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RESEARCH ARTICLE

STUDY OF IRRITABLE BOWEL SYNDROME (IBS) AMONG FEMALE STUDENTS OF TAIF UNIVERSITY: A COMPARATIVE STUDY IN MEDICAL VERSUS NON-MEDICAL STUDENTS

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Abstract

Introduction: Irritable bowel syndrome (IBS) is a repeated, expensive, and disabling functional digestive disorder. Stress can play a role in its occurrence; hence, nowadays many researches are conducted on the college students; especially the medical; as a vulnerable group to stress that may predispose to IBS.

Aim of the work To determine the IBS in medical students in Tiaf University, KSA, in comparison to non-medical students in female campus.

Method: A transversal study was conducted among 223 female students from Faculty of Medicine, Arts, Admin and Financial sciences, Computer and Information technology and Islamic law. Participants were selected randomly during October 2014. A questionnaire based on Rome III Criteria was used for data collection. The collected data were analyzed and represented in tables and graphs.

Results: Among the 223 students, the IBS was (26.9%) according to the Rome III criteria. IBS was more incident in medical students (30.3%) than non-medical (24.2%), but the difference was statistically non-significant. The percentage of IBS-constipation subtype was (38.3%), IBS-diarrhea subtype (33.3%) and IBS-mixed subtype (28.4%).

Conclusion: High IBS incidence in female students of Taif University particularly among medical students.

Recommendation: stress management courses and student support services are needed to allow the University students to deal with different stressors and pressure during the year university` studies.

Introduction:-

Irritable bowel syndrome (IBS) is a frequent functional digestive disorder, featured by pain or discomfort in the abdomen in association with changed bowel habits. Its occurrence estimation varies, greatly because of the variation between epidemiological studies.(1) It is widespread in the common people of the Western countries but its prevalence differs depending on the country studied, the used diagnostic criteria and population selection. However, not all the affected cases actually seek medical attention. This disease has a major contact to the life quality, disturbing community communications and professional chances and its financial burden is high. However, little is known about its occurrence` percent in Arab countries, including KSA.(2,3)

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Without any biological markers, its diagnosis mainly depends on the patient's symptoms and diagnostic criteria either Manning criteria, Rome I, Rome II, or Rome III measure. The Rome criteria are more advanced than the Manning criteria as they contain the period of symptoms as part of the identification and description of IBS. [4]

Based on the Rome III measures, it is defined as the presence of pain or discomfort in the abdomen for no less than 12 weeks (may be not successive) in the previous year (12 months). This pain cannot be elucidate by any abnormalities; either biochemical or structural. In addition the person has as a minimum two features from the following; onset of pain is coincided with an alteration in the rate of intestinal movements (constipation or diarrhea), pain is improved by defecation, or its onset is associated with form alteration of the stool (watery, or loose). [5,6]

The IBS etiology is undecided, and many studies have reported that many factors can play a role in its occurrence as psychological, social, and biological. Although its pathophysiology is unclear, gender, diet, lifestyle, psychiatric disorders, sleep problems, early adverse life events, and stress have been considered as risk factors, but they are controversial. [7,8,9]

In the recent years, the number of IBS research papers, relating to the university especially the medical students, has increased in the world. It is well known that medical students are under constant stress and are a special group, characterized by tremendous cognitive and emotional changes. [10,11]

Nowadays, many medical colleges are progressively transferred from the traditional to 'problem-based' approach (PBL) program in their medical education. As it is new curriculum, few studies compared between the course-related stressors in medical students on both programs and found that there are differences in the course-related stressors between them and this difference is statistically significant. [12]

College of medicine in Taif University is one of these schools applying PBL for conduction of student curricula. However, to the best of our knowledge, no comprehensive survey about IBS has been carried out on students either medical or non-medical, in Taif, KSA, and on the medical students on this new program anywhere.

This study aimed at probing the IBS in female college female students of Taif University, Saudi Arabia , and to compare between medical and non-medical students. Information that might be obtained could provide targeted recommendations for the treatment, which can effectively improve the clinical symptoms of IBS among affected students and enhance their learning efficiency and quality of life with decrease the cost for patients and health care system.

Subjects and Methods:-

This study was carried out during October 2014. The study was implemented in the female campus of Taif University, KSA in medical and non-medical colleges. The non-medical colleges involved in this study were College of Arts, College of Admin and Financial sciences, College of Computer and Information technology and college of Islamic law. The students included were from the second to the sixth grades in the college of medicine, and from first to fourth grades in the non-medical colleges. At time of enrolment, students were informed that their participation in the study is voluntary and they were randomly selected. In addition the name is not needed and the answers on the questionnaire that used to collect the data are top secret.

