

# **Prevalence of Irritable Bowel Syndrome (IBS), Migraine and Co-existing IBS-migraine in Medical Students**

Dr Rukhsana Parvin  
Associate Professor  
Department of Medicine  
Enam Medical College & Hospital

1. Irin Perveen, Professor, Department of Gastroenterology, Enam Medical College & Hospital, Dhaka, Bangladesh
2. Madhusudan Saha, Associate Professor, Department of Gastroenterology, North East Medical College, Sylhet, Bangladesh.
3. Md.Shafiqul Bari, Associate Professor, Department of Medicine, Sylhet MAG Osmani Medical College, Sylhet.
4. Md. Nazmul Huda, Associate Professor, Department of Neurology, Enam Medical College & Hospital, Dhaka, Bangladesh.
5. Mridul Kanti Ghosh, Research Medical Officer, UChicago Research Bangladesh.

# Introduction

- Irritable bowel syndrome (IBS) is a relapsing functional bowel disorder in which abdominal pain or discomfort is associated with defecation or a change in bowel habit.
- In western countries, the prevalence of IBS is 15-24% in the general population.<sup>1</sup>
- Migraine is a common headache disorder with a lifetime prevalence of 13% in men and 33% in women.<sup>2</sup>

- Irritable bowel syndrome (IBS) and migraine frequently co-exist.
- A meta-analysis showed that overall IBS patients are at risk to have coexisting headache with an estimated OR of 2.7 (CI 2.3–3.1).<sup>3</sup>

- Stress is a major contributing factor for both.
- The influence of stress on symptom occurrence and severity seems to be associated with hyperactivity of the hypothalamic-pituitary-adrenal axis.

- These pain related disorders apparently share many similarities like recurrent nature, female preponderance, familial association and frequent association with psycho-somatic comorbidities.

# Objective

- To evaluate the prevalence of migraine, IBS and co-existing IBS and migraine among medical students.

# Materials and Methods

- This cross-sectional questionnaire-based study was conducted among the students of four medical colleges during the period July to December 2013.
- Migraine was defined according to International Headache Society criteria (IHS).
- IBS was defined by both Asian criteria and Rome III criteria.

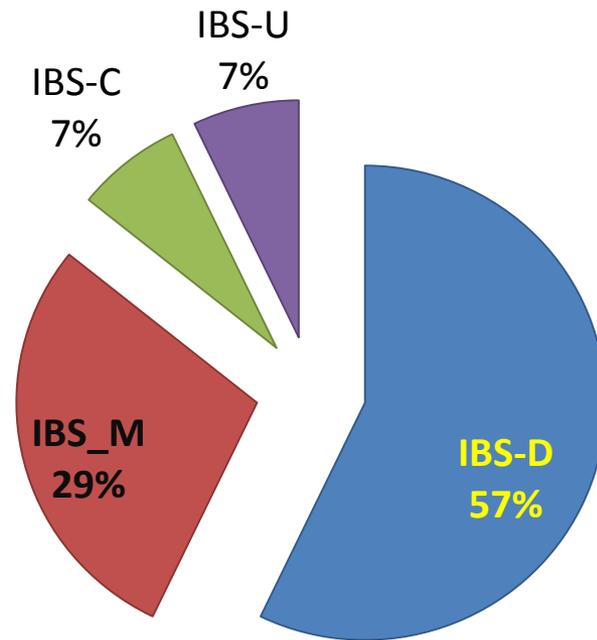
- Statistical analyses were done using SPSS version 20.0 and the level of significance was set at  $P \leq 0.05$ .
- Ethical clearance was obtained from appropriate authority.
- Verbal consent was taken after proper explanation.

# Results

- A total of 293 students volunteered in the study (male 177, female 116; preclinical 142, clinical 151).
- Fourteen (4.78%, 11 male, 3 female,  $p=0.175$ ) students met the criteria for IBS with comparable prevalence among preclinical and clinical (4.2% vs. 5.3%,  $P=0.787$ ) students from both private and government institutions. (2.1% vs. 7.2%,  $P=0.055$ ).

