatory drugs (NSAIDs), can lead to over use syndromes and drug-induced headache. ⁽¹⁵⁾

Aim of the study:

The aim of study was to evaluate the effect of rehabilitative nursing intervention on patients with chronic tension type headache.

Study hypothesis:

Patients with CTTH who received rehabilitative nursing interventions will improve post intervention compared to pre intervention.

Subjects and methods:

Research design:

A quasi-experimental design (one group pre test -post test design) was used.

Setting:

The study was conducted at neuro-psychiatric out-patient in two hospitals in Shebin Elkom city, Menoufia Governorate, Egypt and patient's homes for follow up.

Subjects:

A purposive sample of 60 patients with chronic tension type headache that were diagnosed in Neuro-psychiatric out-patient by the physicians and started

to receive their medication therapy for CTTH.

Tools of the study:

- **Tool (1): Semi-structured interviewing questionnaire:** It was developed by the researchers .It included questions relevant to demographic characteristics including: age, sex, education, occupation, income, smoking.....also, triggering factors for CTTH.
- **Tool (2): Nottingham Health Profile (NHP):** ⁽¹⁸⁾ NHP is a generic quality of life survey used to measure subjective physical, emotional, and social aspects of health. It consists of 45 items and covers two parts:
 - **Part (I):** 38 questions in 6 sub-areas, with each question assigned a weighted value; the sum of all weighted values in a given sub-area adds up to 100. Part I of the survey measures six dimensions of health including: energy level (EL): 3 items, pain (P): 8 items, emotional reaction (ER): 9 items, sleep (S): 5 items, social isolation (SI): 5 items, physical abilities (PA): 8 items.
 - **Part (II):** It encompass 7 life areas questions including: work, house work, social life, domestic relation, sexual life, recreational interest & vocational problems.
- **Tool (3): Visual analogue Scale (VAS):** ⁽¹⁹⁾ VAS is a pain measurement tool to measure a characteristics and attitudes that are believed to range a cross a continuum of values that cannot easily be directly measured. It is a rating scale starting from 0-100. The score of 0-30 means mild pain. 40-60 means moderate pain, finally 70-100 means sever pain.

Content validity and reliability of tools:

The Nottingham Health Profile (NHP) was translated by the researcher to Arabic language and tested for its content validity by group of five experts in the psychiatric and community medicine and nursing. The required modification was carried out accordingly. Then test-retest reliability was applied. The tool proved to be strongly reliable ($r = 0.8222$).

Field Work:

The study started from December 2013 till May 2014 for six months. Data collection and filling of questionnaires took 3 months. Follow up of CTTH cases and application of the rehabilitative nursing intervention took 2 months (8 weeks) according to Kiran, et al.,⁽²⁰⁾ the cases were followed up for 8 weeks duration. The follow up was started immediately after finishing baseline assessment for all subjects.

The Intervention:

Before the intervention, the psychiatric researcher trained the community researcher about relaxation techniques (progressive muscle relaxation, diaphragmatic breathing and meditation), then they assumed to train all participants together. The community health researcher assumed to give the instructions and guidelines of headache –self- care management immediately after baseline assessment then through visiting the patients in their homes during the follow up period.

The aim of community researcher is providing information about CTTH, its nature, causes, how to control triggering factors, increase patient's potential to follow healthy life style behaviors related to CTTH reduction.

Headache self-care included many interventions, measures & activities achieved by community health researcher directed to the patients at their homes, like putting a heat pack on

your head or neck. Taking a hot shower. Getting enough rest or sleep. Maintaining consistent sleep patterns, including on weekends and holidays . Getting regular exercise. Avoiding caffeinated drinks, withdrawing of medication causing headache adverse effects. A routine of 20-40 minutes of aerobic exercise 3 or more times per week .Eating regular meals, easily digestive diet , and do not skip meals. Eating a good, healthy breakfast. Drinking plenty of fluids to avoid dehydration. Also, managing emotions in the form of creative activities, mindfulness. Managing obligations as, time management, breaking large tasks into small pieces, goal setting, and assertive connections with others.⁽²¹⁾

The training took place in a dedicated, quiet place in the Neuro psychiatric out patient and was performed during individual (s) sessions. The training included combined relaxation techniques of diaphragmatic breathing and progressive muscle relaxation, meditation with a total duration of 20 minutes, followed by explanation of headache self-care management instructions for 15 minutes. The patients were asked to perform these techniques twice each day for eight weeks. Their compliance was evaluated by home visits and a telephone call. The subjects were given material (prochours and CD) containing instructions about exercising and relaxation techniques and headache self care at home.

