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The irritable bowel syndrome (IBS) in emergency healthcare professionals

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Abstract

The aim of the present study was to determine the frequency of irritable bowel syndrome (IBS) in emergency healthcare professionals in a public hospital and characteristics of healthcare professionals diagnosed with IBS. The population of this descriptive study consisted of a total of 67 people including 8 physicians and 59 non-physician healthcare professionals working at Emergency Service of Bingöl Public Hospital. A questionnaire with two sections was used to collect data. While the first section of the questionnaire which was prepared and administered by the researchers based on the literature had questions about demographic characteristics, working conditions, daily habits, dietary information; the second section included questions about IBS condition. The Rome III criteria were employed for diagnosis of IBS. When some characteristics were examined in terms of the presence of IBS, 65.9% of the males and 69.2% of the females have IBS. Upon examination of the individuals with IBS it was observed that the distribution of IBS was more in those who were male (60%); were younger than 40 years of age; were in overweight BMI group, were non- smokers, had poor or sedentary physical activity level, were drinking 3 or more cups of tea a day, were drinking 1-2 cups of coffee, had 3 meals a day, did not skip the meal and sometimes had snacks; however the differences were not statistically significant ($p<0.05$). Working hours should be regulated considering physical and psycho-social needs of healthcare professionals working in emergency units to minimize frequency of IBS in them.

Keywords: Irritable bowel byndrome, emergency staff, health personnel

Introduction

It is a functional bowel disorder which cannot be explained by an organic pathology and is characterized by changed bowel habits and chronic abdominal pain relieved after defecation. Form of stool and the number of defecation may vary in patients. Patients feel relieved after defecation. Physical examinations, laboratory and imaging studies of patients are normal [1]. Its prevalence is between 6.1-19.2% in Turkey and about 10% in abroad [2-5]. Prevalence of IBS (Irritable bowel syndrome) varies by age. It can be seen in all groups of age [6].

A significant correlation was found between the presence of the syndrome and previous infection, stress, not having a diet with three meals a day, insufficient intake of fibrous food, smoking, drinking cola, coffee, and tea, previous abdominal interventions, and the use of laxative [2,7].

Healthcare professionals, particularly emergency healthcare professionals, are known to face intensive stress factors due to intensity of workplace environment, seriousness of patients given care, time pressure, and schedule of working in shifts. It is estimated that the consumption of cigarette, coffee, and tea is excessive since the workplace environment is stressful; their diet is not regular and sufficient in terms of fibrous food when considering there is time problem during the work at workplace.

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For this purpose, the aim of the present study was to determine the frequency of IBS in emergency healthcare professionals in a public hospital and characteristics of healthcare professionals diagnosed with IBS.

Material and Methods

The population of this descriptive study consisted of a total of 67 people including 8 physicians and 59 non-physician healthcare professionals working at Emergency Service of Bingöl Public Hospital. Before the study, ethics approval from Rectorate of Bingöl University, Department of Scientific Research and Publication Ethics Committee and also administrative approvals from Provincial Directorate of Health were obtained. The study was conducted after receiving the necessary written permissions from related institutions between 01.04.2016 – 31.05.2016.

A questionnaire with two sections was used to collect data. While the first section of the questionnaire which was prepared and administered by the researchers based on the literature had questions about demographic characteristics, working conditions, daily habits, dietary information; the second section included questions about IBS condition. The Rome III criteria were employed for diagnosis of IBS.

The diagnosis of the disease is based on revealing the symptoms. The most commonly used method is the method called as Rome III criteria including questions about the symptoms (Table-1). Defecation types of patients are also examined by a method called

as Bristol Stool Form Scale (Figure-1) [8].

Table -1: Roma III criteria

Having at least two of the below-mentioned items as well as abdominal pain attacks continuing at least for the last three months and experienced minimum 3 times every month;

- Pain relief with defecation,
- A change in frequency of defecation,
- A change in form of stool

Figure 1. Bristol Stool Form Scale

Evaluation of Socio-demographic characteristics

The participants were asked about age, height, body weight, gender, city of birth, marital status, number of those living at home, educational level, occupation, and the organization where they work. Additionally, body mass index (BMI) was calculated by using height and body weight. BMI was calculated by dividing the height in cm to the square of the body weight in kg [9]. BMI was evaluated as follows; the value less than 18.5 as slim, the values between 18.5-24.99 as normal, the values between 25-29.99 as overweight, and values of ≥ 30 as obese.

