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RESEARCH ARTICLE

PREVALENCE AND IMPACT ON JOB PERFORMANCE OF PRIMARY HEADACHE AMONG MEDICAL AND PARAMEDICAL STAFF IN THE EMERGENCY DEPARTMENTS OF TAIF HOSPITALS - SAUDI ARABIA

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Abstract

Objectives: The headache is one of the most common neurological disorders and was ranked the third cause of years lost due to disability.So This study conducted to identify the prevalence of headache and its impact on job performance in emergency department medical and paramedical staff.

Methods: A cross-sectional study using self-administered questionnaire. The sample of 308 medical and paramedical staff were selected randomly from emergency departments of Taif hospitals during the period from December 2016 - January 2017.

Results: Three hundred eight staff participated in the study.158 (51.3%) Male and 150 (48.7%) Female.132 (42.9%) Medical and 176 (57.1%) Paramedical.The last Three months prevalence of headache among participants was 272(88.3%)and havingstatistical significant differences with Physical Activities (p=0.008) and Smoking (p=0.020). Regarding the Impact of headache, 86 (31.6%) Little to no impactand the others have severe impact 74 (27.2%), Remarkable impact 40 (14.7%) and Some impact 72 (26.5%).There were statistical significant differences ($p \leq 0.05$) between Headache impact test and age, marital status, specialty, BMI, Physical activities, smoking, headache duration, specialist consultation, Medication use and frequency of absenteeism.

Conclusion: The primary headache prevalence is very high among medical and paramedical staff in emergency departments. Its characteristics are almost meeting the diagnostic criteria of the tension type headache. The impact of headache on job performance is little in the most of the staff, but there is significant percent of those with severe impact.

Introduction:-

The headache is one of the most common neurological disorders. It is been in the form of pain and disability that occur in primary headache disorders called cluster, migraine, tension-type headache. The headache can occur due to

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secondary causes such as medication-overuse headache.[1] So the headache is classified regarding the causes to Primary headache that is daily, benign and not caused by underlying disorders and Secondary headache is caused by underlying problems such as Head injuries and space occupying lesions (e.g. bleeding, tumors …etc.).[2]

According to Global Burden of Disease Study 2013, Headache was ranked the third cause of years lost due to disability (YLD).[3]

The Most common type of headaches is primary headache (More Than 90%), and mostly episodic tension-type headache. Roughly everyone is suffered from this type of headache at least once in his life. In Saudi Arabia, the headache prevalence is 63% affecting mainly females and younger age. The tension-type headache has had the highest type prevalence (32%) and is considered as the common cause of the physician visits and work absenteeism. It is followed by the migraine headache that was (2.6 - 5%).[4-5]

The medical and paramedical staff are exposed to high work stress, that can let them suffering from psychosomatic symptoms such as Primary headache. The Headache disabilities have an actual effect on job performance, costs and outcomes.Some studies found that the 31% of Migraine headache sufferers were losing one workday in a period of 3 months, and absent an ordinary of 10.7 days/year for the sake of headache symptoms. The absenteeism due to migraine headache costs annually $13 Billion Dollars and $1,165 Dollars for each individual in the United States of America (USA). [6-8]

There is still a lack of sufficient studies to investigate the primary headache prevalence and its impact on the job performance of medical and paramedical staff in the Emergency departments. The goals of conducting this study are to determine the prevalence and impact on the job performance of primary headache among medical and paramedical staff in the Emergency departments of Taif city hospitals - Saudi Arabia.

Methods:-

A cross-sectional study was designed to assess the prevalence of Headache in the Emergency Department Health Related Staff and its effect on job performance, using self-administered questionnaire. It includes 3 parts: **The First Parts**collects the sociodemographic data (Age, gender, marital status, specialty, Body Mass Index (BMI), physical activity, smoking, income and Family History) and determines the participant suffering from headache in the last 3 months. All those participants answered this question with "yes", they asked to continue the rest of the questionnaire. **The second part** included questions about the characteristics of headache. **The Third part**assessed theimpact of headache on job performance by using Headache Impact Test (HIT-6)[9].The score of (HIT-6) shows the burden of headache on normal daily life and job performance as the following:

- **Score 60 or More:** The headache have very severe impact on the life and job.
- **Score 56 – 59:** The headache have a remarkable impact on life and job.
- **Score 50 – 55:** The headache have some impact on life and job.
- **Score 49 or Less:** The headache have a little to no impact on life and job.

