

Headache-Related Disability among Undergraduate Students of Health Profession in Bangladesh: A Cross-Sectional Study

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Abstract

Background: Headache is one of the most common neurological disorders frequently complaints during medical curriculum. It has a major impact on the academic performance of undergraduate health professional students.

Objectives: The objective of the study was to determine the types of disability due to headache and the impact of headache among undergraduate students of health professions in Bangladesh.

Methods: The cross-sectional study was conducted through the purposive sampling technique. The study was carried out between July 2022 and June 2023. A headache disability index (HDI) questionnaire was used to assess the type of disability. Data was collected from 303 medical students, and the Statistical Package for Social Sciences (SPSS) version 25.0 was used for analysis.

Results: The participant's age mean \pm SD was 22.35 ± 2.163 . The majority of the participants (57.8%) attended from the age range between 18 and 22 years. The maximum number of participants were female (61.1%), and 87.1% were from urban areas. The majority of the students (19.8%) were from physiotherapy, and 66.7% were within normal weight. The majority of the participants (22.40%) had moderate-type disability. The association between gender of the participants and the severity of headache ($p = 0.001$) and between gender of the participants and disability ($p = 0.001$) was statistically highly significant. It was also observed a significant association ($p = 0.001$) between the severity of headache and disability of the participants.

Conclusion: The findings revealed that headache is a common complaint among undergraduate health professional students. The majority of the participants suffered from moderate disability due to headache in Bangladesh.

Keywords

Disability, Headache, Prevalence, Undergraduates, Bangladesh.

INTRODUCTION

Headache is the second most prevalent cause of disability globally. It is among the most frequently voiced complaints during medical program [1,2]. Many psychological and physical stresses can cause headaches, and medical students are more likely than the general population to experience these types of stresses [1]. Frequent headaches significantly affect whether or not students function academically, both in regards to learning sessions and exam performance. It has an impact on participation and quality of life, which may impede everyday activities and functioning [2-4].

Headache is one of the most prevalent disorders of neurological origin. The prevalence of headache is estimated that 50% of adults worldwide suffer from headaches [5]. People of any age, gender, level of education, socioeconomic background, or occupation may be affected [6]. Peripheral nociceptors are stimulated in response to tissue damage, injury, or improper activation of the peripheral or central nervous system's pain-producing pathway, visceral distension as well, or other events that might cause headache pain [4,7].

Numerous epidemiological research investigations



have demonstrated that among undergraduate medical students, headache instance is particularly prevalent and associated with vulnerability [1,3]. Sleep was found to be the most prevalent component that relieves headaches, with stress being the main cause of headaches [8]. The prevalence of headaches varies between 5 and 40% in different countries [3]. It is stated that 47% of medical students in Brazil reported having headaches. In a related study, the prevalence was considerably greater, with 16% reporting frequent headaches [9]. In Greece and Turkey, the prevalence of migraine types of headaches is 2.4% and 12.4%, respectively [10].

There is a correlation between disability, social restriction, participation, and headache [11]. Higher degrees of disability were triggered by headaches [9]. Disability substantially inhibits functional behaviors and related essential daily activities. It also involves a focus on mental, physical, or psychological functioning. It also encompasses every facet [12]. Depression, which is defined by a lack of interest in or enjoyment from daily activities, develops from disability [13]. Since exhaustion, tension, and anxiety were the most frequent reasons for headaches. Because of their lifestyle, students were significantly more likely to suffer from these illnesses. Headaches can cause students to miss out on important study time, perform badly in class, and have other unfavorable outcomes [14].

The students of the health professionals are supposed to have higher stress levels, pressure to perform well, a longer educational pathway, and an immense amount of responsibility for their future careers. Neurological problems like headaches are commonly ignored in a developing country like Bangladesh. The objective of the study was to determine the types of disability due to headache among the undergrad students of health professions and the impact of headache among undergraduate students of health professions in Bangladesh.

