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Original Article

Frequency of Tension-type Headache in Females Presenting with Chronic Daily Headaches

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ABSTRACT

Objective: To assess the role of non-pharmacological interventions in relieving Tension-type headache.
Study Design: Quasi experimental study
Place and Duration of Study: Neurology department, Pak Emirates Military Hospital, Rawalpindi Pakistan, from Dec 2020 to May 2021.
Methodology: Tension-Type Headache was diagnosed by physician using the International Classification of Headache Disorders III (ICHD-III). Patients were randomized into two groups, Group-A was intervention Group and Group-B was the control group. Both the groups were followed at 14 and 30 days. Visual analogue pain (VAP) scale and Headache Intensity Test 6 (HIT) was applied to evaluate the intensity of headache.
Results: Out of 600 patients with chronic daily headaches, 210(34%) patients had Tension-type headache. The mean age of these females was 35.4± 9.342 years. A total of 112(53%) were working, 172(81.9%) were married. In terms of level of education, 68(32.4%) had done matriculation, 29(13.8%) had done FSc. and 113(53.8%) had completed higher education. At 28 days post intervention, there was significant improvement in Headache Impact Test (HIT) score (43.26±4.48 vs 49.81±5.52, *p*-value <0.05) and visual analogue pain scale (3.19±1.481 vs 4.30±2.052, *p*-value <0.05), in Groups A and B respectively.
Conclusion: There was improvement in intensity of mild to moderate Tension-type headache after nonpharmacological intervention.

Keywords: Exercise, Headache, Sleep, Smoking, Tension-type headachez.

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INTRODUCTION

Headache is a common and preventable disorder among young adults especially females with a prevalence in males from 1.3% to 65% and in females from 2.7% to 86.[1] The pain of a Tension-type is described by patients as "coming from outside" of the head, in contrast migraine headache appears to be "coming from inside".[2] Females have a greater prevalence of headaches both Tension-type and migraine than their male counterparts.[3]

Stress in general, and psychological stress in particular, is believed to be the most important factor causing headaches.[4] Tension-type headaches have a great socioeconomic impact on the lives of effected people, with more rates of absenteeism and decreased efficiency and quality of work in people suffering from them.[5] Headache disorders are important causes of disability worldwide.[6] Due to harmful side effects, dependency and rising costs of pharmacological treatment there has been a shift towards alternative techniques which including relaxation and different behavioral therapies.[7]

Being a health issue of great importance, with a dearth of similar studies in our region, the aim of our study is to ascertain the role of non-pharmacological interventions such as relaxation, exercises, good sleep habits in relieving TTH.

METHODOLOGY

The quasi-experimental study was conducted at Pak Emirates Military Hospital (PEMH), Rawalpindi, Pakistan from December 2020 to May 2021 after approval was given by Ethical Review Committee (ERC letter no A/28/EC/306/2021). Non-probability, convenience sampling was used. OpenEpi software calculator was used to calculate sample size with Tension-type headache prevalence of 14.2 % in our population.[8]

Inclusion Criteria: Females classified for TTH as per ICHD 3 criteria, aged 18 to 40 years, being able to walk into clinic without any support etc were included.

Exclusions Criteria: Patients with Headache Impact Test (HIT) score of more than 57 and/or Visual Analogue Pain Scale (VAP) more than or equal to 8

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out of both the groups, patients who were suffering from neurological disorders such as history of stroke, undergone neurosurgical intervention, remained admitted under treatment of neurologist or neuro-surgeon in hospital, any history of benign or malignant lesion in brain, history of chemotherapy or radiotherapy, pregnancy or history of taking antipsychotic or antidepressant medicines were excluded from the study.

We defined Chronic daily headache as headache occurring for 15 days each month, and Tension-type headache as dull, non-pulsating, unilateral headache. All the patients qualifying for Tension-type headaches (TTH) according to International Classification of Headache Disorders (ICHD) 3 were interviewed by self-administered questionnaire. Questions related to age, marital status, sleeping habits, level of education, caffeine intake, history of illicit drug abuse, smoking or huqqa use, visit to doctor for headaches, undergoing any radiological investigation, use of over-the-counter drugs, headaches interfering leisure activities and concentration in work, and average hours a week of physical activity.

