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## FREQUENCY OF IRRITABLE BOWEL SYNDROME IN COLLEGE STUDENTS

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**Background:** This study was carried out to investigate the presence of irritable bowel syndrome (IBS) in college students and compare its distribution in the non-medical college and medical college students. **Methods:** We collected data from 508 students by inviting them to fill out a questionnaire based on Rome II criteria for the diagnosis of IBS from November 2001 to February 2004. Two major cities Karachi and Bahawalpur were selected and it was coordinated by the section of Gastroenterology, Department of Medicine, Aga Khan University Hospital and Quaid-e-Azam Medical College, Bahawalpur. **Results:** A total of 508 subjects with males 43 % (220/508) and female 57 % (288/508) mean age  $22 \pm 2.8$  years responded to the questionnaire. The overall frequency of IBS among college students was 34 % (171/508). There were 41 % (107/263) non-medical college and 26 % (64/245) medical college students with IBS. Abdominal pain was present in 100 % (171/171) with altered frequency of stool in 58 % (100/171) ( $p < 0.001$ , OR 12.5, CI 7.9-20.0) of students with IBS. The medical advice was sought by 38 % (65/171) in IBS group with 46 % (30/65) non-medical college school and 54 % (35/65) medical student ( $p = 0.001$ , OR 1.9, CI 1.3-2.8). **Conclusion:** IBS is common in younger adult population of Pakistan. Its prevalence is higher in non-medical college students but health care seeking behavior was more common in medical students.

**Key words:** Irritable Bowel Syndrome students, youngs, health seeking behavior

### INTRODUCTION

Irritable bowel syndrome (IBS) is a functional bowel disorder comprising abdominal pain associated with defecation or a change in bowel habit with features of disordered defecation and distension in the absence of any demonstrable abnormality. The diagnosis is based on clinical findings and the exclusion of other disorders.<sup>1</sup> IBS symptoms are very common, occurring in 15 % of the general population. Fewer than 20 % of these individuals, however, seek medical advice for their symptoms. IBS accounts for 5 % or more of attendances to general practitioners and 20-50 % of referrals to gastroenterologists. It is generally recognized that irritable bowel syndrome (IBS) occurs more frequently in women than men.<sup>2-3</sup> The prevalence in young, middle-aged and elderly adults is similar,<sup>4</sup> although some clinical studies have noted a predominance of IBS in those under the age of 25 years.<sup>5</sup> Studies from Thailand,<sup>6</sup> Singapore,<sup>7</sup> and Hong Kong,<sup>8</sup> have reported prevalence rates of 4.4%, 2.3% and 6.6%, respectively. In previous studies IBS like symptoms were more frequently experienced by males who out-numbered females. Also, the mean age of patients in these studies did not vary between sexes.<sup>9-10</sup> The aim of the present study was to determine the prevalence of symptoms compatible with a clinical diagnosis of IBS and its distribution in apparently healthy Pakistani non-medical college students and medical college students.

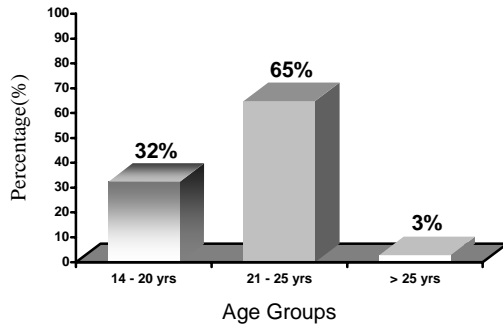
### MATERIAL AND METHODS

A standardized self-report questionnaire was administered to a population of apparently healthy adults consisting of non-medical college that included first to fourth year. The first 2 years belonging to Pre-Med/Engineering and 3<sup>rd</sup>-4<sup>th</sup> years for Bachelor of Arts, Commerce and Science (B.A/B.Com/B.Sc) studies and medical students located in Karachi and Bahawalpur from November 2001 to February 2004. Several local general practitioners well versed in the Rome II criteria for IBS participated in this study.<sup>11</sup> The questionnaire evaluated demographic characteristics, general gastrointestinal (GI) and lower GI symptoms, comprising items from the Rome II criteria. Data was collected from 508 students. Institutions in two major cities including Karachi and Bahawalpur were selected. Other aspects of inquiry also included health seeking behavior of the subjects.

The questions were coded for analysis and data handling. Comparison between groups was assessed using the chi-squared test and Fischer's exact test with the measure of association quoted as odds ratio (OR) with a 95 % confidence interval (CI). Independent sample t-test was used to compare the mean among two groups. All p value were two sided, p-value less than 0.05 was considered statistical significant. Data were analyzed by using statistical package for social science (SPSS) version 11.5.

**RESULTS**

A total of 508 students with males 43 % (220/508) and female 57 % (288/508) age range 16-35, mean age 22 ± 2.8 years responded to the questionnaire (Fig 1). Non-medical college students comprised of 52 % (263/508) and medical college students 48 % (245/508).