The sample of 308 medical and paramedical staff was selected randomly from emergency departments of Taif hospitals (King Abdul Aziz Specialist Hospital, King Faisal Hospital, Prince Mansour Military Hospital, Al-Hada Military Hospital and Al-Ameen Hospital), during the period from December 2016 - January 2017.

All medical and paramedical staff those work in emergency department, over 18 years old and either male or female were included in the study. The health care providers those suffered from headache due to secondary causes were excluded. All participants were informed about the nature of the study and oral consent obtained from those who agreed to participate in the study. All participants were informed that their participation in the study is voluntary. The data was coded and entered using Microsoft Excel 2010, and then analyzed using SPSS program version 0.21.

Results:-

Sociodemographic Data:-

Three hundred eight medical and paramedical emergency department staff participated in the study. Most of the participants were Male (51.3%), Age group ranged from (25 - 39) with 57.1%, Single (51.9%), Paramedical (57.1%), Body Mass Index (BMI) Mean and Standard Deviation (SD) (24 ±5), Not performing ≥ 30 min. of physical activities (48.1%), Non-Smoker and 5000-10,000SR Income/Month, (79.9%) and (55.8%), respectively. **(Table 1)**

Table 1:- Socio-demographic data of the study sample (N=308)

		N	%
Age	18 - 24	80	26%
	25 - 39	176	57.1%
	40 - 59	52	16.9%
	Total	**308**	**100%**
Gender	Male	158	51.3%
	Female	150	48.7%
	Total	**308**	**100%**
Marital status	Single	160	51.9%
	Married	144	46.8%
	Divorced/Widow	4	1.3%
	Total	**308**	**100%**
Specialty	Medical	132	42.9%
	Paramedical	176	57.1%
	Total	**308**	**100%**
Body Mass Index (BMI)	Underweight	36	11.7%
	Normal	148	48.1%
	Overweight	80	26%
	Obese	44	14.3%
	Total	**308**	**100%**
BMI Mean and SD		24 ± 5	
Physical Activities ≥ 30 mins./Week	Never	148	48.1%
	1	56	17.5%
	1 - 3	70	22.7%
	+3	36	11.7%
	Total	**308**	**100%**
Smoking	Yes	62	20.1%
	No	246	79.9%
	Total	**308**	**100%**
Income	5000-10,000 SR	172	55.8%
	10,000 – 15,000 SR	88	28.6%
	+ 15000 SR	48	15.6%
	Total	**308**	**100%**
Family history	Yes	122	39.6%
	No	186	60.4%
	Total	**308**	**100%**
Headache last three months	Yes	272	88.3%
	No	36	11.7%
	Total	**308**	**100%**

Prevalence of Headache:-

The last Three months prevalence of headache among participants was 88.3%.It was common in The age group ranging from 40-59 (96.2.1%), Male (89.9.2%), Divorced (100%), Paramedical (88.1%), Obese (95.5%), Those performing physical activities ≥ 30 min more than 3 times per week(94.4%), Smokers (96.8%),those with monthly income between 5000-10,000SR(90.7%) and those with positive family history of headache (90.2%).

There were statistical significant differences between headache occurrence in the last 3 months and Physical Activities ≥ 30 mins./Week (p=0.008) and Smoking (p=0.020). **(Table 2)**

Table 2:- Association between sociodemographic data and Headache occurrence in the last 3 months

		Headache occurrence in the last 3 months				X^2	P. Value
		Yes		No			
		N	%	N	%		
Age	18 - 24	72	(23.4%) 90%	8	(76.6%) 10%	4.94	0.09
	25 - 39	150	(48.7%) 85.2%	26	(51.3%) 14.8%		
	40 - 59	50	(16.2%) 96.2%	2	(83.8%) 3.8%		
Gender	Male	142	89.9%	16	10.1%	0.77	0.38
	Female	130	86.7%	20	13.3%		
Marital status	Single	136	85%	24	15%	3.8	0.15
	Married	132	91.7%	12	8.3%		
	Divorced/Widow	4	100%	0	0%		
Specialty	Medical	116	87.9%	16	12.1%	0.04	0.84
	Paramedical	156	88.6%	20	11.4%		
Body Mass Index (BMI)	Underweight	30	83.3%	6	16.7%	3.74	0.29
	Normal	128	86.5%	20	13.5%		
	Overweight	72	90%	8	10%		
	Obese	42	95.5%	2	4.5%		
Physical Activities ≥ 30 mins./Week	Never	138	93.2%	10	6.8%	**11.92**	**0.008**††
	1	44	81.5%	10	18.5%		
	1 - 3	56	80%	14	20%		
	+3	34	94.4%	2	5.6%		
Smoking	Yes	60	96.8%	2	3.2%	**5.39**	**0.020**††
	No	212	86.2%	34	13.8%		
Income	5000-10,000 SR	156	90.7%	16	9.3%	2.43	0.30
	10,000 – 15,000 SR	76	86.4%	12	13.6%		
	+ 15000 SR	40	83.3%	8	16.7%		
Family history	Yes	110	90.2%	12	9.8%	0.67	0.41
	No	162	87.1%	24	12.9%		

