Volume 3, Issue 3, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

CHRONIC HEARTBURN AND HEADACHE AS PRESENTING FEATURES OF PSYCHOLOGICAL DISTRESS IN A TERIARY CARE HOSPITAL OF PAKISTAN

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DOI: https://doi.org/10.5281/zenodo.15572889

Keywords
Heartburn, Headache, anxiety, stress, depression

Article History
Received on 21 April 2025
Accepted on 21 May 2025
Published on 30 May 2025

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Abstract

Objective: *To assess the correlation between headaches, psychological distress, and persistent heartburn.*

Methodology: *This is a cross-sectional study conducted at PAF hospital, Islamabad for the duration of three months, the required sample size for this study was 165. Patients with new onset migraine or tension-type headache, experiencing heartburn or gastrointestinal distress for at least one month, aged between 25 and 45 years were included in the study. Data was entered, sorted and analysed using SPSS Version 23.0. Categorical variables were analyzed as frequency and percentages, while continuous variables were analyzed in mean and standard deviation. The chi-square test was employed to assess the significance of differences between proportions. The t-test was used to evaluate mean differences between two independent samples. A p-value of <0.05 was considered statistically significant.*

Results: *Total 165 adult patients were recruited in the study with mean age of 40.7 ± 15.1 years; gender distribution indicated 44 (36.7%) male and 76 (63.3%) females. The reason for consultation was reported as headache by 86(71.7%) of participants, while presenting complain was reported as headache by 38(31.7%), acidity by 32 (26.7%) and both by 26 (21.7%) of patients respectively.*
Depression anxiety stress scale indication reported 77(64.2%) of patients within normal ranges, 9 (7.5%) as mild depressed, 7 (5.8%) moderately depressed, 7 (5.8%) as severely depressed while 20 (16.7%) as extremely severe depression respectively. (Figure 02)

Conclusion: *The study emphasizes the intricate relationship that exists between adult mental health issues, headaches, and acidity.*

Volume 3, Issue 3, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

INTRODUCTION

Anxiety disorders are among the most common mental illnesses in the world, contributing to approximately 28.6 million disability-adjusted life years (DALYs), especially in adolescents between the ages of 10 and 24 [1]. According to estimates, 10–15% of Pakistanis suffer from anxiety disorders. As with depression, under diagnosis and underreporting may contribute to a higher actual rate. Anxiety disorders are not sufficiently identified and treated, despite their significant incidence. Insufficient treatment is provided to three-fourths of patients with anxiety disorders [2].

In Pakistan's tertiary care facilities, chronic headaches and heartburn are frequent complaints. Although these symptoms are frequently linked to neurological or gastrointestinal conditions, new research indicates that they could also be presenting signs of underlying psychological distress. In order to demonstrate the necessity of a comprehensive approach to diagnosis and treatment in tertiary care settings, this research will investigate the relationship between persistent heartburn, headaches, and psychological distress in the Pakistani environment [3].

Chronic heartburn is a common symptom of gastroesophageal reflux disease (GERD) in Pakistan. According to a Karachi study, 61.7% of participants had GERD symptoms, and stress, smoking, and late-night eating were determined to be major contributing factors [4]. Similarly, a study conducted in Southern Punjab found that stress was a significant risk factor for GERD, with a prevalence of 26.6%. Another typical complaint is headache, especially tension-type headache. According to a study of medical students in Karachi, 79% of them experienced tension-type headaches, and stress and irregular sleep patterns were found to be important risk factors [5].

Chronic headaches and heartburn are among the physical symptoms that frequently accompany psychological anguish. According to a study conducted in Khyber Pakhtunkhwa, anxiety and sadness were the most common psychiatric diseases, with 41.5% of patients reporting heartburn and 61.9% reporting headaches. In Pakistan, somatoform disorders—in which psychological anguish manifests as physical symptoms—are also common. A study found that anxiety and depression disorders, which primarily manifest as physical problems, affected 66% of women and 25% of men in both rural and urban populations [6].

The way psychological discomfort is expressed and interpreted in Pakistan is influenced by cultural variables. Somatic symptoms are frequently used to express emotional distress, particularly in rural places where mental health concerns may not be as well-known. Because medical professionals may concentrate on physical symptoms without taking into account underlying psychological problems, this cultural environment makes it difficult to diagnose and treat psychological discomfort [7].

According to research, the prevalence of psychiatric diseases in Asia is similar to that in the West when the same screening procedures are used, but primary-care doctors in Asia make fewer clinical diagnoses. Schemas, disease labels, and illness representations, as well as beliefs about the nature of the illness believed to be the origin of the symptoms, influence how a patient experiences and reacts to an anxiety-like feeling. Numerous sociocultural elements impact the experience of disease and distress, whether it be physical or mental, and have an impact on how illnesses manifest, coping mechanisms, and behaviors related to seeking care [8].