Evaluation of IBS symptom severity

Those having the complaint of abdominal pain was asked to mark the level of this pain with a point between 0-100 on the line. Additionally, it was asked how many days they suffered from abdominal pain within the period of 10 days (it was scored by multiplying this number with 10). Those who had the complaint of abdominal tension were asked to give a score of 0-100 on line regarding the severity of the tension they had. They were asked to give a score between 0-100 points individually to the questions concerning level of satisfaction with bowel habit and to what extent the feeling of discomfort in the abdomen affects their life. The scores obtained from 5 categories were added. Total score interval varies between 0-500. Total score is categorized as under 75, between 75-174 (mild), 175-299 (moderate), 300 and above (severe) [10].

The data were recorded into statistical packaged software on the computer; controls of error, tables, and statistical analyses were performed via the software. Means were given along with standard deviations and the value of $p<0.05$ was accepted to be significant. Frequency analyses were performed for data assessment, chi-square analysis was applied for categorical variables, and Mann-Whitney U analysis was performed for numerical variables.

Results

Table 1 shows the distribution of general characteristics of emergency healthcare professionals. Accordingly, 61.2% of the participants were male and 38.8% were female. 74.6% of the participants were younger than 40 years of age. 75.6% of the males and 61.5% of the females were married. 34.3% of the individuals had high school degree, 31.3% an associate degree, and 31.3% bachelor's degree. Majority of the participants (34.3%) had minimum 3000 TL or higher income. While 63.4% of the males were overweight, 73.1% the females were in normal BMI group. Half of the participants did not have smoking habits.

Table 1 Distribution of general characteristics of the participants (%)

Characteristics	Male (n:41)		Female (n:26)		Total (n: 67)	
	n	%	n	%	n	%
Gender	41	61.2	26	38.8	67	100.0
Age						
Younger than 40	27	65.9	23	88.5	50	74.6
40 and over	14	34.1	3	11.5	17	25.4
Marital status						
Single	10	24.4	10	38.5	20	29.9
Married	31	75.6	16	61.5	47	70.1
Educational level						
High school	14	34.1	9	34.6	23	34.3
Associate degree	14	34.1	7	26.9	21	31.3
Bachelor's degree	11	26.8	10	38.5	21	31.3
Master's degree and higher	2	4.9	0	0.0	2	3.0
Level of income						
750-1500 TL	14	34.1	2	7.7	16	23.9
1501-2250 TL	5	12.2	2	7.7	7	10.4
2251-3000 TL	13	31.7	8	30.8	21	31.3
3001 TL and above	9	22.0	14	53.8	23	34.3
BMI groups						
Slim	0	0.0	0	0.0	0	0.0
Normal	15	36.6	19	73.1	34	50.7
Overweight	26	63.4	7	26.9	33	49.3
Smoking						
Yes	21	51.2	13	50.0	34	50.7
No	20	48.8	13	50.0	33	49.3
Total	**41**	**100.0**	**26**	**100.0**	**67**	**100.0**

*Chi-square analysis was performed. The value of $P<0.05$ is statistically significant.

Table 2 shows the distribution of severity of the irritable bowel syndrome. Accordingly, 46.3% of the males and 34.6% of the females were mostly observed to suffer from mild IBS. Mean score of IBS was found to be higher in females than males; however, this difference was not statistically significant ($p>0.05$).

Table 2. Distribution of IBS groups in terms of gender (%)

IBS groups	Male (n:41)		Female (n:26)		Total (n:67		P values
	n	%	n	%	n	%	
Normal (0-74 points)	14	34.1	8	30.8	22	32.8	
Mild (75-174 points)	19	46.3	9	34.6	28	41.8	
Moderate (175-299 points)	7	17.1	8	30.8	15	22.4	
Severe (300 points and higher)	1	2.5	1	3.8	2	3.0	0,559
Total	**41**	**100.0**	**26**	**100.0**	**67**	**100.0**	
Mean IBS score (x±SD)	121.6±74.6		136.4±86.3		127.3±79.0		0,455

*Chi-square analysis was used for categorical variables and Mann-Whitney U analysis for numeric variables. The value of P<0.05 is statistically significant and p values are showed differences between males and females. P values show the difference between males and females.

