Journal of Research in Medical and Dental Science
2018, Volume 6, Issue 5, Page No: 170-176

Available Online at: www.jrmds.in
eISSN No. 2347-2367: pISSN No. 2347-2545

The Prevalence of Irritable Bowel Syndrome Symptoms in High School Students in Abadan City in 2016

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ABSTRACT

Background and Purpose: Irritable bowel syndrome (IBS) is a chronic functional bowel disorder that is thought to be due to a disorder of brain-gut function and a chronic and debilitating functional gastrointestinal disorder that affects 9%-23% of the population across the world. This problem (IBS) is the second cause of absenteeism from the work and school, too. There is classification system for IBS (Rome IV classification system).
Method: The purpose of this descriptive cross-sectional study was determination Prevalence of Irritable Bowel Syndrome Symptoms in High School female Students in Abadan City in 2016. In this study, using a two-part questionnaire designed by the researcher, one part of which was demographic information, and the second part was IBS symptoms, 1044 girls were classified using random sampling method. After collecting data, data were analyzed by SPSS software version 19 and descriptive statistics tests. P value less than 0.05 was considered significant.
Findings: The age range of participants was between the ages of 14 and 18 and their mean age was 16 ± 2. The findings of this study showed that the most common symptoms of IBS include abdominal pain (66.4%), diarrhea (46.7%), constipation (42.5%).
Conclusion: According to the results of the study, it can be said that the symptoms of IBS are high among high school female students, thus clarifying the need for more attention to this issue.

Key words: Irritable bowel syndrome, Children, Gastrointestinal disorders, Abundance

HOW TO CITE THIS ARTICLE: Zeinab Raiesifar, Khadijeh Moradbeygi, Noorollah Tahery, Shahram Baraz, Razieh Shirzadegan, Pouriya Darabiyan, Mohammad Saberian, Afsaneh Raiesifar*, The prevalence of irritable bowel syndrome symptoms in high school students in Abadan city in 2016, J Res Med Dent Sci, 2018, 6 (5):170-176

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Received: 18/08/2018
Accepted: 17/09/2018

INTRODUCTION

Irritable bowel syndrome (IBS) is a digestive problem associated with a series of symptoms such as discomfort, abdominal pain, headache, appetite loss, weight loss, malnutrition, back pain and bowel habit disorder [1,2]. There is classification system for IBS (Rome IV classification system). Irritable bowel syndrome (IBS) is a chronic functional bowel disorder that is thought to be due to a disorder of brain-gut function [3] and a chronic and debilitating functional gastrointestinal disorder that affects 9%-23% of the population across the world [4]. This problem (IBS) is the second cause of absenteeism from the work and school, too [5]. Irritable bowel syndrome is more common in women than men [6], due to physiological differences in sex hormone, differences in response to stress and immune responses [7]. Children and adolescents are facing with this situation, however, there is limited information on the prevalence of IBS symptoms in this age group, with some studies suggesting that 14-24% of school age children in the world and 2.4%-25.7% Of Asian children have symptoms consistent with IBS [1,8]. A study in North America showed that the prevalence of

IBS symptoms in adolescent high school students was 14% and in adolescents with secondary education was 6%-10% [2]. Although there are no accurate statistics on this syndrome in Iran, according to recent studies conducted in different regions of Iran, the prevalence of this syndrome is reported to be about 18%, with the highest proportion of children and adolescents [9]. On the one hand, the prevalence of IBS in adolescent girls is 12%-17% more than adolescent boys [10].

Irritable bowel syndrome, due to the chronic nature and disability of the disease, has a profound effect on the quality of life of patients and the health system [11]. According to researches, quality of life and health of patients with IBS are lower than those who have not IBS [12]. It can also affect the various parts of the individual's life of teens, including sleep, hormones and sexual function, recreation, and travel. These problems lead to a significant drop in the quality of life and adolescent homework [13]. On the one hand, there is the fact that signs of IBS in adolescents, continue even in adulthood [14,15].