Rome III questionnaire of IBS was developed and modified by researchers after extensive literature review. [13] Then the questionnaire was translated into Arabic and distributed manually to the randomly selected non-medical students and put on the survey monkey web site for medical students. Data were analyzed using SPSS by Chi-square (X^2) test.

Results:-

Two hundred twenty-three students were included in the study, ninety nine medical and one hundred-twenty four non-medical. All participating students were females (100%), and the mean age of the medical was 21years (from 18-24) and the non-medical was 20 years (from18-22).

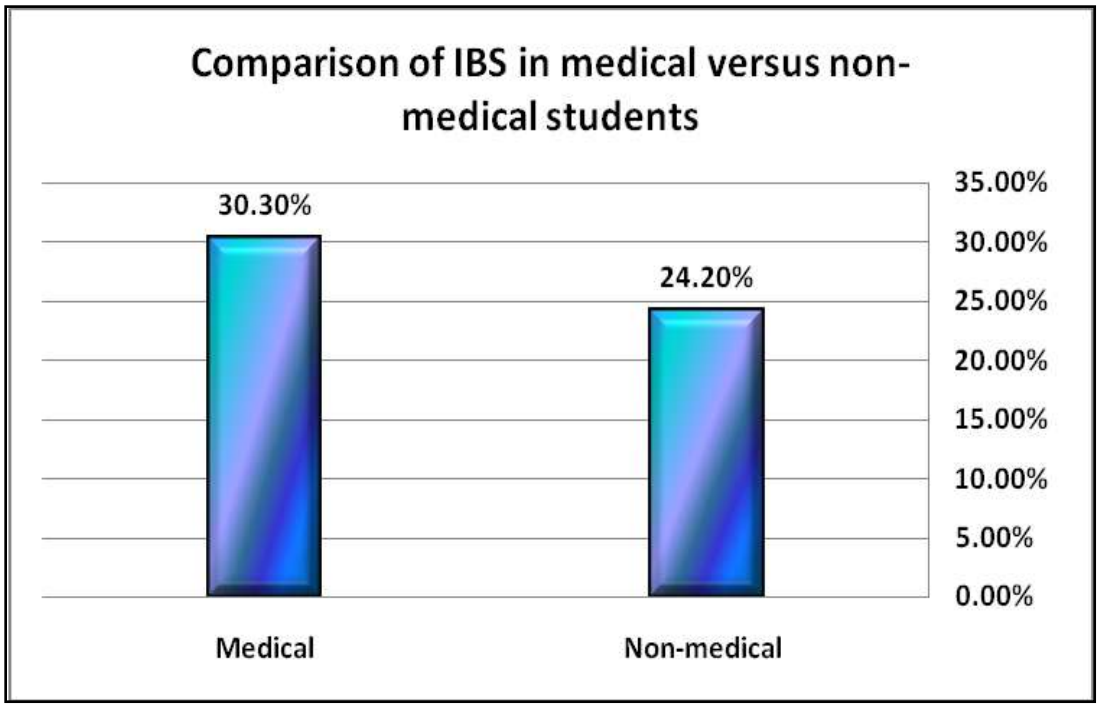
Three out of the medical (99) and 28 out of the non-medical (124) students did not feel discomfort or pain anywhere in the abdomen in the last 3 months, so, they skip from the rest of the questionnaire and considered non-IBS group

in accordance with the criteria of IBS in Rome III. Rest of the undergraduates, 96 medical (97%) and 96 non-medical (77.4%) completed the questionnaire up to the end.

According to the studied criteria, the IBS in female students of Taif University was 26.9% (60 out 223 students). However, it was higher in the medical students (30.3%) than in the non-medical students (24.2%); **(Table 1, histogram 1)**. On comparing the response of two groups by Chi square test, there was no statistically significance difference ($\chi 2 = 1.04$, $p = 0.31$).

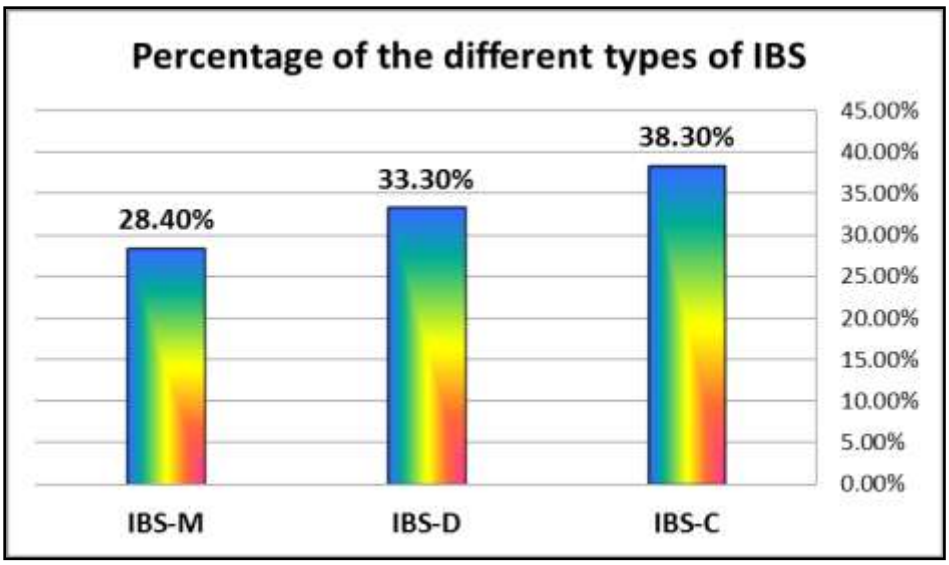
Table (1):- Percentage of different types of IBS according to the form of the stools and frequency of defecation.