These patients were interviewed and a headache questionnaire was filled by physician under guidance of a specialist who was qualified in neurology. The patients were randomized into two groups by lottery method (Figure).

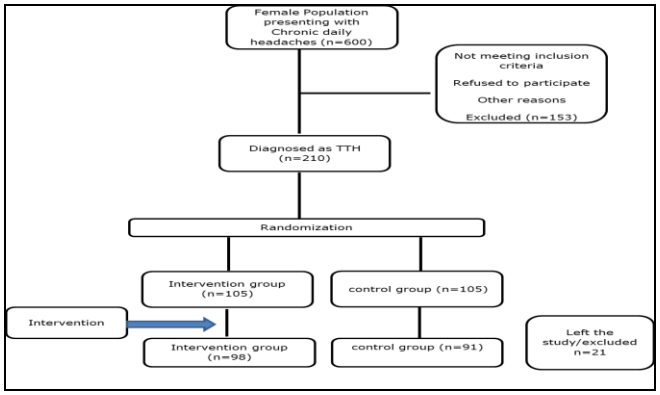

Figure: Patient Flowchart (n=210)

Group-A was labeled as study group on which intervention was done. Intervention included relaxation exercises explained in detail by physician, reducing office/work timings to 6 to 8 hours, having 6 to 8 hours of sound sleep at night, getting engaged in a spiritual activity like prayers, avoid smoking and reduce caffeine intake, reducing exposure to screen activities such as mobile phone and laptops and indulging in physical activity 30 to 60 minutes a day 5 days a week.[9] Group-B consisted of patients who were only followed up and no intervention was done. VAP score and HIT score was applied before intervention at day one, fifteen days and thirty days post intervention.

Statistical Package for Social Sciences (SPSS) version 26 was used for data analysis. Independent Samples t-test and Chi-square test was applied and the p-value of ≤0.05 was considered as significant.

RESULTS

Out of 600 patients presenting with chronic daily headaches, 210 female patients were diagnosed at TTH and included in the study. The mean age of these females was 35.4±.342 years. One hundred and twelve (53%) were working, 172(81.9%) were married. In terms of level ofeducation, 68(32.4%) had done matriculation, those having completed intermediate and higher education were 13.8%(13.8%) and 113(53.8%) respectively. One hundred and fifty-one (71.9%) females were taking tea and 59(28.2%) were taking coffee. Seventy-nine (37.6%) reported having to take leave from work due to uncontrolled Tension-type headache. The prevalence of illicit drug use was 1(0.5%) with 57(27.1%) of respondents being smokers and 153(72.9%) being non-smokers. Number of patients who had visited physician for headaches was 142(67.6%) and 192(91%) had taken over-the-counter pain-killers such as aspirin and acetaminophen to relieve there headaches. CT scan was done on 36.7(77 %) to diagnose headache disorder. The number of respondents whose headaches were interfering some daily activities were 135(64.3%) and those with headache interfering in all the activities of the day was 53(25.2%).

Demographic information of TTH patients in Pakistan and Pre/post intervention effect on intensity of TTH is shown in Table-I and Table-II respectively.

DISCUSSION

In a study published in Turkey the prevalence of TTH in females was more than 31%.[10] In our study the frequency of TTH in females was 35 % which is similar to the Turkish study. Jensen *et al*. reported male to female ratio of 4:5.[2] The mean age of female patients in our study was 35.14 years, in a population based study conducted in Canada, the mean age of females was 40 years, and some of were diagnosed either as migraine or TTH. This may be due to better socioeconomic conditions as compared to this region of the world and better awareness among the masses and easy accessibility to health care system. Females with

Table-I: Demographic information of Tension-type Headache Patients (n=210)