A. Information / reassurance and avoidance of trigger factors:

Information about the nature of the disease is important. It can be explained that muscle pain may lead to a disturbance of the brain's pain-modulating mechanisms⁽²²⁾, so that normally innocuous stimuli are perceived as painful, with secondary perpetuation of muscle pain and risk of anxiety and depression..

Triggering factors as stress, weather, hungry disturbed sleep, menstruation

- B. Progressive Muscle Relaxation (PMR):** Is a technique for reducing stress and anxiety by alternately tensing and relaxing the muscles. It was developed by American physician Edmund Jacobson in the early 1920s. Jacobson argued that since muscle tension accompanies anxiety, one can reduce anxiety by learning how to relax the muscular tension. PMR entails a physical and mental component. ⁽²³⁾
- C. Diaphragmatic Breathing:** The natural act of breathing has been used as a means of relaxation intuitively, has been traditionally part of different yoga traditions and is now incorporated in many relaxation programs. Diaphragmatic breathing, or abdominal or belly or deep breathing is marked by expansion of the abdomen rather than the chest when breathing. Diaphragmatic breathing is defined as a manipulation of breath movement, contributing to a physiologic response. ⁽²⁴⁾
- D. Transcendental Meditation (TM):** The TM technique is a simple, psycho-physiological stress reduction procedure. It is simple and easily learned, requiring to be practiced for 20 minutes twice daily while sitting with eyes closed and repeating a ‘mantra’, a meaningless sequence of sounds specific to each individual, to promote a natural shift of awareness to a wakeful but deeply restful state. ⁽²⁵⁾ During the TM practice, a reduction in mental and physical activity occurs and that is the result of the individual’s experience of a mental state called —transcendental consciousness, which is different from usual waking, dreaming, or sleep states. Clinical effects of TM impact a

broad spectrum of physical and psychological symptoms and syndromes, including reduced anxiety, pain, and depression, enhanced mood and self-esteem, ⁽²⁶⁾ decreased stress ⁽²⁷⁾, and faster recovery from stress.

Pilot study:

Pilot study was carried out before starting data collection; this was done to estimate the time required for filling out the sheet and also to check the clarity, applicability, relevance of the questions. The pilot study was conducted on 6 subjects and then they were excluded from the total sample. Based on the results of the pilot study, the necessary corrections and modifications were carried out. It revealed that the questionnaire took nearly 20 minutes to filled out.

Administrative and ethical considerations:

An official approval was obtained from the Dean of Faculty of Nursing forwarded to the director of Menofia University Hospital and Shebin El kom Teaching Hospital. The aim of the study was explained to the patients, encouraged to participate and motivated to express their experiences. The patients were asked to give an informed verbal consent to participate. It was emphasized that all data collected was strictly confidential and the data would be used for scientific purposes only.

Statistical Analysis:

The collected data were organized, tabulated and statistically analyzed using SPSS program version 16. For quantitative data, the range, mean, standard deviation were calculated. For qualitative data comparison between two groups and more was done using chi-square (χ^2) test. For comparison between mean of two groups of parametric data student t-test was used. For comparison between two groups of non parametric data Z-value of mann

whitney test was used. For comparison between mean of two related groups (pre-post intervention) of parametric data paired t-test was used. For comparison between more than two means of nonparametric data, F2 value of Kruskal- wallis was calculated .Correlation between variables was evaluated using Pearson correlation coefficient (r). Significant was adopted $p < 0.005$ for interpretation of results of tests of significant. ⁽²⁸⁾

Results:

Regarding to basic data among studied patients, as shown in **(table. 1)**, it was found that, the studied patients were in age group (16-65) years and the mean age is 35.60 ± 12.75 years, 46.7% had high education, 56.7% were female, The majority (68.3%) were married, 60% of them were employees, and 63.3% had an additional sources of income, 73.3% had no family history. Only 15% were smoke, while 41.7 were exposed to passive smoking. According to type of family, 75% were nuclear. Concerning to triggering factors, as shown in **figure (1)**, the major triggering factor were stress and nervousness while, the minor triggering factor were abnormal body posture. According to pain quality, as shown in **figure (2)**, it were found that 56.7 % suffering from pressing pain while, 43.3% were suffering from tightening pain.