	No	%
Total IBS No	60	26.9%
IBS-C	23	38.3%
IBS-D	20	33.3%
IBS-M	17	28.4%
Less frequently	35	58.4%
More frequently	25	41.6%



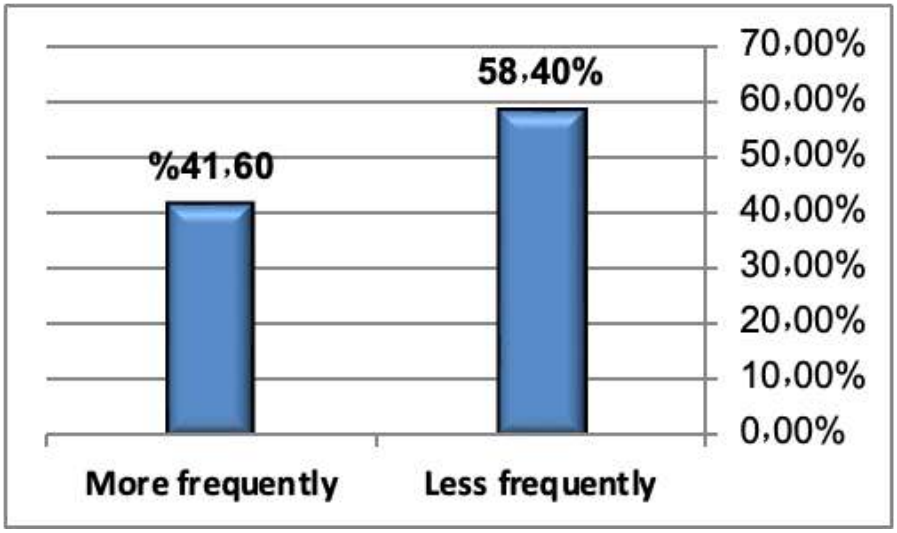
Histogram (1):- Percent of IBS in medical and non-medical female students in Taif University.

From the diagnosed cases in this study, different types of IBS according to the form of the stools were found. The constipation-predominant type (IBS-C) was 23 in the percentage of (38.3%), diarrhea predominant type (IBS-D) was 20 (33.3%) and the mixed type (IBS-M) was in 17 by percentage (28.4%) (**Table 1, histogram 2)**.



Histogram (2):- Percentage of different types of IBS according to the form of the stools

According to the number of times defecation, it is more frequently in twenty-five (41.6%) students from the diagnosed cases; 9 medical and 16 non-medical. While the number of times defecation is less frequently while this discomfort or pain began in 35 IBS students (58.4%); 20 medical and 15 non-medical (Table 1, 2 histogram 3, 4).



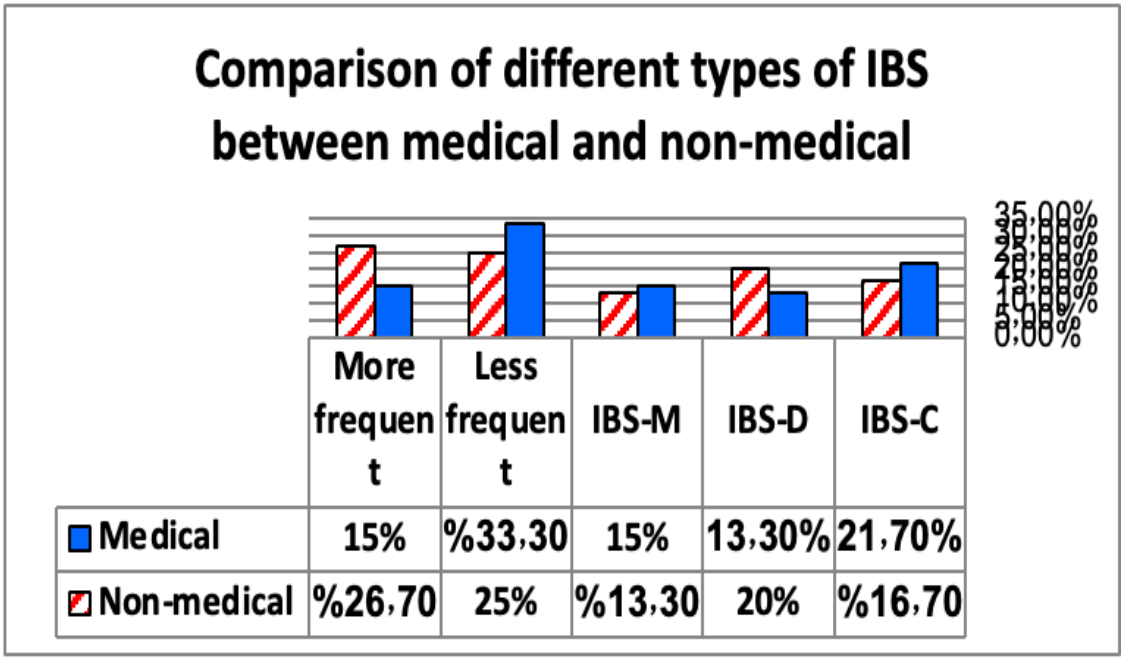
Histogram (3):- Percentage of different types of IBS according to frequency of defecation.