METHODOLOGY

The study was a descriptive cross-sectional study carried out among the students of health professions in Bangladesh. The purposive sampling technique was employed to determine what students were experiencing from headache. The population of the study was from several government and non-government medical colleges, dental colleges, physiotherapy colleges, nursing colleges, and Unani and Ayurvedic Medical Colleges of Bangladesh. The research was carried out from July 2022 to June 2023. In this study, the researcher also considered eligibility criteria, which helped the researcher select suitable and appropriate participants for this study.

Inclusion criteria were: both male and female with an age range of between 18 and 30 years; undergraduate students of medical, dental, physiotherapy, nurses, occupational therapy, and Ayurvedic who had headache. Exclusion criteria were: patients with mental or psychological disorders and students who refused to participate in the study.

Data was collected by using a structural-type questionnaire. The survey was designed taking into account the characteristics and goals of the current investigation. The questionnaire had three parts. The first part contained questions on socio-demographic information. The second part included questions about general health-related information, and the third part contained a headache-related questionnaire by the headache disability index (HDI). There was a questionnaire for acquiring the participant's demographic information, including age, sex, BMI, marital status, living area, educational status, student type, type of headache, and severity of headache. The researcher collected data through an individual interviewing process in a calm environment.

The Headache Disability Inventory (HDI) is a self-reported, 25-item headache disability quantify that has good quality internal consistency reliability and strong content validity. The scale is easy to complete by the patient and is simple to attain and interpret. It has two subscales deliberate to assess the psychological and functional disability status of headache. Each statement has three possible answers: "yes" (four points), "sometimes" (two points), or "no" (zero points). Consequently, an utmost score of 100 points reveals severe self-apparent headache-related disability [15,16].

The collected data were inputted into a computer and analyzed using Statistical Package for Social Sciences (SPSS) version 25.0 and Microsoft Office Excel 2013. Categorical variables were presented as percentages and frequency, and continuous variables as mean and standard deviation (SD), and the Chi-square test was used to determine the level of significance between two or more variables. The level of rejection of the null hypothesis for all analyses was $p < 0.05$. The result of this study consisted of quantitative data. Before participating, patients got complete information about the research objectives and protocol and provided signed informed consent. Administrative entities of the Saic ethics committee and the Ethical Review Board (ERB) authorized the study. The registration number is SCMST/PT/ERB-2017-18/1-2023/16.

RESULTS

In this observational study, three hundred and three people with undergrad students of health professionals completed the survey. The demographic and health-related factors of the participants are summarized in Table 1. The mean age \pm SD of the participants was 22.35 ± 2.163 . The majority of the participants (57.8%) were from the age range between 22 and 22 years. Out of 303 respondents, the majorities (61.1%) were females, and 88.1% (267) were unmarried. The maximum respondents 87.1% were from urban areas, and 50.2% respondent's residency was home. The study found (78.50%) of the participants belonged to the nuclear family, and also (18.80%) of the participants were overweight.

It was also found 57 (18.80%) participants were overweight. Among the 303 respondents, the majority 19.8% of them were participated physiotherapy students. The majority of the participants 26.1% were suffering from vision problems. The maximum 65.7% of the participants had headache for more than one year, but only 23.4% were consulted with doctors, and 11.9% took medications for this issues.

The study revealed that the majority of the participants 22.40% (68) had moderate-type disability, 21.80% (66) had mild disability, 18.20% (55) had severe disability, 12.90% (39) had complete disability, and 24.80% (75) found no disability due to headache. The findings showed that the mean \pm SD was 35.02 ± 26.690 . About the frequency distribution of the participants by gender and severity of headache, it was found that among the male the maximum 47.45% (56) of the participants had moderate-type of headache. In the case of female 185 participants, it was found that the maximum 51.35% (95) of the participants had moderate-type of headache. The association between gender of the participants and the severity of headache was statistically highly significant ($\chi^2 = 13.748$, $df = 42$, $p = .001$).