Regarding to VAS pain intensity, **table (2)** revealed that, there was a highly statistically significant difference pre and post intervention regarding pain intensity ($P < 0.05$). The higher mean score (41.17 ± 11.21) was among studied patients with CTTH pre intervention; it decreased and became (17.00 ± 11.09) post intervention .i.e. Pain intensity was clearly decreased after intervention.

Table (3): Showed relationship between total health profiles (Nottingham health profile part I) and basic data of

studied patients with CTTH. Regarding sex, the mean score was higher among female than male with no significant difference between male and female in pre and post intervention. But concerning marital status, the highest mean score was found among widows with no significant relation pre intervention but significant relation was appeared with post intervention. There were no statistically significant relationship found in pre and post intervention regarding the following variables; job, joint in other work, couple working, other source of salary, income, active smoking, exposure to passive smoking, family type and past family history. On the other hand, the higher mean score were found among patients with manual work,; who jointed to other job, who have a working couple ,who have other source of salary, and had no enough income, who exposed to active and passive smoking ,who had an extended family, and who had a family history to CTTH. There were a statistically significant relationship found in pre and post intervention regarding the levels of education, crowding index and number of children.

As shown in **figure (3)**, there was statistically significant positive correlation between age and Nottingham Health Profile scores whether pre-intervention ($r=0.411$, $P=0.001$) or post-intervention ($r=0.426$, $P=0.001$). i.e as age increases the score of Nottingham health profile scores increase .

Figure (4): Illustrated that, there was a highly statistically significant difference in all dimensions of Nottingham health profile (energy, pain, emotional reaction, social isolation, physical mobility and sleep) pre and post intervention .i.e. there was improving in all dimensions of health profiles post intervention ($P < 0.05$) . The difference mean score between post and pre for improvement was higher in energy/tolerance domain but the

difference mean score was the little in physical mobility domain.

Concerning the seven life areas of Health Nottingham Profiles Part II, the result in **table (4)** showed that, there was a statistically significant difference regarding the six life areas including, work, house work, social life, domestic relation, sexual life & vocational pre and post intervention ($P=0.0001$). While, a lower statistically significant difference was found in recreational domain.

Discussion:

Headache is an important general health problem. Severe and frequent headache episodes constitute a significant burden for both the individual and the community.⁽²⁾

The current study showed that, the studied patients were in age group (16-65) years and the mean age was 35.60 ± 12.75 years. This result was congruent with Lyngberg et al.,⁽²⁹⁾ who stated that, CTTH is common between 30 and 39 years of age and often starts at an age of 25-30. Also, this result was congruent with Mokhber et al., and Loder and Rizzoli^(30,31) who found that, the mean age was 37.0 & 33.3 years respectively among their study's sample. More than half were female. This was consistent with Loder & Rizzoli⁽³¹⁾ who found that, more than half of the studied subjects were female. Stovner et al.,⁽³²⁾ added that, CTTH is more frequent in women than in men, with five women experiencing CTTH for every four men. Also the results of the present study revealed that two third were married. This result supported by finding done by Loder & Rizzoli⁽³¹⁾ who found that, more than quarter of his study sample were married. Also, this is may be due to married persons have more responsibilities and exposed to more stressors than single ones, so they are being at high risk for headache.

The result of current study, found that, about half of the study sample had a high education and post-graduated educational level. This is may be due the post-graduate have many duties and always under stress and need more concentration compared to others to achieve their activities.

Also, the study results revealed that, two third of them were employees. Employed persons were jointed all times, many hours with their work, make many physical efforts and exposed to many stressors and problems in their work settings, so they became tired most of the day(s), so they had a higher risk of CTTH and tension. Regarding to subject's income, the present study revealed that, near half of studied patients not had enough or hardly enough income. This lead to financial problems and stressors make them in tension all times, so they became highly vulnerable for symptoms of CTTH.

Stress was reported to be the most frequent triggering factor inducing more headaches in patients with CTTH when compared to a healthy control group in a study conducted by Martin, et al.,⁽³³⁾ the result of current study showed that, stress/tension and physical activity followed by sleep deprivation was the most common triggering factor for headache. Otherwise, This result supported by Martin⁽³⁴⁾ who found that stress/tension and physical activity followed by sleep deprivation was the most common triggering factor for headache. In a study among undergraduate students in the USA, stress was the also most common triggering factor (92.9%) of headache among the surveyed students.⁽³⁵⁾

CTTH is characterized by a mild-to-moderate headache intensity, a pain that is described as 'pressing' and 'tightening' and can occur with differing frequencies and durations.⁽³⁶⁾

This result was in agreement with the current result where more than half suffering from pressing pain and less than half suffering from tightening pain and their pain ranged from a mild-to-moderate headache intensity.