In order to determine the prevalence of anxiety disorder in this population, we will assess the percentage of patients who visit the medical or general outpatient department with complaints of physical symptoms, such as headaches or heartburn, ignoring the underlying psychological problems and focusing on the physical symptoms. We will also make an effort to comprehend their demographics, underlying causes, and willingness to receive treatment [9].

The aim of this study is to assess the correlation between headaches, psychological distress, and persistent heartburn and enable healthcare providers to start treatment plan with holistic approach to diagnosis and therapy including comprehensive Assessment, multidisciplinary collaboration, cultural sensitivity and Patient education.

Methodology:

This is a cross-sectional study conducted at PAF hospital, Islamabad for the duration of three months. Study participants were employed after getting ethical

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ISSN: (e) 3007-1607 (p) 3007-1593

approval from institutional review board (ERC approval number-14/25). Sample size was calculated using RaSoft sample size calculator, estimating a prevalence of 30%, and assuming a 95% confidence level with a 7% margin of error, the required sample size for this study was 165. Non-probability, Convenience Sampling was used as technique. Patients with new onset migraine or tension-type headache, experiencing heartburn or gastrointestinal distress for at least one month, aged between 25 and 45 years were included in the study. While, Known cases of chronic migraine (defined as headaches on 15 or more days per month for at least three months), Patients diagnosed with trigeminal cephalgia or other trigeminal autonomic cephalalgias, such as cluster headaches or hemicrania continua, Patients currently undergoing treatment for severe physical illnesses that might independently affect mental health and Known cases of psychiatric illnesses were excluded from the study. The patients were asked to fill pre-structured questionnaire containing three parts, part A had demographic details including age, gender, marital status, education and socio-economic status of participant, while part B had questions regarding comorbidities, frequency and intensity of presenting symptoms, consultation reasons etc. Part C contained DASS (depression, anxiety stress scale) 21 for the psychological assessment of participants.

Data was entered, sorted and analysed using SPSS Version 23.0. Categorical variables such as gender, SES, education were analyzed as frequency and percentages, while continuous variables such as age were analyzed in mean and standard deviation. The chi-square test was employed to assess the significance of differences between proportions. The t-test was used to evaluate mean differences between two independent samples. A p-value of <0.05 was considered statistically significant.

RESULTS:

Total 165 adult patients were recruited in the study with mean age of 40.7 ± 15.1 years; gender distribution indicated 44 (36.7%) male and 76 (63.3%) females. Education was reported as under matriculation by 63 (52%), under graduation was reported by 34 (28.3%) and post graduate was reported by 22 (18.3%) of participants. Socio-economic status was reported as poor, medium and good by 12 (10%), 56 (46.7%) and 52 (43.3%) of participants respectively. Comorbidities was reported as Hypertension in 42 (35%) and Diabetes mellitus in 74 (61.7%) of patients respectively. Medical intervention was reported as positive by 78 (65%) patients, categorized in pain killer consumption 27 (22.5%), acidity controlling medicines 29 (24.2%), counseling therapy 3 (2.5%) and alternate treatment 3 (2.5%) respectively.

The reason for consultation was reported as headache by 86(71.7%) of participants, while presenting complain was reported as headache by 38(31.7%), acidity by 32 (26.7%) and both by 26 (21.7%) of patients respectively. Duration of complain was categorized as 3-6 months, 6-12 months, 1-2 years and more than 2 years in 34(28.3%), 18(15%), 22(18.3%) and 36(20%) respectively. Most frequently reported associated issue was fatigue 21 (17.5%), sleep disturbances 10 (8.3%), nausea and bloating 5(4.2%) and poor concentration and dizziness in 4(3.3%) and 4 (3.3%) respectively.

Patients diagnosed with headache and acidity secondary to mental illness were 54 (45%), while consultation with psychiatrist was confirmed by 43 (35.8%) of patients. Reason for not consulting with psychiatrist was reported as fear of decision making in 8 (6.7%), financial crises in 6 (5%), less confidence on psychiatry consultants by 6(5%), self help was mentioned by 16(13.3%), while poor access at area was reported by 2(1.7%) patients respectively. (Figure 01)

Fig 01: Frequency of reasons provided by patients for not consulting with psychiatrist.