There was a family history of organic disease other that IBS as Inflammatory bowel disease, celiac water and cancer colon in 4 medical and 9 non-medical students. It was found that there is no relation between them and IBS (Table 2).

Table (2):- Percentage of different types of IBS in medical and non-medical students.

	Medical		Non-medical	
	No	% from IBS cases	No	% from IBS cases
IBS students	30	30.3 %	30	24.2%
Family history of organic disease	4	6.6 %	9	15%
IBS-C	13	21.7 %	10	16.7 %
IBS-D	8	13.3%	12	20%
IBS-M	9	15%	8	13.3%

Less frequently	20	33.3%	15	25%
More frequently	9	15%	16	26.7%



Histogram 4:- Comparison of the different types of IBS in medical and non-medical students.

Discussion:-

Nowadays, there is an increasing attention toward research either, clinical or epidemiological on the functional digestive disorders as irritable bowel syndrome (IBS).[14] This disorder is common, cost the patient financially, and also causes an incredibly cost for health care system and patients. [15]

The occurrence of IBS differed largely among various areas, in this study; its prevalence in female students of Taif University was 26.9%. This frequency is much higher than among University students in United States (11%) [16] and in Malaysia (15.8%). [17] Also it is higher than in European countries (11.5%),[18] and in Western countries (3% to 28%) [1] among general population.

The discrepancy between these previous studies and the present study may be attributed to environment or genetic changes, a difference in the cultural and dietary habits, differences in sample size, age group, and diagnostic criteria.[18,19] These differences may be also due to that, the college students are always vulnerable to stress during their study at their University.[16,28]

Regarding the frequency of IBS among medical and non-medical students, it was in a percent of (30.3) in medical students recording a higher rate than in non-medical (24.2%), however the difference was statistically non-significant. Many studies conducted on medical and non-medical (science, and engineering) found that the medical learning is one of the most difficult and stressful studies that may predispose to high occurrence of IBS. [20,21] In other studies, the recorded rate were relatively higher in medical and paramedical students from Korea (29.2%); [22] Pakistani (28.3%), [23] Japan (35.5%), [25,29] and in King Abdulaziz University, Jeddah, Saudi Arabia (31.8%). [16]

Sources of stress and pressure in medical students are often assembly into three main groups: financial, academic and social/personal problems. Long period to complete their medical studies, and numerous hardly exams, are examples of such enormous stress of medical student life. This may be harmful, since the long-lasting many pressure and stress can affect person performance.[15,24]

The divergence between the previous investigators' results and the results of the present study may be also due to the gender. According to their reports, females are three times more vulnerable to IBS than males.[9,26] Moreover, in

another study, they found a higher response to stressors in students on the traditional curricula (39 %) than medical students on a PBL education program showing a statistically significant difference (29%).[12]

Regarding the percentage of different subtypes of IBS, it is known that the diarrhea-dominant type of IBS is more common than the constipation-dominant type in the general population.[27] However, the results of this study are contradictory to ours, due to difference in life style. The long time stayed outside the home by most of college and university students make their life, eating habits and bedtimes are irregular. [29,30]

In conclusion, the IBS in students of Taif University is 26.9%. The medical students had higher incidence than the non-medical but the difference was not significant and also differed from medical students in other studies. The constipating subtype is more common than diarrhea and mixed subtypes. Therefore, stress management courses and student support services are needed to allow the students to deal with various stressors and pressure during their academic life to ensure optimum learning and well-being among the future. Also, further studies on incidence of IBS in the medical students on the traditional teaching methods versus PBL curricula are recommended.

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