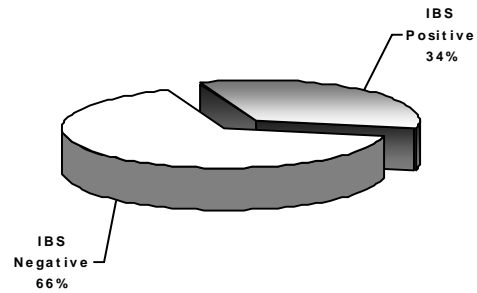
**Figure-1. Age distribution of students**

The frequency of IBS was 36 % (79/220) in males and 32 % (92/288) in females (Table 1). There were 41 % (107/263) non-medical college students and 26 % (64/245) medical students with IBS. The overall prevalence of IBS among students was 34 % (171/508) (Fig 2). There was a statistically significant difference in the number of students in these two groups (p=0.001, OR 1.9, 95% CI 1.3 – 2.8). The mean age of IBS positive was 21 ± 2.5 years range 16-30 and IBS negative 21 ± 2.7 years range 16-35. There was no statistically significant difference in the mean age of students with IBS and in non-IBS population.

**Table-1: Distribution of students**

Gender	Irritable bowel syndrome negative		P value	Irritable bowel syndrome positive		P value
	Non-Medical Student	Medical Student		Non-Medical Student	Medical Student	
Female	80	116	0.017	55	37	0.416
Male	76	65		52	27	
Total	156	181	337	107	64	171

Abdominal pain was present in 100 % (171/171), altered frequency of stool in 58 % (100/171) (p< 0.001, OR 12.5, CI 7.9-20.0), altered consistency of stool in 54 % (92/171) (p< 0.001, OR



4.1, CI 2.8-6.1) and bloating in 40 % (69/171) (p< 0.001, OR 3.3, CI 3.3-8.1) of students with IBS.

**Figure-2: Frequency of irritable bowel syndrome in students**

The medical advice was sought for these symptoms by 38 % (65/171) in IBS group as compared to 24 % (82/337) in non-IBS (p=0.001, OR 1.9, CI 1.3-2.8). Age and sex did not influence health care seeking behavior.

The mean age of IBS positive non-medical college was 21± 3 years as compared to 22 ± 1.6 year of medical student while the mean age of IBS negative non-medical was 21 ± 3.5 year as compared to 22 ± 1.7 year of medical student with p= 0.001. The medical advice was sought by 38 % (65/171) in IBS group with 46 % (30/65) non-medical and 54 % (35/65) medical student as compared to 24 % (82/337) in non-IBS with 12 % (10/82) non-medical and 88 % (72/82) medical students with (p=0.001, OR 1.9, CI 1.3-2.8).

**DISCUSSION**

The present study suggests that symptoms compatible with IBS are common among our apparently healthy students. The IBS prevalence rate of 34 % in this study is much higher than the reported prevalence rates from the neighboring countries such as Thailand and Singapore with 4.4 and 2.3 %, respectively.<sup>6-7</sup> However, the frequency of IBS in studied group does not necessarily reflect that of general population. The reason for this discrepancy may be that the studied population consisted of students who under stress are more aware of somatic symptoms. IBS symptoms were reported more commonly by males but this was not statistically significant. This finding is consistent with previous regional studies.<sup>9-10, 12</sup> Males with IBS appear to be more forth coming with their symptoms as compared to females. This is attributed to female natural reluctance in Asian cultures.

There was a significant difference among subjects with different education level, with a trend of higher prevalence of IBS in those with non-medical education as compared with medical school students (p=0.001). This might be attributed to the

fact that the latter group has qualified for a profession while the former has yet to experience the various qualifying stages. Syed et al found 4 % of the patient suffering from anxiety related disorders on studying the clinical and demographic characteristics of psychiatric inpatients admitted via emergency and non-emergency routes at a university hospital in Pakistan.<sup>13</sup> The mean age of non-medical student with IBS was lower than that of IBS positive medical student though the age range was similar. However, these are preliminary results that need replication to determine their generality. In a recent study of stress in medical students more than 90% of the students admitted to being stressed at one time or another, boys showing more tendency than girls.<sup>14</sup> A significant proportion of medical students with IBS sought medical advice. Presumably, these individuals had a lower threshold when it came to the decision of consulting a doctor and did not resort to self-medication when symptoms were severe. Abdominal pain was present in all of our cases. This is consistent with Talley et al who reported that severity and duration of pain were positive predictors of healthcare seeking for IBS.<sup>15</sup> All young students with IBS are likely to seek an initial medical care mostly from primary care physician. This implies that much energy should be spent with these young students with IBS to dispel worry and aid in coping with the symptom.

### **CONCLUSION**

There is a high frequency of Irritable Bowel Syndrome in non-medical college students but health seeking behavior is more common in medical students. However, the results of this study need to be confirmed in a larger multi center study.

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