# IBS...

- IBS-D was the most prevalent subtype (n=8, M=6), next common was IBS-M (n=4, M=3).
- Feeling of incomplete evacuation (n=10), frequent motion (n=7), straining (n=7) and bloating (n=7) were more prevalent symptoms besides abdominal pain relieved by defecation (n=11).
- Fifty percent (n=7) IBS subjects consider their bowel habit as normal.



## IBS-variants

# IBS...

- No significant difference was noted in the different bowel symptoms among male and female IBS subjects.
- 28.6% students with IBS consulted a physician for their bowel problem.

# IBS...

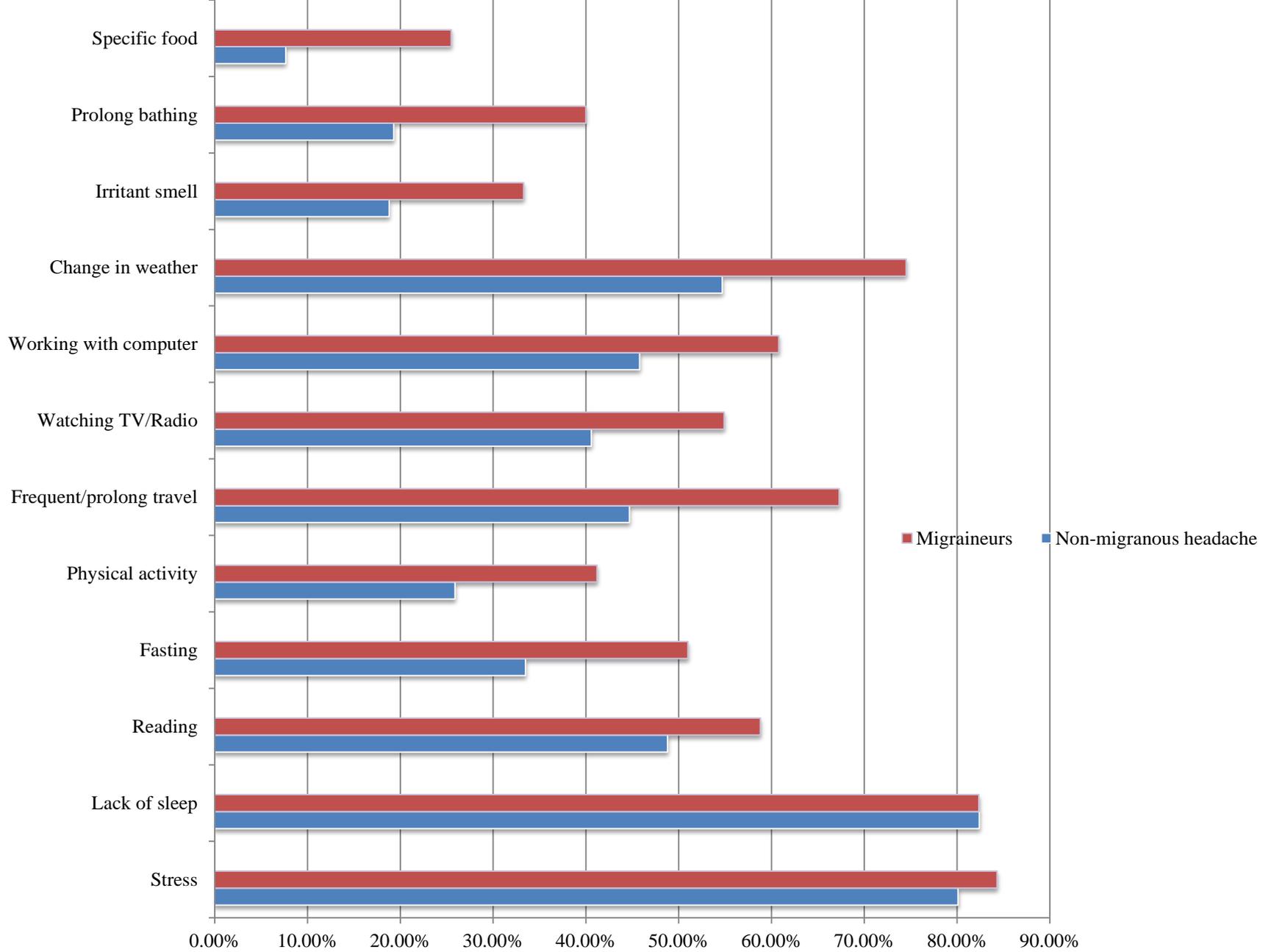
- In univariate analysis BMI is significantly less in IBS subjects ( $P=0.007$ ), but in multivariate analysis students of government institutions were found 2 times more vulnerable to IBS than private institutions ( $P=0.399$ ).