As noted, irritable bowel syndrome is a chronic disease and its symptoms (abdominal pain, diarrhea, etc.) cause excessive discomfort and, as a result, limitation of activities and changes in the mental image of oneself, on the one hand In children of high school age, the presence of a maturation crisis and its stress can lead to worsening symptoms of irritable bowel syndrome. By examining the prevalence of symptoms and its effective factors, it can be used to reduce the symptoms and complications of this chronic disease. So far, a study has not been conducted on the presence of this syndrome in Abadan. Since this city and the southern region of Iran generally have a different food style and more include processed food, it is necessary to consider this study as essential.

According to the mentioned issues and because children and adolescents form a large part of the population of Iran, It is important to pay attention to this issue. Also considering that irritable bowel syndrome is one of the common causes of absenteeism, and this problem continues several years later, therefore it is necessary to pay attention and plan for their health, thus the present study was designed to determine the prevalence of irritable bowel syndrome symptoms in high school girl students in Abadan city in 2016.

METHOD

This descriptive cross-sectional study was carried out on a female high school student in Abadan in 2016. Random sampling method was used to select participants. Thus, at first three Abadan metropolitan areas were considered, then the list of all girls' high schools with their students in three urban areas was prepared and then several high schools were selected randomly. There were four educational grades in these high schools, of which 1044 students were selected equally and randomly from each base and a total of 1044 students were included. In this study, a researcher-made questionnaire was used, the first part of which was demographic information, and have two questions include age and educational grade. The second part of the questionnaire consisted of questions designed to examine the symptoms of irritable bowel disease. This questionnaire was distributed to 10 faculty members of Abadan Faculty of Nursing who were expert and qualified in this field for evaluating content and face value. After updating the questionnaire according to the experts' opinion, in order to verify its reliability, a preliminary study was conducted on 80 students. The reliability of the questionnaire was confirmed through the internal coherence method (Cronbach's alpha coefficient=0.8).

The final version of the questionnaire included 16 questions related to IBS symptoms such as abdominal pain and discomfort, the frequency of severe or watery loose stools, a feeling of fairness in the abdomen and bladder, bloating in the abdomen, a feeling of a sudden excretion of feces in the last 3 months, The use of antibiotics over the last two weeks was a voluntary decrease in weight over the past two weeks. The way of performing the work was that after obtaining a permit from the Ethics Committee of the Faculty of Medical Sciences of Abadan and receiving a letter of introduction to the Education Department of this city and obtaining permission from this office, the selected schools were referred to the researcher during morning and evening shifts In the classroom, the questionnaire was distributed among the students to complete. Before the study was completed, the purpose of the research was explained to the students, and they received the consent of the company in the research. The data collection took 3 months and 1044 questionnaires were completed. Data were analyzed using SPSS software version 19 and descriptive statistics methods.

FINDINGS

In the present study, out of 1044 distributed questionnaires, five were omitted due to lack of information and a total of 1039 students were examined. The age range of participants was between the ages of 14 and 18 and their mean age was 16 ± 2. Half of the study group 530 (50.8 %) were the first grade of high school students. Other students were 212 (20.3%), 216 (21.6%) of the secondary school, and 226 (21.6%) of the upper secondary school, while 71 (6.8%) were enrolled in the secondary school. The frequency of each of the symptoms of irritable bowel syndrome is shown in Table 1, separately.

In response of the first question of questionnaire: Have you had pain in your stomach several times during the last three months? 66.4% (693 participants) Selected

"often" option. In response of the second question of questionnaire: How many times after your stool, your pain or abdominal discomfort is better or stopped? 42.2% (438 participants) Selected "often" option. In response of the sixth question of questionnaire: During the last 3 months, have you experienced watery stools? 46.7% (488 participants) Selected "often" option. In response of the seventh question of questionnaire: During the past

Table 1: Frequency of irritable bowel syndrome symptoms in high school students in Abadan City in 2016