Regarding the frequency distribution of the participants by gender and disability, it was found that out of 118 male participants, the maximum 41.17% (28) had moderate disability and 39.39% (26) had mild disability due to headache. In the case of female, the majority 78.18% (43) of the participants had severe disability, 58.82% (40)

Table 1: Socio-demographic characteristics and General Health Related Factor of the participants (n=303).

Demographic	%(n)	Demographic	%(n)	Demographic	%(n)
Age		BMI		Student type	
Mean age ± SD	22.35±2.163	Underweight (<18.5)	12.5% (38)	MBBS	17.8% (54)
18-22 years	57.8% (175)	Normal weight (18.5-24.9)	66.7% (202)	Physiotherapy	19.8% (60)
23-27 years	39.3% (119)	Over weight (25.0-29.9)	18.8% (57)	Dental	16.8% (51)
28-32 years	3% (9)	Obese (≥ 30)	2% (6)	Occupational therapy	15.2% (46)
Gender		Family type		Nursing	17.2% (52)
Male	39.9% (118)	Nuclear	78.5% (238)	Ayurvedic	13.2% (40)
Female	61.1% (185)	Extended	21.5% (65)	Residential area	
Marital status		Residency		Urban	87.1% (264)
Unmarried	11.9% (36)	Hostel	49.8% (151)	Semi-urban	10.2% (31)
Married	88.1% (267)	Home	50.2% (152)	Rural	2.7% (8)
General Health Related Factor					
Disease of Participants		Duration of sufferings		Severity of headache	
Cardiovascular	0.7% (2)	1 month	12.9% (39)	Mild	35.6% (108)
Gastrointestinal	3.3% (10)	6 month	8.9% (27)	Moderate	49.8% (151)
Neurological	1.7% (5)	1 year	12.5% (38)	Severe	14.5% (44)
Respiratory	4.6% (14)	>1 year	65.7% (199)	Doctor visit for headache	
Vision Problem	26.1% (79)	Frequent of headache		Consult with doctor	23.4% (71)
Reproductive	0% (0)	Every day	5% (15)	Not visit to doctor	76.6% (232)
Unknown	2.3% (7)	1 per week	26% (80)	Medication for headache	
Normal	66.3% (201)	2-3 per week	24.4% (74)	Take medication	11.9% (36)
		1 per month	44.2% (134)	No medication	88.1% (267)

Table 2: Frequency distribution of the participants by gender and severity of headache.

Gender of the participants	Severity of headache				χ^2	df	p
	Mild	Moderate	Severe	Total			
Male	54 (45.76%)	56(47.45%)	8 (6.77%)	118 (38.94%)	13.748	42	.001
Female	54 (29.18%)	95(51.35%)	36 (19.45%)	185 (61.06%)			
Total	108 (35.64%)	151(49.83%)	44 (14.52%)	303 (100%)			

Table 3: Frequency distribution of the gender and disability type of the participants.

Disability of the participants	Gender of the participants			χ^2	df	p
	Male	Female	Total			
Normal	42 (56.00%)	33 (44.00%)	75 (24.75%)	19.011	43	.001
Mild	26 (39.39%)	40 (60.60%)	66 (21.78%)			
Moderate	28 (41.17%)	40 (58.82%)	68 (22.44%)			
Severe	12 (21.81%)	43 (78.18%)	55 (18.15%)			
Complete	10 (25.64%)	29 (74.35%)	39 (12.87%)			
Total	118 (38.94%)	185 (61.05%)	303 (100%)			

Table 4: Distribution of the student type and disability type of the participants.