The origin of pain in TTH traditionally has been attributed to increased contraction and ischemia of head and neck muscles.⁽⁴⁾ The present study's finding showed that, there was a statistical significant relationship between VAS pain intensity pre and post intervention. This was consistent with finding that ascertain that, severity of headache as assessed by VAS scale showed highly significant reduction in severity of pain in Group I(cases) compared by group II(control).⁽²⁰⁾

Current study finding showed that, there was a statistical significant relationship between basic data and total health profiles of studied patient's pre and post intervention. Although widows have no support with absence of her husbands, they have more compliance than others to get rid of their stresses. By using the psychological principles they tend to follows the instructions and guidelines than others because they not find the hand of support to reply her family life needs.

Concerning crowding index, some people become uneasy in crowds particularly at homes or tight spaces, so standing in a tightly packed line, may cause them to experience extreme anxiety, possibly to cause a panic attack.⁽³⁷⁾ Illiterate subjects tend to implement the intervention guidelines as they received from the researchers because they fear of disease and having some forms of health illiteracy. On the other hand, this finding was inconsistent with that done by Jain et al.,⁽³⁸⁾ who stated that, none of the socio-demographic variables: marital status, cohabitation, educational level, occupational category or employment status was significantly associated with

migraine or tension-type headache. Moreover, with increasing number of children, responsibilities and life needs were increased.⁽³⁷⁾ In other study , primary type headaches were common among housewives (40.1%), married persons (69.3%), those belonging to socioeconomic class II (47%), and in nuclear families (75.25%). Education did not have any significant role to play.⁽³⁹⁾

Although the incidence of TTH slightly decrease with age.⁽²⁹⁾ The current study revealed ,a significant positive correlation was found between age and Notingham health profiles scores whether in pre or post intervention i.e. as age increases the score of Notingham health profile scores increase. This may be due to, with increasing age the patients appreciate the value of health rather than disabilities and medication cost.

Patients with CTTH have a demonstrated lower well-being and QL. The impact on QL in patients with CTTH is probably due to different factors, while the frequency of the headache plays an important role in the reduction of well-being and QL.⁽³⁹⁾ This result similar to the above results where most of the studied subject have a demonstrated lower health related profiles dimensions (energy, pain, emotional reaction, social isolation, physical mobility and sleep) pre intervention. This result supported by Passchier et al.,⁽⁴⁰⁾ who indicated that, people with tension-type headaches suffer from lower quality of life in all aspects of their living, including physical and mental health, social relationships and environmental health. Also, Jensen⁽⁴¹⁾ revealed that, patients with CTTH have lower QL. In one study by Guitera et al.,⁽⁴²⁾ when they study the NHP dimensions of pain, sleep, energy, and social isolation, they found that, each headache patient group had a lower HRQL than the healthy

ones. The same researchers indicated that patients with headaches suffer from lower quality of life in the aspects of sleep, pain, energy, activity, and social solitude as compared to normal people. ⁽⁴²⁾

According to the previous studies, the patients who listened to the guided imagery tape improved in headache frequency, headache severity, patient global assessment, quality of life, and disability caused by headache. ⁽⁴³⁾ In addition, relaxation training improved headache disability and all dimension of health profile and total health. Moreover relaxation training improved CTTH and related symptoms. ⁽¹³⁾ The current study findings was similar, where, there was a highly statistically significant difference found in all dimensions of Health effects of Nottingham health profile (energy, pain, emotional reaction, social isolation, physical mobility and sleep) pre and post intervention .i.e. there was improving in all dimensions of Health effects post intervention.

The intervention that were used in current study included relaxation techniques (progressive muscle relaxation, diaphragmatic breathing, and meditation) as well as, self help management and modifying triggering factors).The same results revealed the positive effect of these therapies and behavioral modification in reducing pain and enhance level of health and wellness. In the relaxation training group, headache intensity decreased immediately after, and three and six months after the last treatment. Also, physical training and relaxation training was superior to acupuncture for the improvement of subjective CNS-related symptoms that might affect patients' subjective well-being and QL. ⁽¹³⁾

The application of headache self and diaphragmatic breathing in this study was beneficial in management of CTTH. A plausible explanation of the

greater improvement in the physical training and the relaxation training groups could be that the patients involved continued with these exercise/relaxation techniques and learned to control their headache by themselves. ⁽⁴⁴⁾ A combined treatment program incorporating four weeks of physical training with massage, relaxation techniques, stretching training and a home training program have been shown to improve headache-free days in CTTH. ⁽⁴⁵⁾