Variable	Classification	Number	Percent (%)
1. Have you had pain in your stomach several times during the last three months?	Always	40	3.8
	often	693	66.4
	Sometimes	136	13
	Never	162	15.6
2. How many times after your stool, your pain or abdominal discomfort is better or stopped?	Always	150	14.4
	often	438	42.2
	sometimes	180	17.3
	Never	247	23.7
3. How many times have your stool been watery after the abdominal pain started?	Always	39	3.7
	often	116	11.1
	sometimes	365	35
	Never	492	47.1
4. How many times have your stool been tightened after your abdominal pain started?	Always	55	5.3
	often	120	11.5
	sometimes	346	33.1
	Never	468	44.1
5. Have you experienced severe stools in the past 3 months?	Always	29	2.8
	often	444	42.5
	sometimes	129	12.4
	Never	406	38.9
6. During the last 3 months, have you experienced watery stools?	Always	23	2.2
	often	488	46.7
	sometimes	101	9.7
	Never	395	37.8
7. During the past 3 months, have you experienced a tight compression of the abdomen that does not disappear?	Always	26	2.5
	often	546	52.3
	sometimes	129	12.4
	Never	327	31.3
8. Have you experienced abdominal bloating in the past 3 months?	Always	11	1.1
	often	553	53
	sometimes	77	7.4
	Never	383	36.7
9. During the past 3 months, have you experienced a feeling of being full in the bladder?	Always	26	2.5
	often	111	10.6
	sometimes	357	34.2
	Never	510	49.1
10. Have you experienced abdominal distension over the past 3 months?	Always	47	4.5
	often	182	17.4
	sometimes	469	44.9
	Never	328	31.4
11. Has this feeling of discomfort or abdominal pain existed for a long time?	It does not exist at all	942	90
	At least 6 months	45	4.3
	More than 6 months	34	3.3
12. Is this feeling of abdominal pain and discomfort only during the menstrual period?	Yes	570	54.6
	No	447	42.8
13. Have you used antibiotics for the last 2 weeks?	Yes	318	30.5
	No	683	65.4
14. Did you lose weight deliberately during the last 2 weeks?	Yes	239	22.9
	No	777	74.4
15. Is your blood in your stool?	Yes	62	5.9
	No	949	90.9
16. Do these symptoms (feeling of a sudden excretion of stool, sudden pain in the abdomen and other things) awaken you at night?	Yes	214	20.5
	No	802	76.8

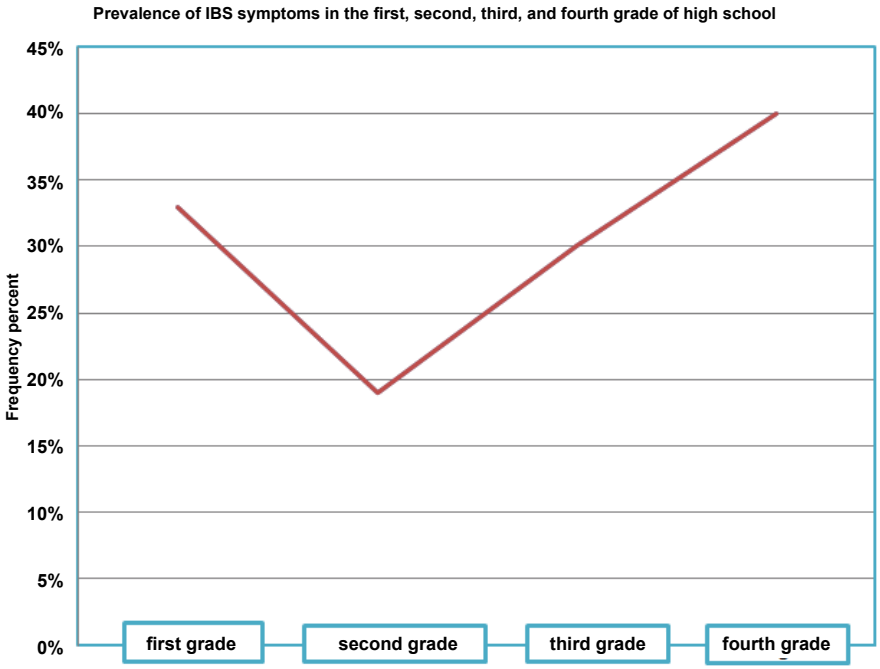

Figure 1: Prevalence of IBS symptoms in the first, second, third, and fourth grade of high school

3 months, have you experienced a tight compression of the abdomen that does not disappear? 52.3% (546 participants) Selected "often" option. In response of the eights question of questionnaire: Have you experienced abdominal bloating in the past 3 months? 53.0% (553 participants) Selected "often" option.