Type of Student	Type of disability					Total n (%)	χ^2	df	p
	Normal	Mild	Moderate	Severe	Complete				
MBBS	16 (29.62%)	14 (25.92%)	11 (20.37%)	7 (12.96%)	6 (11.11%)	17.8% (54)	45.836	28	.018
Physiotherapy	17 (28.33%)	10 (16.66%)	15 (25.0%)	11 (18.33%)	7 (11.66%)	19.8% (60)			
Dental	18 (35.29%)	10 (19.60%)	9 (17.64%)	8 (15.68%)	6 (11.76%)	16.8% (51)			
Occupational therapy	11 (23.91%)	19 (41.30%)	7 (15.21%)	6 (13.04%)	3 (6.52%)	15.2% (46)			
Nursing	12 (23.07%)	20 (38.46%)	10 (19.23%)	7 (13.46%)	3 (5.76%)	17.2% (52)			
Ayurvedic	12 (30.0%)	10 (25.0%)	13 (32.5%)	5 (12.5%)	0 (0%)	13.2% (40)			
Total	86 (28.38%)	83 (27.39%)	65 (21.45%)	44 (14.52%)	25 (8.25%)	303 (100%)			

Table 5: Association between severity of headache and disability of the participants.

Headache Severity	Type of disability					Total n (%)	χ^2	df	p
	Normal	Mild	Moderate	Severe	Complete				
Mild	52 (48.14%)	22 (20.37%)	18 (16.6%)	10 (9.25%)	6 (5.55%)	108 (35.64%)	63.551	48	.000
Moderate	20 (13.24%)	39 (25.82%)	38 (25.16%)	29 (19.20%)	25 (16.55%)	151 (49.83%)			
Severe	3 (6.81%)	5 (11.36%)	12 (27.27%)	16 (36.36%)	8 (18.18%)	44 (14.52%)			
Total	75 (24.75%)	66 (21.78%)	68 (22.44%)	55 (18.15%)	39 (12.87%)	303 (100%)			

had mild and moderate disability due to headache. The association between gender of the participants and disability was found statistically highly significant ($\chi^2=19.011$, $df = 43$, $p=.001$) (Table 3).

In relation to the frequency distribution of the participants by student type and disability, the study found the majority of 25.92% (14) MBBS students had mild headache, 25.0%(15) physiotherapy students had moderate headache, 26.82% (11) dental students had mild headache, 41.30%(19) occupational therapy students had mild headache, 38.46% (20) nursing students had mild headache, and 32.50% (13) ayurvedic students had moderate headache. Among the participants, it was observed that 28.38% (86) had no headache-related disability. The observed Chi-square value was 45.836 and the p value was 0 .018, so the result was statistically significant ($\chi^2=45.836$, $df = 28$, $p = 0.018$) (Table 4).

The frequency distribution of the participants the general health-related factor (severity of headache) with the type of disability, it was observed (48.14%) had no disability. The study found that 36.36% (16) of the participants had severe disability and 18.18% (8) had complete disability due to headache. It was revealed that the observed Chi-square value was 63.551 and the p value was .000, so the result was highly significant, indicating association between the severity of headache of the participants and disability of the participants ($\chi^2 = 63.551$, $df = 48$, $p = .000$) (Table 5).

DISCUSSION

The study aimed to determine the types of disability due to headache among and impact of headache among undergraduate students of health professions in Bangladesh. Among the 303 students, sixty percent of participants were female. The proportions of female students were higher than those of male students. The majority of the participants (57.8%) were from the age range between 22 and 22 years. The mean age and standard deviation (SD) of this study were 22.35 ± 2.16 . Noor, Sajjad, and Asma conducted a study involving 430 medical students in Karachi. The participants' mean age was 20.64 years, with a standard deviation of 1.68. The female participants also were higher than male participants. In that study, 86.5% of participants were female and 13.4% were male [17].

Among the 303 respondents, the majority 19.8% (60) of them were participated physiotherapy students. The study revealed that 26.10% of medical students are suffering from eye disease. According to a headache-related study, 12.7% of the respondents reported having concurrent conditions. They also mentioned that the prevalence of certain diseases, maybe psychological problems, and anemia were higher among headache-affected students [18]. The maximum respondents (98.0%) were from semi-urban areas, and 50.2% of respondent's residency was home. Another study found that 33% of participants lived in rural areas, while 67% lived in urban areas [19]. It was shown that 88.10% of study participants were single. Petersen et al. conducted a study where the majority 71.0% of the participants was married and they had lost their jobs totally or in part because of the cluster headache in the past ten years [20].

