Gender Role in Irritable Bowel Syndrome: A Comparison of Irritable Bowel Syndrome Module (ROME III) Between Male and Female Patients

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Background/Aims
Irritable bowel syndrome (IBS) is a widespread chronic health condition which is significantly more prevalent in women. We conducted a gender difference analysis by comparing findings of men and women to determine whether any significant differences exist or not.

Methods
This single-center study was conducted in Tehran, Iran during 2009-2010. IBS was diagnosed on the basis of Rome III criteria. A simple “10 point” objective questionnaire was used.

Results
A total number of 144 IBS patients including 44 (30.6%) males and 100 (69.4%) females with the mean age of 37.50 ± 11.50 years, were assessed. The only differently observed symptom was nausea which was significantly more prevalent in females (49% vs 18.2%, \( P < 0.001 \)). The commonest subtype of IBS in male patients was diarrhea predominant IBS (38.6%); while, constipation predominant IBS was the most frequent type among females (38%). Moreover, the frequency of loose, mushy or watery stools within the last 3 months was significantly higher among males (2.11 ± 1.67 vs 1.37 ± 1.50, \( P = 0.009 \)).

Conclusions
We report that gender is important in IBS. Although qualitative comparison of different subtypes of IBS between male and female failed to meet the statistically significant level, the answers to the corresponding questions of ROME III IBS module suggest the higher prevalence of bowel movements and looser stool in males. Moreover, nausea was reported more often by females.

(J Neurogastroenterol Motil 2012;18:70-77)

Key Words
Gender identity; Irritable bowel syndrome; Questionnaire; ROME III
**Introduction**

Irritable bowel syndrome (IBS) is a widespread chronic health condition, characterized by a defined symptom complex in the absence of any biochemical or pathological structural abnormalities. The novelest symptom criteria are the Rome III criteria. Accordingly, criterion fulfilled for the last 3 months with symptoms begun at least 6 months prior to diagnosis, would make IBS diagnosis complete. IBS is classified as diarrhea-predominant, constipation predominant, or alternating based on the predominant bowel habit.

In Asian countries, 1% to 10% of the population has symptoms compatible with IBS. Despite the high prevalence of IBS, the etiology of this condition remains unknown. A long-recognized characteristic of IBS is gender disparity, whereby female patients appear to outnumber male patients in a ratio of 2:1. While the underlying mechanism for this disparity is not well understood, the observation of gender differences in functional bowel disorders extends beyond IBS as well.

The concept of gender role will be suggested as a possible contributing factor in the prevalence of IBS for both women and men. In general, women are more likely to complain of persistent, episodic or chronic visceral and musculo-skeletal pains. Women do report more multiple or recurrent pains than men.

In examining the literature on gender differences in IBS, it is apparent that most of the research has not tested for these differences in a scientifically rigorous manner. Some studies on IBS enrolled only women in their samples, although some others did include men, and there was often no gender difference in the analysis performed beyond description of sample demographics. Moreover, most of the previous studies on gender-related differences in IBS symptoms were based on the previous versions of Rome criteria. To our knowledge few studies to date have examined this association according to the Rome III criteria. In this study, we conducted a gender difference analysis by comparing findings for men and women through statistical analyses to determine whether or not significant differences existed.

**Materials and Methods**

**Patient Enrollment**

This single-center study was conducted in a private Gastro-enterology Clinic in Tehran, Iran during 2009-2010. IBS was diagnosed on the basis of Rome III criteria, according to which, recurrent abdominal pain or discomfort at least 3 days per month in the last 3 months with onset of symptoms at least 6 months back was essential for suspecting IBS. In addition, to diagnose a person as IBS, the pain was needed to be associated with at least 2 out of 3 features which included improvement of pain or discomfort with defecation and onset of pain or discomfort associated with changes in frequency or form (appearance) of stool. Imaging studies including colonoscopy were also performed wherever the approved criteria were met (eg, presence of diarrhea and age > 50 years). Furthermore, any cases with any organic disorders, inflammatory bowel disease, celiac disease, malabsorption disorders and gall bladder diseases were excluded from the study.

The study protocol was approved by the ethics committee of medical faculty, Tehran University of Medical Sciences (TUMS).

**Assessments**

Finally 144 patients were confirmed to have IBS and recruited to the study. A simple “10 point” objective questionnaire based on Rome III IBS module Table 1 was used in this study. The English version of the official Rome III questionnaire was previously translated into the native language Persian. The validity and reliability of this translated questionnaire were formerly evaluated in another study on Iranian IBS patients which were shown to be valid and reliable, showing a value of above 0.7 for Cronbach alpha coefficient.

Thereafter, the patients were further subclassified into diarrhea predominant IBS (IBS-D) if they had loose, mushy or water stools in the last 3 months with no hard or lumpy stools (question 9 = 0 and question 10 > 0); constipation predominant IBS (IBS-C), if they had hard or lumpy stools with no loose, watery mushy or watery stools in the past 3 months (question 9 > 0 and question 10 = 0); mixed IBS (IBS-M), if they had both loose and hard stools in the past 3 months (question 9 > 0 and question 10 > 0); and unsubtyped IBS (IBS-U), if they did not report either loose or hard stools in the past 3 months (question 9 = 0 and question 10 = 0).

In addition to the IBS modules, baseline characteristics of the patients including sex, age, marital status, educational level, occupational category and history of smoking were recorded. Moreover, the data on their related symptoms consisted of reflux, nausea, vomiting, anorexia, weight loss, fatigue and heart burn were asked and added to the medical records of the IBS patients. It must be noted that the description for these symptoms was based