†† Statistically significant difference
(nn.n%) Column percent (of all sample)

Headache Characteristics:-

The characteristics of headache are represented in **(Table 3).** 58.8% of the participants suffering from headache for less than three years. The headache is happening often weekly in 51.5% of participants. It is almost Bilateral (56.6%), Dull/pressing (52.9%) in character, Gradually (42.6%) in onset, Moderate in intensity (58.1%), not increasing in frequency (58.8%), occurring in the evening (53.7%), relieving in hours with medications (50%) and without medications (64%), worsening by physical activities (57.4%) and Not associated with nausea (66.9%), vomiting (85.3%), sensitivity to light (52.9%) and neurological deficiencies (83.8%), but associated with sensitivity to noise (53.7%).

There is 73.5% of participants didn't seek a consultation with specialist and didn't absent from workdue to headache. 49.3% didn't use medications for their headache complaint.

Table 3:- Headache characteristics (N= 272)

		N	%
Headache duration (years)	1 - 3 Years	160	58.8%
	3 - 5 Years	44	16.2%
	+ 5 Years	68	25%
Headache frequency	Daily	34	12.5%
	Weekly	140	51.5%
	Monthly	98	36%
Headache site	Bilateral	154	56.6%
	One-sided	118	43.4%
Headache character	Pulsating / throbbing	128	47.1%
	Dull/pressing	144	52.9%
Headache onset	Gradually	116	42.6%
	Suddenly	78	28.7%
	Varies	78	28.7%
Headache intensity	Mild	74	27.2%
	Moderate	158	58.1%
	Sever	40	14.7%
Headaches increasing in frequency	Yes	112	41.2%
	No	160	58.8%
Headache time	Morning	68	25%
	Evening	146	53.7%
	Night	58	21.3%
Headache relieving (With Medications)	Minutes	44	16.2%
	Hours	136	50%
	Days	18	6.6%
	No Medication Use	74	27.2%
Headache relieving (Without Medications)	Minutes	46	16.9%
	Hours	174	64%
	Days	52	19.1%
Headache worsened by physical activities	Yes	156	57.4%
	No	116	42.6%
Headaches associated with nausea	Yes	90	33.1%
	No	182	66.9%
Headaches associated with vomiting	Yes	40	14.7%
	No	232	85.3%
Sensitivity to light	Yes	128	47.1%
	No	144	52.9%
Sensitivity to noise	Yes	146	53.7%
	No	126	46.3%
Neurological deficiencies	Yes	44	16.2%
	No	228	83.8%
Specialist consultation	General practitioner	24	8.8%
	Family Physician	18	6.6%
	Neurologist	30	11%
	None	200	73.5%
Medication use	No medication	134	49.3%
	Prescription	46	16.9%
	Over the counter	92	33.8%
Frequency of Absenteeism	1 - 5 days	46	16.9%
	5 - 10 days	20	7.4%
	+10 days	6	2.2%
	None	200	73.5%

Headache Impact Test (HIT-6):-

More than one-fourth of participants have Little to no impact(31.6%) and the others have severe impact(27.2%), Remarkable impact(14.7%) and Some impact(26.5%).**(Figure 1)**

There were statistical significant differences ($p \leq 0.05$) between Headache impact test (HIT-6) and age, marital status, specialty, BMI, Physical activities, smoking, headache duration, specialist consultation, Medication use and frequency of absenteeism. There weren't (HIT-6) and gender and income.