As you can see, in these questions, most contributors have chosen the "often" option, which means that irritable bowel syndrome among the students studied has been highly prevalent. There was no significant difference in other questions of the questionnaire, which indicates irritable bowel syndrome.

In this study, the prevalence of IBS symptoms in the first, second, third, and fourth grades of high school was 33%, 19%, 30%, and 40%, respectively. Also, there was no significant difference between the prevalence of irritable bowel syndrome and gender and educational variables (Figure 1).

DISCUSSION

The aim of this study was to determine the prevalence of symptoms of irritable bowel syndrome among high school adolescent students in Abadan city. The findings of this study showed that the most frequent symptoms of IBS symptoms were abdominal pain (66.4%), diarrhea (46.7%), and constipation (42.5%). Also, statistics show that only some of these people experienced a sudden or severe stiffness in the stool consistency after the onset of abdominal pain, with about 35% of the subjects reporting that during the last three months they sometimes had watery diarrhea and others suffered constipation (33.1%). One of the studies on the prevalence of these signs of irritable bowel syndrome was the study by Khajedaluee et al. on people with IBS who referred to gastroenterology clinic of Mashhad. The frequency of the four main symptoms of IBS was as follows: abdominal pain (23.8%), diarrhea (28.5%), constipation (13.3%), and mixed group (34.4%), whose distribution was significantly different [16]. In line with this conclusion, Rajindrajith et al. conducted a school-based study based on Roman III criteria to study the types and symptoms of irritable bowel syndrome in Sri Lankan children and adolescents. The results of this study showed that the most common symptoms of IBS included constipation and diarrhea-predominant type as well as combination type that were almost equally distributed (27-28%), while IBS was less common with undetermined symptoms (17.8%) [17]. While the study by Omagari et al. on young Japanese women found that the prevalence of constipation (25%) was higher than diarrhea (17.9%), on the other hand, another study demonstrated, the prevalence of diarrhea was higher than constipation [18]. The minor differences in the results of these studies may be due to the use of different criteria and methods in studies to diagnose IBS symptoms.

In the present study, it was found that half of the subjects most often experienced bloating and abdominal pressure (53%) and had a gas out of the intestine. However, only a third (34%) of these students had reported blueness and retention. In the study of Semnani et al. the most common intestinal symptoms in the patients were respiratory emergencies (7.85%), imperfect bowel movements (85.4%), and abdominal distension (8.87%) [19]. Feeling bloated and squeezing in the abdomen, as well as discharging intestinal glands, in addition to being unpleasant and annoying, can cause feelings of

embarrassment in adolescents, and affects their level of participation in community groups and activities and feelings of self-esteem.

Also, half of the subjects in this study expressed abdominal pain at the same time as menstruation (54.6%) (Consistent with the results of Bharadwaj et al.) [20]. One of the causes of exacerbation of IBS symptoms during menstruation is increased levels Prostaglandins that act as stimulants for the digestive system and exacerbate the symptoms. Estrogen impact on IBS too. Related to this, Lee et al. study the gender differences in the prevalence of irritable bowel syndrome and gastrointestinal symptoms According to the menstrual cycle, 193 women were analyzed in this study. Women in the menstrual phase. Three groups were divided into: Menstrual phase, reproductive phase, and secretion stage. The results of this study showed that there was no statistically significant difference in gastrointestinal symptoms in women based on menstrual periods [21], due to differences in results in the geographic area as well as sample size, this study should be conducted.

According to the results, it can be concluded that the prevalence of symptoms of irritable bowel syndrome in the students was high. Two important factors in this study were the age and gender of the subjects, with the prevalence of symptoms in this age group and sex for the reasons outlined above. So far, several studies have been done on IBS in the world. In a systematic review conducted by Saito et al. in North America, the prevalence of IBS was estimated to be 20%-30%, with the most frequent cases of diarrhea and constipation, and more in female than men [22]. In the review of Dianarayana et al., the prevalence of IBS in school children was 2.8%-25.7%, and most reported among girls [8]. In the study of Jamali et al. most people with irritable bowel syndrome were adolescents and children and were female [23].