From the current study finding, the difference mean score between post and pre for improvement was higher in energy/tolerance domain but the difference mean score was the little in physical mobility domain. This result consistent with that conducted who found, the highest decreases were seen for role physical, bodily pain, vitality, and social functioning. ⁽⁴⁶⁾

The improvement of problems related -health life areas including work, house work, social life, domestic relation, sexual life, recreational interest & vocational problems (Nottingham Health profile Part II) among CTTH patients was clear in our study findings. This result was consistent with Holroyd et al. ⁽⁴⁷⁾ who stated that, headache disorders impose recognizable burden on sufferers including substantial personal suffering, impaired quality of life and financial cost. Repeated headache attacks, and often the constant fear of the next one damages family life, social life and employment. Moreover, Meditation helps the patient to change his way of looking at life situations and people. It learns how to gain liberation from circumstances. ⁽²⁰⁾ Moreover, enhance mood and self-esteem, decrease stress, and faster recovery from stress. ^(26, 27)

Conclusion:

CTTH have a disabling, annoying effects on diseased patients

,implementation of RNI for patients with CTTH, including relaxation techniques as well as, headache self care management and modifying triggering factors have a positive effect on improving all patients' health dimensions and wellbeing.

Recommendations:

Application of (RNI) supported with medication regimen is useful in alleviation of the negative impact of CTTH .Also, increase duration of follow up time in future studies for at least 3or 6 months, to ascertain better improvement rate. Further researches are needed to cover this area of concern because of less studies was conducted in Egypt.

Table (1): Basic data of the studied patients with chronic tension type headache (n=60)

Variables	The studied patients with chronic tension type headache (n=60)	
	n	%
Sex:		
▪ Males	26	43.3
▪ Females	34	56.7
Age (years):		
Range	16-65	
Mean±SD	35.60±12.75	
Marital status:		
▪ Single	10	16.7
▪ Married	41	68.3
▪ Widowed	3	5.0
▪ Divorced	6	10.0
Job:		
▪ Not working	17	28.3
▪ Manual work	2	3.3
▪ Employees	36	60.0
▪ Trader	5	8.3
Joint other work:		
▪ Yes	9	15.0
▪ No	51	85.0
Couple working:		
▪ Yes	33	55.0
▪ No	27	45.0
Educational level:		
▪ Illiterate	5	8.3
▪ Primary	3	5.0

Conti. table (1)

▪ Intermediate education	24	40.0
▪ High education & post-graduate	28	46.7
Income:		
▪ Not enough	27	45.0
▪ Enough & spare	23	38.3
▪ Enough	10	16.7
Crowding index:		
▪ 1-2	53	88.3
▪ 3-4	5	8.3
▪ >4	2	3.3
Number of children:		
▪ No children	13	21.7
▪ 1-2	17	28.3
▪ 3-4	22	36.7
▪ 5-6	6	10.0
▪ 7-8	2	3.3
Active smoking habits:		
▪ Yes	9	15.0
▪ No	51	85.0
Exposure to passive smoking:		
▪ Yes	25	41.7
▪ No	35	58.3
Body weight (kg):		
Range		50-110
Mean±SD		70.63±12.61
Family type:		
▪ Nuclear	45	75.0
▪ Extended	15	25.0
Family history of chronic tension type headache:		
▪ yes	16	26.7
▪ No	44	73.3