The severe impact of headache was almost affecting those people aging from 40-59 (48%), Married(33.3%), Medical (39.7%), Obese (100%), have headache more than 3 years (33.6%),consulting neurologist (60%), on over the counter medications (32.6%) and absenting 5-10 days per year (60%). **(Table 4)**

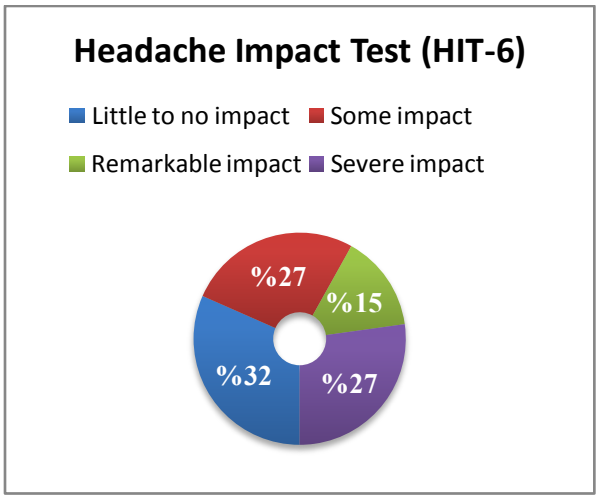

Figure 1:-Headache Impact Test (HIT-6)

Table 4:- Headache Impact Test (HIT-6) (N= 272)

		Headache impact test (HIT-6)								X^2	P. Value
		Severe impact		Remarkable impact		Some impact		Little to no impact			
		N	%	N	%	N	%	N	%		
Age	18 - 24	18	25%	10	13.9 %	20	27.8 %	24	33.3 %	**15.9**	**0.01**††
	25 - 39	32	21.3 %	22	14.7 %	42	28%	54	36%		
	40 - 59	24	48%	8	16%	10	20%	8	16%		
Marital status	Single	30	22.1 %	10	7.4%	44	32.4 %	52	38.2 %	**25.2**	**0.00**††
	Married	44	33.3 %	28	21.2 %	28	21.2 %	32	24.2 %		
	Divorced/Widow	0	0%	2	50%	0	0%	2	50%		
Specialty	Medical	46	39.7 %	16	13.8 %	30	25.9 %	24	20.7 %	**19.3**	**0.00**††
	Paramedical	28	17.9 %	24	15.4 %	42	26.9 %	62	39.7 %		
Body Mass Index (BMI)	Underweight	0	0%	0	0%	0	0%	30	100%	**411.1**	**0.00**††
	Normal	0	0%	0	0%	72	56.3 %	56	43.8 %		
	Overweight	3	44.4	40	55.6	0	0%	0	0%		

		2	%		%						
	Obese	42	100%	0	0%	0	0%	0	0%		
Physical Activities ≥ 30 mins./Week	Never	34	24.6%	20	14.5%	42	30.4%	42	30.4%	**18**	**0.04**††
	1	16	36.4%	4	9.1%	6	13.6%	18	40.9%		
	1 - 3	10	17.9%	14	25%	16	28.6%	16	28.6%		
	+3	14	41.2%	2	5.9%	8	23.5%	10	29.4%		
Smoking	Yes	12	20%	24	40%	8	13.3%	16	26.7%	**40.60**	**0.00**††
	No	62	29.2%	16	7.5%	64	30.2%	70	33%		
Headache duration (years)	1 - 3 Years	36	22.5%	18	11.3%	48	30%	58	36.3%	**29.3**	**0.00**††
	3 - 5 Years	16	36.4%	16	36.4%	6	13.6%	6	13.6%		
	+ 5 Years	22	32.4%	6	8.8%	18	26.5%	22	32.4%		
Specialist consultation	General practitioner	2	8.3%	2	8.3%	16	66.7%	4	16.7%	**50.8**	**0.00**††
	Family Physician	6	33.3%	4	22.2%	2	11.1%	6	33.3%		
	Neurologist	18	60%	8	26.7%	2	6.7%	2	6.7%		
	None	48	24%	26	13%	52	26%	74	37%		
Medication use	No medication	26	19.4%	16	11.9%	32	23.9%	60	44.8%	**34.2**	**0.00**††
	Prescription	18	39.1%	4	8.7%	20	43.5%	4	8.7%		
	Over the counter	30	32.6%	20	21.7%	20	21.7%	22	23.9%		
Frequency of Absenteeism	1 - 5 days	26	56.5%	2	4.3%	10	21.7%	8	17.4%	**46.3**	**0.00**††
	5 - 10 days	12	60%	4	20%	2	10%	2	10%		
	+10 days	2	33.3%	0	0%	2	33.3%	2	33.3%		
	None	34	17%	34	17%	58	29%	74	37%		

†† Statistically significant difference

Discussion:-

The Headache is the most common of neurological disorders that cause disabilities and have an impact on job performance among population. [6, 8] Multiple studies have reported the prevalence of headache in the health workers. But the studies denoted the headache and its impact among emergency department staff are rare. To date, this study is the first one that assess the prevalence of headache and its impact on job performance among medical and paramedical staff in the emergency departments in the hospitals of Saudi Arabia.