Lee et al.'s results also indicate that the prevalence of IBS symptoms in females is greater than that of males [21], and the same and other similar studies that show the prevalence of IBS in the female population is a reason for choosing a female gender as a community research. With regard to why IBS is higher in adolescent high school and women, it can be said that adolescence is one of the most important stages of growth and one of the most stressful periods of life. On the one hand, at this point in the competition for examinations and the acquisition of seats in the universities, it is so important that even a person fails to learn a lot from its usual lifestyle, and less such things as physical activity and exercise, and his low self-esteem. It can cause digestive disorder, and it appears in the form of constipation, abdominal pain which can be related with IBS symptoms. In the study of Zhou et al. who studied the prevalence of IBS and its associated factors, primary and secondary school students in schools in Shanghai, it was found that IBS is a common disorder in adolescents with an outbreak (20.72%) increases with age, so that the IBS of high school facilities are more prevalent than primary school children, which can be due to gastrointestinal infections, drug use, and psychological factors [24]. The tendency to emotional disturbances associated with anxiety and stress associated with this period of life (adolescence) increases with age, indicating a potential correlation with IBS, and emphasizes the importance of positive family and school environment. The results of the Rajindrajith et al. study on adolescents also indicate a high prevalence of this syndrome in girls [17]. The prevalence of symptoms in girls (59.8% vs. 40.2% in boys) was 17%. Karabulut et al. also showed that the prevalence of IBS according to the Rome III criteria in children and adolescents was 26.6%, and according to her study, IBS is related to physical and family factors [25].

As mentioned in the introduction, the inhabitants of the south and southwest of the country, in terms of lifestyle and food habits, are different from other places, and the consumption of processed food are among the common habits in these areas. The study of Omagari et al., which was conducted to assesment the influence of psychological, physical, diet, nutritional on IBS symptoms effects in young Japanese women, found that people with IBS had a lower BMI and more physical activity. The results of this study showed that psychological, physical, diet and nutritional symptoms are one of the most important factors in irritable bowel syndrome [18]. In a study by Esmaillzadeh et al. on 4763 Iranian adults who aimed to determine the relationship between processed food consumption and IBS prevalence, it was found that consuming readily available foods is directly related to IBS, so that IBS outbreaks In people who eat processed food more than 10 times a week, they are 92% more likely than non- processed food users [26]. For this reason, perhaps one of the causes of the high incidence of irritable bowel symptoms in the study group is due to the habits and dietary patterns of these areas, although confirmation or rejection of this possibility depends on further studies.

According to the results of various studies and the present study, it can be said that diarrhea and constipation are one of the most important symptoms of IBS among adolescents. The results of the study on the relatively high prevalence of symptoms of irritable bowel syndrome in the schools examined need further attention to this issue. The results of this study are important in many aspects; firstly, this study can be considered as a basic study for further studies or preventive measures in relation to the high sample size. Secondly, given the relatively high prevalence, strategies should be taken to prevent or reduce the symptoms of irritable bowel syndrome in schools. For proper planning, it is first necessary to discover the causes associated with these symptoms in the community under study, and then proceed on the basis of the causes for the removal or reduction of those factors. These Factors can be rooted in curriculum,

school space, student counseling and guidance, or home space, family relationships, and emotional issues.

CONCLUSION

This study shows the relatively high prevalence of symptoms of irritable bowel syndrome in the study group. Nurses, health care providers and parents should carefully investigate abdominal pain, diarrhea and constipation in children of school age. Health centers should provide training on the symptoms and complications of irritable bowel syndrome to teachers and school officials and parents. Given the increasing presence of school or health nurses in Iranian schools, the role of nurses in identifying symptoms and effective factors and managing them has become increasingly important, and educators should be more focused on this issue. The school nurse can provide care and counseling because of close contact with the student or family. In addition, community health nurses can also play a role in preventing these symptoms in community-based education for families and adolescents. As discussed, these symptoms can cause emotional problems such as anxiety and feelings of embarrassment in adolescents and this can lead to school absenteeism.

OFFERS

It is suggested that such a study be carried out for other cities and provinces, so that we can take preventive measures in this age group with more results.

ACKNOWLEDGMENTS

This article is the result of a research project with Code 91st.003 approved by the Faculty of Medical Sciences of Abadan, funded by the Vice-Chancellor of Research. This is thanks to the staff of the Abadan Education Director-ate, who has been cooperating sincerely.

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