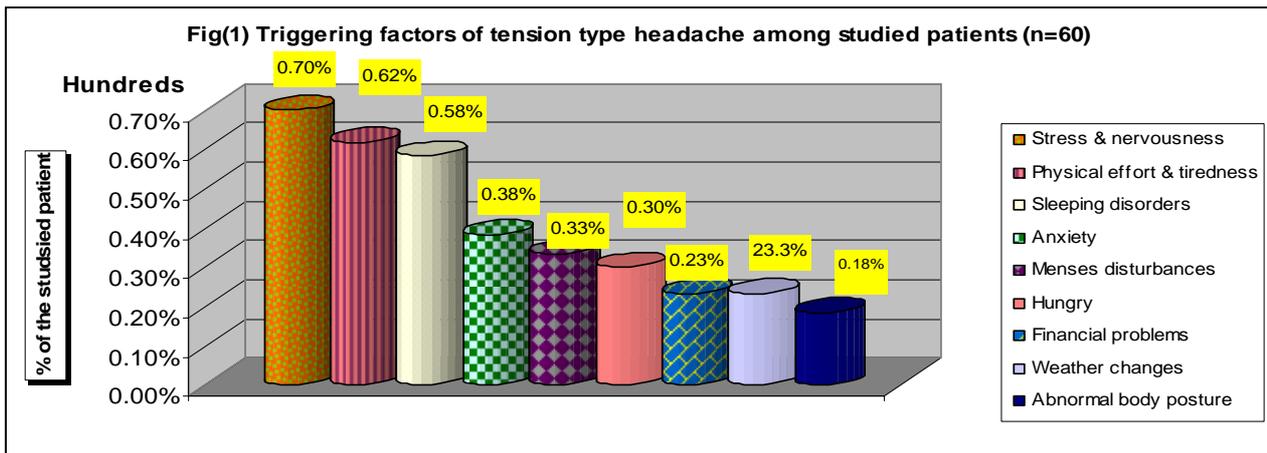


Figure (1): Triggering factors of chronic tension type headache among the studied patients (n=60)

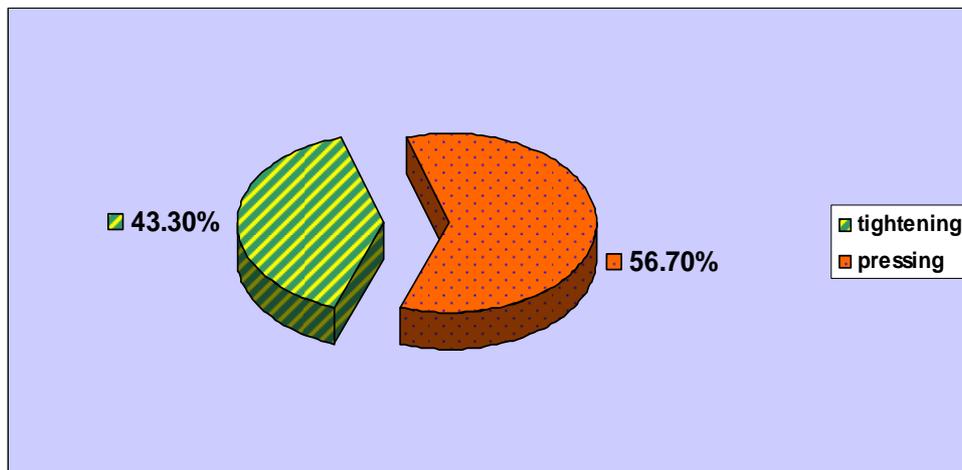


Figure (2): Quality of chronic tension headache among the studied patients (n=60)

Table (2): VAS Pain intensity of chronic tension type headache among the studied patients pre and post intervention (n=60)

Pain intensity (Visual Analogue Score)	The studied patients with chronic tension type headache (n=60)		Paired t- test	P
	Pre-intervention	Post-intervention		
■VAS:				
Range	20-60	0-50	17.362	0.0001*
Mean±SD	41.17±11.21	17.00±11.09		

*Significant (P<0.05)

Table (3): Relationship between total health profiles (Nottingham health profile part I) and basic data of studied patients with CTTH(n=60)