The health care works need a concentration, hard work and effort. Absence or weariness of one of the emergency department staff for one day or some time can affect the health care process.[10]So the headache needs evaluating and managing among medical and paramedical staff as all and specifically those working in the emergency departments.

In our study, we found the last three months prevalence of headache among medical and paramedical emergency department staff is88.3%**(Table 1)**, 87.9% of medical and 88.6% of paramedical **(Table 2)** This prevalence is much higher than the mean of global headache prevalence46% as well as thegeneral population prevalence in Saudi Arabia 63%.[5,11]And the other studies among varies Health Care Workers (HCWs) that conducted inSwitzerland, Nigeria, Taiwan and North China offer61%, 39.3%, 49.6%and 45.3%, respectively.[12-15] These stringent results refer to the burden of stress that affecting health care professionals and exactly the emergency department staff.[16]

The statistical significant difference is shown in **(Table 2)** between headache prevalence in the last 3 months and doing physical activities ≥ 30 min. more than thrice a week (p=0.008), because the headache is triggered by physical activities in 57.4% of the participant and this is supported byZivadinov and colleagues study, that suggested the physical activity is one of the most triggers of headache.[17]As well as the Smoking have an association with headache prevalence(p=0.020), represented in the smokers have a higher prevalence of headache (96.8%) than non-smokers (86.2%). This implies that the smoking have anegative effect on the headache occurrence as in Qi Gan and colleagues study (2016).[18]But this issue is conflicting according to Taylor, F. R. (2015).[19]

The headache characteristics among the study samplewere weekly in 51.5% **.(Table 3)** It is almost Bilateral (56.6%), Dull/pressing (52.9%) in character, Gradually (42.6%) in onset, Moderate in intensity (58.1%), not increasing in frequency (58.8%), occurring in the evening (53.7%), relieving in hours with medications (50%) and without medications (64%), worsening by physical activities (57.4%) and Not associated with nausea (66.9%), vomiting (85.3%), sensitivity to light (52.9%) and neurological deficiencies (83.8%), but associated with sensitivity to noise (53.7%). Most of these characteristics are meetingthe diagnostic criteria of the tension type headache of the headache disorders classification, 3rd edition - beta version (ICHD-3 beta) by International Headache society, except the triggering of headache by physical activities and the sensitivity to noise (phonophobia).[20]Regarding to the worsening of headache by the physical activities, it is one of the migraine criteria, according to the International Headache society (ICHD-3 beta). As for phonophobia, If it is occurring not more than once, It may considered as tension type headache. Overall, these characteristics may suggest that the tension type headache is the most type of primary headache affecting the medical and paramedical staff in emergency department, and it is propped by Sokolovic et al (2013).[12]

Unfortunately, The headache have a severe impact on the life and job performance of 27.2% of the emergency department staff.**(Figure 1)**Also, 36.4% of them were absenting from workdue tothe headache for 5 to 10 days in the past year (2016).Hence, This causes work productivitydecline and defect in the health care providing process.[10] These results can illustrate the high percent (60%) of seeking a consultation from a neurologist rather than other specialists and using a prescribed medications (39.1%). **(Table 4)**But when we discerned these sufferer staff, we found them almost have a risk factors of developing headache, such:Obesity and over the counter medications use.[21] So the risk factors, mainly modifiable, have to be taken into account beside thelife and work stress impact.The most age group were severely affected by primary headache is that between 40 - 59 years old, and that affected little to no impact were 25 - 39 years old. This is antithesis of many studies which assume the primary headache is decreasing during the aging.[22,23]Fortunately still there is 31.6% of participants have a little and even no impact by headache on their life and jobs, and they represent most of the medical and paramedical emergency department staff in Saudi Arabia.

Finally, we recommend conducting further studies to assessing the prevalence of headache and its impact on life and job performance in the health care field employee as all. Also, the documentation of the headache suffering employee is important, to take into account their conditions and so help them to overcome it and improve their life quality.Subsequently, This will increase the work productivity and decrease the burden of headache.

Conclusion:-

The primary headache prevalence is very high among medical and paramedical staff in emergency departments. Its characteristics are almost meeting the diagnostic criteria of the tension type headache. The impact of headache on job performance is little in the most of the staff, but there is significant percent of those with severe impact.

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