It was found that 12.90% of participants were suffering from headache for 1 month, 8.90% of participants suffered from headache for 6 months, 12.50% of participants were suffering from headache for one year, and 65.70% of participants suffered from headache more than 1 year. According to Almeida et al., approximately 93.5% of the respondents claimed had a headache over the last 3 months, 28.5% had at least once a week, and 7.4% had suffered from headache trice weekly [9].

It was revealed that 35.60% of participants had a mild headache, 49.80% had a moderate headache, and 14.50% had a severe headache. In a cross-sectional study of students from two Karachi medical institutions, the most severe headache characteristics were 57.4% as moderate intensity [17]. Thiagarajan et al. performed a study with 374 Malaysian medical students, where 42% of them claimed had headaches [2].

The study found that 10.60% of participants with headache caused interference in the relationship between family and friends, 51.80% of participants faced difficulty reading, and 21.50% of participants sometimes faced difficulties reading. A recent study was done on psychological factors associated with headache where 26.0% participants had lack of satisfaction with studies, 12.3% had dissatisfaction with family life, 16.3% faced poor financial situation, 48.0% had work stress, 62.60% had sleep disturbance, 29.5% had depression, 23.0% had anxiety, and 45.8% participants had irritability [21]. It was found that 15.80% of participants had less socialization due to headache. The capacity to carry out regular home tasks was diminished by 87% during a cluster headache attack, and involvement in family social activities was typically diminished [20]. It was shown that 49.50% of participants feel handicapped, and 27.10% of participants sometimes feel handicapped because of headache. The author study evaluated that 55% of the students with migraines had a significant handicap [22]. The study showed that 20.1% of participants claimed they feel frustrated, and 21.8% of participants feel frustrated sometimes because of headaches. Another study observed that 32.5% of participants go through depression due to migraine and headache [14].

The study showed that 15.20% of participants felt desperate, and 20.10% sometimes felt desperate because of their headache. It is also found that 45.50% of participants felt irritable, and 24.10% sometimes felt irritable because of headache. A recent study found that 23.0% of participants had anxiety, and 45.8% of participants felt irritability due to tension-type headache [21]. Among the 303 respondents, the majority 19.8% (60) of them were physiotherapy students. One similar study found that the prevalence of headache was higher in MBBS students. The prevalence of headache might be linked with the socio-economic status and academic years of the medical students [4].

The results of this study found a significant association between gender of the participants and disability. The disability is highly associated ($p = 0.02$) with female gender [9]. Regarding the proportion of headache and gender, the study found females to always be more significant than males. The women-to-men ratio was observed at 1.6:1 for all types of headaches [23]. The study found a highly significant association between the severity of headache of the participants and disability. One study found a significant difference in the types or severity of headache with disability [10]. The headache hampered daily activities and stopped most of the student's daily performances. It missed out on their lesion and stopped studies, which led to disability [3]. The short periods of study duration and miniature sample size are drawbacks of the study. Hence, it is highly advised to raise the number of samples throughout Bangladesh. The study's findings may not be generalizable to the entire population of Bangladesh, particularly considering the gender, short duration of study, and geographical biases.

CONCLUSION

The findings of this cross-sectional study revealed that headache is a common complaint among undergraduate health professional students in Bangladesh. It is observed that the majority of the

participants had disability due to headache. The results found that the majority of the participants suffered from moderate disability due to headache. Physical, mental, social, and academic performances were reported to be hampered by headaches in the respondents. Early diagnosis and treatment of the students with headache is crucial to enhance the scholar's performance and wellbeing as well.

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