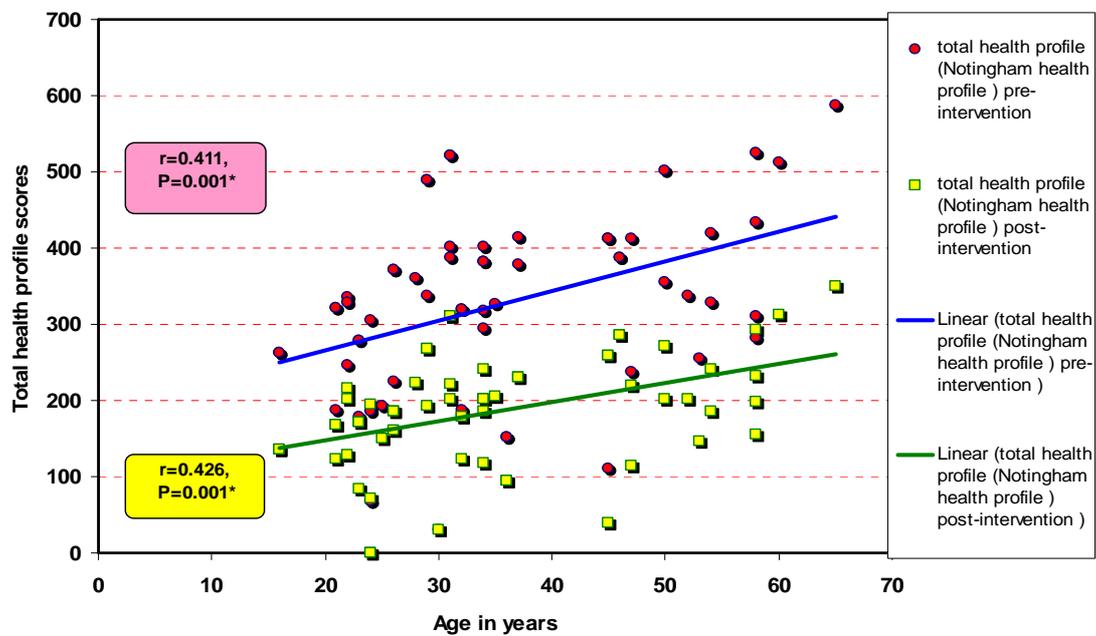
Items	Pre-intervention	t-test or χ^2 -value or P	Post-intervention	t-test or F-value P
Sex:				
▪ Males	314.73±103.61	0.633	175.61±69.64	0.997
▪ Females	334.78±133.69	0.529	195.38±80.66	0.323
Marital status:				
▪ Single	223.94±99.19	0.513	116.00±72.96	12.209
▪ Married	337.29±113.54	0.951	195.10±66.99	0.007*
▪ Widowed	476.43±133.31		282.67±86.58	
▪ Divorced	344.66±94.94		200.33±59.40	
Job:				
▪ Not working	347.34±109.02	3.896	193.47±72.21	3.152
▪ Manual work	461.19±178.47	0.408	275.50±105.36	0.369
▪ Employees	303.48±125.14		174.67±78.17	
▪ Trader	362.62±78.62		216.20±42.35	
Joint other work:				
▪ Yes	320.47±92.50	0.150	187.11±62.23	0.012
▪ No	327.08±126.12	0.881	186.76±78.83	0.990
Couple working:				
▪ Yes	328.76±113.23	0.187	190.70±66.64	0.434
▪ No	322.84±132.05	0.852	182.07±87.37	0.666
Other source of salary:				
▪ Yes	332.59±132.94	0.543	193.42±85.21	0.882
▪ No	314.87±99.00	0.589	175.41±57.13	0.382
Educational level:				
▪ Illiterate	489.95±76.65	11.216	294.80±38.55	11.562
▪ Primary	330.42±72.24	0.011*	167.00±32.91	0.009*
▪ Intermediate education	336.88±100.42		191.12±59.48	
▪ High education & post-graduate	287.12±124.52		165.96±81.67	
Income:				
▪ Enough	296.08±129.18	3.864	171.48±85.53	2.455
▪ Enough & spare	331.95±108.55	0.145	190.00±65.17	0.293
▪ Not enough	393.65±105.57		220.90±66.56	
Crowding index:				
▪ 1-2	303.70±107.41	13.66	173.72±69.40	13.126
▪ 3-4	485.14±93.06	0.001*	276.00±53.66	0.001*
▪ >4	521.73±0.00		311.00±0.00	
Number of children:				
▪ No children	221.03±103.74	22.545	119.54±68.68	20.610
▪ 1-2	363.59±69.20	0.0001*	205.94±30.34	0.0001*
▪ 3-4	312.00±118.01		184.86±81.35	
▪ 5-6	422.40±78.12		240.67±46.82	
▪ 7-8	556.35±43.89		321.50±40.30	
Active smoking habits:				
▪ Yes	357.52±48.46	0.843	210.78±37.14	1.025
▪ No	320.55±129.22	0.403	182.59±80.57	0.310
Exposure to passive smoking:				
▪ Yes	348.43±111.77	1.213	197.08±63.97	0.881

Conti. table (3)

▪ No	310.14±126.37	0.230	179.48±83.83	0.382
Family type:				
▪ Nuclear	314.16±100.74	1.331	180.78±62.22	1.066
▪ Extended	361.88±167.33	0.188	204.93±108.49	0.291
Family history of CTTH				
▪ yes	326.15±152.05	1.164	204.19±93.60	1.067
▪ No	315.16±107.58	0.249	180.50±68.83	0.290

*Significant ($P < 0.05$)

2-value of Kruskal Wallis Test



R=Correlation Coefficient

*Significant ($P < 0.05$)