Study parameters	n (%)
Age (years)	35.4±9.342 Range (18-40)
Marital Status	
Married	172(81.9)
Un married	38 (18.1)
Level of education	
Matric	68 (32.4)
FSc	29 (13.8)
Higher education	113 (53.8)
Caffeine intake	
Tea	151 (71.9)
Coffee	59 (28.1)
Absenteeism form work/Sick leaves	
Yes	79 (37.6)
No	131 (62.4)
Illicit drug use	
Yes	1 (0.5)
No	131 (62.4)
Smoking/Huqqa	
Yes	57 (27.1)
No	153 (72.9)
Doctors visit	
Yes	142 (67.6)
No	68 (32.4)
Over-the-counter drug use	
Yes	192 (91)
No	19 (9)
Radiology	
X ray	15 (7.1)
CT Scan	77 (36.7)
None	118 (56.2)
Headaches interfering with daily activities	
None	22 (10.5)
Some	135 (64.3)
All	53 (25.2)

Table-II: Headache Impact Test and Visual Analogue Pain Score Pre and Post Intervention (n=210)

Parameters	Study Groups		*p*-value
	Group A (n=98)	Group B(n=91)	
Headache Impact Test score			
Baseline (mean±SD)	3.11±7.0	54.40±7.22	
Score n (%)	21 (17)	13 (17)	0.002
55-59	46 (39)	32 (39)	<.0062
50-54<49	31 (39)	53 (42)	
14 days (mean±SD)	47.10±6.00	50.74±6.34	
Score n (%)	13 (20.2)	26 (18.78)	<0.001
55-59	32 (37.85)	41 (35.15)	<0.0003
50-54<49	53 (39.9)	24 (37)	
28 days (mean±SD)	43.26±4.48	49.81±5.52	
Score n (%)	13 (20.2)	26 (18.78)	<0.001
55-59	32 (37.85)	41 (35.15)	<0.001
50-54<49	53 (39.9)	24 (37)	
Visual Analogue Pain Scale			
Baseline (mean±SD)			
Score n (%)	4.92±1.24	5.26±1.339	<0.001
6-7	32 (31.4)	44 (37.5)	<0.090
4-5	64 (62.7)	46 (53.6)	
2-3	6 (5.9)	7 (6.34)	
14 days (mean±SD)			
Score n (%)	4.09±1.141	5.21±1.26	<0.001
6-7	5 (21.7)	37 (20.2)	<0.001
4-5	69 (61.9)	49 (56)	
2-3	24 (15.04)	5 (13.96)	
28 days (mean±SD)		4.30±2.052	
Score n (%)	3.19±1.481	23 (13.96)	<0.001
6-7	6 (15.4)	42 (31.78)	<0.001
4-5	24 (34.2)	26 (45.26)	
2-3	68 (48.7)		

Tension-type headaches have greater risk of medication overuse for these headaches.[11] In our study, 67.6% female patients consulted a physician for their headaches and this percentage is quite encouraging as compared to studies conducted in Saudi Arabia, Jordan and Yemen which showed fewer female patients consulting doctors for their headaches.[12,13] In Saudi Arabia, 12.4 % female patients suffering from TTH sought medical care.[14] The percentage of smokers and nonsmokers among female Tension-type headache patients was 27.1 % and 72.9 % respectively. This was in agreement with prevalence studies conducted at Yemen and Jordan.[15] Thirty seven point six of employed females suffering from TTH had to miss one or more days of work due to headaches which is quite high compared to a Danish study, in which 12% of TTH population had to skip work.[16] The difference in the results may be because our study was solely conducted on female patients however in Danish study males were also included.

There was an improvement in symptoms of headaches in Group-A as compared to Group-B at days 14 and 28, which was evidenced by reduced Visual Analogue Pain Scale score and HIT score. Similar interventional studies conducted inter-nationally have shown similar results.[17,18]

CONCLUSION

In the management of TTH, non-pharmacological interventions should be used before escalating the treatment to pharmacological interventions. There was significant improvement in intensity of mild to moderate TTH after interventions such as good sleeping habits, relaxation techniques and physical activities etc.

Conflict of Interest: None.

Authors' Contribution

Following authors have made substantial contributions to the manuscript as under:

TS & BK: Study design, drafting the manuscript, data interpretation, critical review, approval of the final version to be published.

UN & MH: Data acquisition, data analysis, approval of the final version to be published.

HAK & KHN: Critical review, concept, drafting the manuscript, approval of the final version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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