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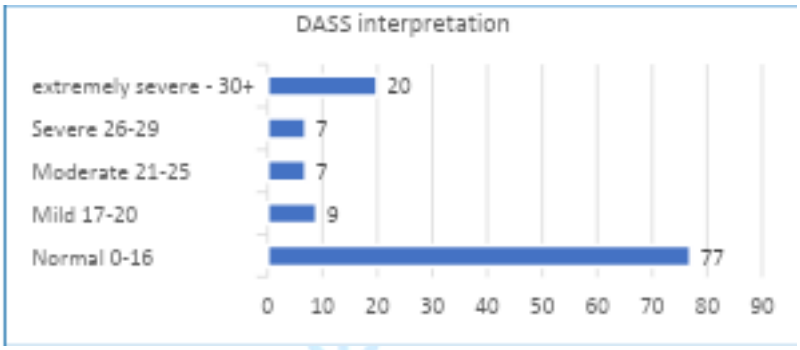
Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593



Depression anxiety stress scale indication reported 77(64.2%) of patients within normal ranges, 9 (7.5%) as mild depressed, 7 (5.8%) moderately depressed, 7 (5.8%) as severely depressed while 20 (16.7%) as extremely severe depression respectively.(Figure 02)

Fig 02: Depression, anxiety stress scale interpretation.



Study participants taking medicines for headache and acidity were categorized within normal DASS scoring 51 (30.9%), mild 2(1.2%), moderate 5(3%), severe 5(3%) and extremely severe in 15(9%) of patients with p-value of 0.1015. Pain killers were used by participants categorized as normal 23(13.9%), mild 2(1.2%), moderate 2(1.2%) only. While acidity medicines were used by patients categorized in normal DASS scoring of 23(13.9%), mild 1(%), moderate 1(0.6%), severe 3(1.8%) and extremely severe 1(0.6%). Counseling therapy was used by patients categorized in mild DASS scoring 2(1.2%), severe 1(0.6%) and alternate therapies were considered by patients from DASAS scoring of normal 2(1.2%), mild 1(0.6%) with over all p-value of <0.0005.

Headache was reported as presenting complain in patients categorized as normal 30(18.1%), mild DASS 5(3%), moderate 2(1.2%) and extremely severe 1(0.6%). Acidity was reported by patients in normal 26(15.7%), mild 2(1.2%), moderate 1(0.6%), severe 2(1.2%) and extremely severe 1(0.6%) with p-value of <0.0005.

Duration of presenting complain indicated higher incident of extremely severe DASS score in patients experiencing symptoms form 1-2 years with frequency of 7(4.2%), p-value of 0.329.

Positive association of headache and mental health reported extremely severe DASS scoring in 13(7.8%) with p-value of 0.003. (Table 01)

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Table 01: Association of DASS categories with reported symptoms and medications.

		DASS interpretation					
		Normal 0-16	Mild 17-20	Moderate 21-25	Severe 26-29	extremely severe - 30+	P-Value
Medicines for headache and acidity	Yes	51	2	5	5	15	0.1015
	No	22	6	2	2	5	
Type of medicines	pain killers	23	2	2	0	0	<0.0005
	acidity meds	23	1	1	3	1	
	Counseling therapy	0	2	0	1	0	
	Alternate treatment	2	1	0	0	0	
	Others	3	0	0	1	1	
Presenting complain	Headache	30	5	2	0	1	<0.0005
	Acidity	26	2	1	2	1	
	Both	8	1	2	3	12	
	Other	1	1	0	2	2	
Duration of presenting complain	3-6 months	25	2	1	2	4	0.329
	6-12 months	7	3	2	2	4	
	1-2 years	10	2	1	2	7	
	more than 2 years	26	2	3	1	4	
Headache associated with mental issues	Yes	25	5	6	5	13	0.003
	No	49	3	1	2	7	

DISCUSSION:

In psychosomatic medicine, the relationship between stress and mental health and headache and heartburn is a complicated but well-established field of research. There appears to be a significant mind-body connection as these symptoms are frequently reported in people who are experiencing high levels of psychological anguish. It is well recognized that stress and mental health conditions like depression and anxiety can worsen physical symptoms, which frequently makes diagnosis and treatment more difficult [10]. Stress is commonly associated with headaches, especially tension-type headaches and migraines. Frequent headaches can result from chronic stress-induced muscle tension, especially in the neck and scalp. In a similar vein, psychological variables can affect how pain is perceived, increasing sensitivity to pain stimuli. There is a clear correlation between emotional stress and neurological reaction, since migraineurs frequently report more episodes during stressful times [11-12]. However, heartburn—the burning feeling in the chest brought on by acid reflux—is also closely linked to stress and mental health. The risk of acid reflux is increased by stress since it can slow down digestion and cause the release of stomach acid. Furthermore, stress-related behaviors like smoking, drinking alcohol, and eating poorly might make gastrointestinal problems worse. According to studies, heartburn and other gastrointestinal issues are more common in those who suffer from anxiety and depression. The brain-gut axis, a communication network that connects the brain's emotional and cognitive centers with peripheral intestine activities, may be the cause of these changes in gut motility and sensitivity [13]. 165 persons, primarily female (63.3%), with an average age of 40.7 ± 15.1 years, made up the study cohort. A female-to-male ratio of 2–2.5:1 indicates that IBS is more prevalent in women than in men, according to earlier research that also identified a strong correlation between gender and the illness. This is in line with the results of our study, which showed that gender is