# Migraine...

- Among the 221 (75.4%) students with headache, only 83 (37.6%) had frequent attacks.
- Fifty one (17.4%, 20 male and 31 female,  $P=0.001$ ) met the IHS criteria for migraine, with comparable prevalence among preclinical and clinical students (16.2% vs. 18.5%,  $P=0.645$ ).
- Ninety percent ( $n=46$ ) migraineurs had accompanying aura.

# Migraine...

- Common triggers were stress (84.3%), lack of sleep (82.4%), frequent/prolonged travelling(67.3%), changes in weather(74.5%), reading(59%), working with computer(60.2%) and watching TV/listening Radio(55%).



# Migraine...

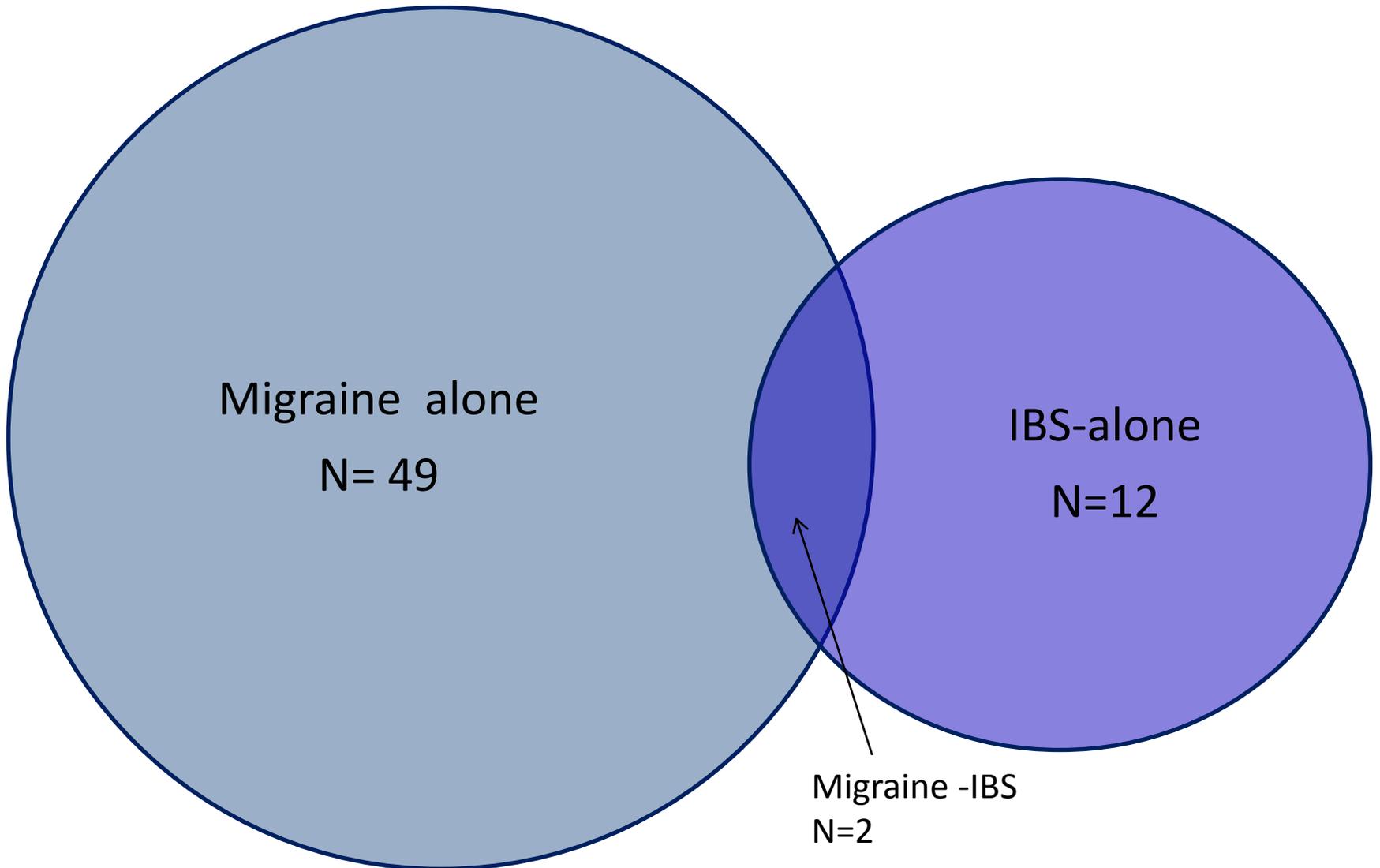
- Thirty one (60.2%) migraine patients suffered frequent attacks and 12 (23.52%) had migraine-associated frequent disability.