Figure (3): Correlation between total health profile (Nottingham health profile part I) and age of the studied patients with CTTH pre and post- intervention (n=60)

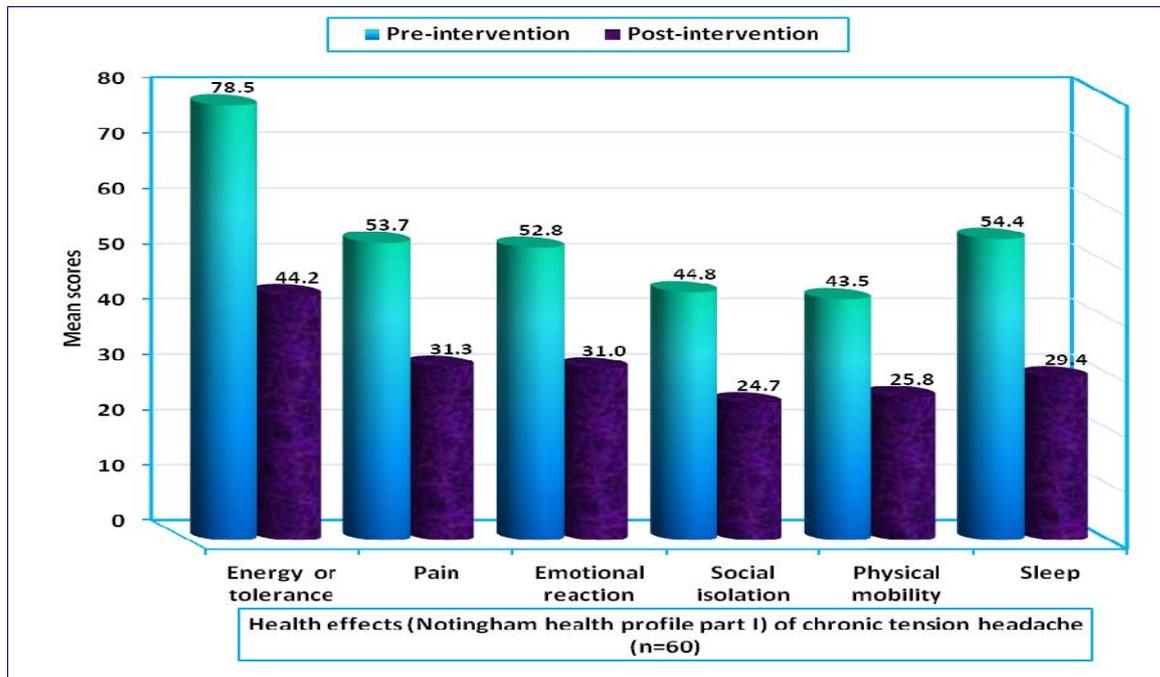


Figure (4): Health effects (Nottingham health profile part I) of chronic tension type headache among the studied patients pre and post rehabilitative nursing intervention (n=60)

Table (4): Effect of rehabilitative nursing intervention on problems of health life areas (Notingham Health profile Part II) among CTHH patients pre and post intervention (n=60)

Problems due to health effects of chronic tension type headache	The studied patients with chronic tension type headache(n=60)				χ^2	P
	Pre-intervention		Post-intervention			
	n	%	n	%		
Work problems:						
▪ Yes	30	50.0	3	5.0	30.470	0.0001*
▪ No	30	50.0	57	95.0		
House work problems:						
▪ Yes	37	61.7	5	8.3	37.509	0.0001*
▪ No	23	38.3	55	91.7		
Social life problems:						
▪ Yes	42	70.0	7	11.7	42.25	0.0001*
▪ No	18	30.0	53	88.3		
Domestic relation problems:						
▪ Yes	39	65.0	7	11.7	36.099	0.0001*
▪ No	21	35.0	53	88.3		
Marital life problems :						
▪ Yes	31	51.7	9	15.0	18.150	0.0001*
▪ No	29	48.3	51	85.0		
Recreational interest problems:						
▪ Yes	25	41.7	11	18.3	7.778	0.005*
▪ No	35	58.3	49	81.7		
Vocational problems:						
▪ Yes	31	51.7	7	11.7	22.185	0.0001*
▪ No	29	48.3	53	88.3		
Total health problems score						
Range	0-7		0-5			
Mean±SD	3.95±2.37		0.95±1.34			
#Z value			6.311			
P			0.0001*			

*Significant ($P < 0.05$)

#Z value of Wilcoxon Signed Ranks Test

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