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ISSN: (e) 3007-1607 (p) 3007-1593

highly substantially associated with functional IBS (p = 0.001), with 89.6% of all instances of the illness being female respondents. Previous research that documented the beneficial long-term effects of physical activity-related therapies in IBS patients also linked functional IBS to physical activity. According to one such study, five of the nine IBS-specific parameters showed improvement [14]. In terms of education, more than half (52%) had completed less than matriculation, followed by undergraduates (28.3%) and postgraduates (18.3%). In terms of socioeconomic position, 10% were categorized as low, 46.7% as medium, and 43.3% as good. These results are consistent with earlier research showing that chronic health issues, such as headaches and gastrointestinal illnesses, are more common in people with lower socioeconomic level. Painkiller use was most prevalent (22.5%), followed by acidity-controlling drugs (24.2%), and the majority of patients (65%) reported seeking medical intervention. A lower percentage sought alternative therapies (2.5%) or counseling therapy (2.5%). Due to stigma or a lack of knowledge about mental health facilities, these treatment patterns point to a preference for pharmaceutical treatments over psychosocial approaches [11].

Only 35.8% of patients had seen a psychiatrist, despite the high frequency of psychiatric comorbidity. Financial limitations (5%), lack of trust in psychiatric consultants (5%), fear of making decisions (6.7%), self-help techniques (13.3%), and limited access to mental health facilities (1.7%) were among the obstacles to psychiatric consultation. These results highlight the necessity of improving access to psychiatric care and addressing stigma around mental health, especially in underprivileged areas [15].

The relationship between the brain and gut also explains why people who are under a lot of stress frequently get heartburn and headaches at the same time. The autonomic nervous system may be disturbed by emotional strain, which could result in dysregulation of body processes and raise the likelihood of somatic symptoms. Moreover, because pain and distress are cyclical, they can produce a feedback loop in which psychological suffering exacerbates physical symptoms. For instance, regular heartburn attacks or chronic headaches can cause sleep issues, irritation, and elevated anxiety, creating a vicious cycle that is hard to escape without a comprehensive treatment strategy [16-18].

64.2% of subjects had DASS scores that fell within normal levels, while 16.7% had severely severe depression. Notably, headache and acidity were more common presenting complaints among people with severely severe depression. This association emphasizes the somatic presentation of mental health illnesses by indicating that severe depressive symptoms may worsen or appear as physical symptoms like headache and acidity [19].

Painkillers and acidity-controlling drugs were more frequently used by those with really severe depression, according to an analysis of medical therapies in connection to DASS scores. This pattern raises the possibility that individuals with severe depressive symptoms may self-medicate in order to ease their physical suffering, which could result in a vicious cycle of untreated mental health conditions and excessive drug usage [20-22].

It has been demonstrated that stress management techniques including mindfulness, cognitive-behavioral therapy, regular exercise, and healthy lifestyle choices might lessen the frequency of heartburn episodes and headaches. Better results are seen in therapeutic settings when mental health issues are treated in addition to physical problems [23]. Therefore, it is imperative that medical professionals adopt a comprehensive strategy, acknowledging the vital role that mental health plays in physical health. It's critical to evaluate a patient's mental health and check for underlying stressors, mood disorders, or psychological trauma when they exhibit recurring headaches and heartburn [24].

Extremely severe DASS scores were more common in patients who had been exhibiting symptoms for one to two years, albeit this relationship was not statistically significant. The persistence of symptoms can lead to serious mental health issues, which highlights the significance of early management and intervention. In addition to preventing over-reliance on medicine and promoting long-term health and wellness, this comprehensive approach aids in determining the underlying causes. In summary, the interaction of stress, heartburn, headaches, and mental health emphasizes the significance of treating the patient as a whole. Understanding this link

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ISSN: (e) 3007-1607 (p) 3007-1593

enables more thorough treatment, which enhances physical and mental health results [25-26].

The cross-sectional form of this study makes it difficult to determine causal linkages. Furthermore, the use of self-reported data may add bias, and the results' generalizability may be impacted by the study's geographic setting.

CONCLUSION:

The study emphasizes the intricate relationship that exists between adult mental health issues, headaches, and acidity. The necessity for integrated healthcare systems that address both physical and mental health elements is highlighted by the high frequency of psychiatric comorbidity and the obstacles to psychiatric consultation. Longitudinal studies should be the main focus of future research in order to comprehend the causal links and efficacy of integrated treatment models.

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