# Migraine...

- In multivariate analysis with sex, family income, BMI, preclinical students and institution , female sex was found as only independent predictor for migraine (OR=3.568, 95% CI =1.555–8.190, P=0.003).

# IBS & Migraine

- Headache was highly prevalent in IBS (71.43%) but only two female students with IBS-D (14.3%) had concomitant IBS and migraine.



Migraine alone  
N= 49

IBS-alone  
N=12

Migraine -IBS  
N=2

# Discussion

- IBS and migraine affect approximately 10-20% of the general population usually young adults.<sup>4</sup>
- More common in the west than east.
- IBS was reported in migraine patients in periods between the attacks.

# Migraine...

- A study conducted among medical students in the University of Lagos, Nigeria showed that prevalence of migraine was 6.4%.<sup>5</sup>
- Another study found that prevalence has been increased with number of studying years.<sup>6</sup>

# Migraine...

- A study in Benin found that prevalence of migraine in medical students is lower comparing with that of general population.<sup>7</sup>
- The prevalence of migraine in our general population is 26%.<sup>8</sup>
- In our study, prevalence of migraine was 17.4%.

# IBS...

- An Iranian study reported a higher prevalence of IBS among medical students (12.6%) than their other sections of general population.<sup>9</sup>
- Reported prevalence of IBS in our general population varies from 7.7–12.4%.<sup>10</sup>
- In this study, prevalence of IBS is 4.78%.

# IBS and Migraine...

- A study found that 24% of 1,413 migraineurs had IBS, and even 17% of these migraineurs were diagnosed with IBS according to the Rome II criteria.<sup>11</sup>
- A study in Korean migraine patients revealed high numbers of functional GI symptoms, of which IBS related symptoms were the most common.<sup>12</sup>
- In this study 14.3% subjects had both IBS and migraine.

# Limitations of Study

- Sample size was small.
- This was a cross-sectional study, so the cause and effect relationship were not clarified.
- Results could not be generalized as it was done in a specific population.
- Appropriate investigations could not be included.

# Conclusion

- IBS and concomitant migraine–IBS prevalence were found to be low in our medical students, but migraine prevalence corresponds to other countries as well as in medical students.
- Further larger studies should be planned to have more in-depth knowledge of migraine and IBS in the student population.

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Thank You