When some characteristics were examined in terms of the presence of IBS (Table 3), 65.9% of the males and 69.2% of the females have IBS. Upon examination of the individuals with IBS it was observed that the distribution of IBS was more in those who were male (60,0%); were younger than 40 years of age (73,3%); were in overweight BMI group (55,6%), were non-smokers (51,1%), had poor or sedentary physical activity level (71,1%), were drinking 3 or more cups of tea a day (77,8%), were drinking 1-2 cups of coffee (53,3%), had 3 meals a day (75,6%), did not skip the meal (62,2%) and sometimes had snacks (%75,6); however the differences were not statistically significant (p>0.05).

Table 3 Distribution of some characteristics in terms of IBS groups (%)

Characteristics	İBS (+)n:45) (≥75 points)		İBS (-)(n:22) (≤74 points)		Total (n:67)		P values
	n	%	n	%	n	%	
Gender							
Male	27	60.0	14	63.6	41	61.2	0,774
Female	18	40.0	8	36.4	26	38.8	
Age							
Younger than 40 years	33	73.3	17	77.3	50	74.6	0,728
40 years and over	12	26.7	5	22.7	17	25.4	
BMI groups							
Normal	20	44.4	14	63.6	34	50.7	0,164
Overweight	25	55.6	8	36.4	33	49.3	
Smoking							
Yes	22	48.9	12	54.5	34	50.7	0,664
No	23	51.1	10	45.5	33	49.3	
Level of physical activity							
Poor	32	71.1	15	68.2	47	70.1	0,866
Moderate	10	22.2	6	27.3	16	23.9	
Heavy	3	6.7	1	4.5	4	6.0	
Tea consumption							
Less than 3 cups a day	10	22.2	1	4.5	11	16.4	0,182
More than 3 cups a day	35	77.8	21	95.5	56	83.6	
Coffee consumption							
No	14	31.1	12	54.5	26	38.8	0,165
1-2 cups of coffee	24	53.3	7	31.8	31	46.3	
3 cups and more	7	15.6	3	13.6	10	14.9	
Number of meals							
2 main meals	11	24.4	1	4.5	12	17.9	0,055
3 main meals	34	75.6	21	95.5	45	67.2	
Skipping the meal							
Yes	17	37.8	6	27.3	23	34.3	0,395
No	28	62.2	16	72.7	44	65.7	
Snacking besides meal							
Yes	6	13.3	3	13.6	9	13.4	0,975
Sometimes	34	75.6	16	72.7	50	74.6	
No	5	11.1	3	13.6	8	11.9	
TOTAL	**45**	**100.0**	**22**	**100.0**	**67**	**100.0**	

*Chi-square analysis was performed. The value of P<0.05 is statistically significant and p values are showed differences between males and females. P values show the difference between males and females.

Discussion

IBS is a chronic functional bowel disease characterized by symptoms of abdominal pain or discomfort feeling associated with defecation disorder [11,12]. IBS is one of the most frequent GIS disorders identified. IBS influences life quality of patients and leads to economic loss [13].

IBS is among the most frequent medical problems encountered in primary healthcare institutions and gastroenterology clinics. 25% of patients with IBS consults a doctor and a great majority continue their lives without being diagnosed with this disorder [14,15]. The essential reason of the present study is to identify to what extent IBS, being an important reason for morbidity in public, influences emergency healthcare professionals as well as some risk factors that may lead to IBS. It is thought that the present study provided considerable insight since the whole population of the study was reached.

It was found that 61.2% of the participants were male and 38.8% were female. 74.6% of participants were younger than 40 years of age. 75.6% of the males and 61.5% of the females were married. While 63.4% of the males were overweight, 73.1% of the females were in normal BMI group. Half of the participants did not have smoking habit.

According to the results of the study; 46.3% of males and 34.6% of females among emergency healthcare professionals were mostly observed to suffer from mild IBS. Mean score of IBS was higher in women than men, however this difference was not statistically significant (p>0.05). In most of the previous studies, IBS was higher in women compared to men [4,16]. Despite the relationship between IBS and gender could not be clarified exactly, the reason why IBS is more prevalent in women than men may be associated with the fact that female steroids affect visceral sensitivity and decrease pain threshold or there are synthesis differences of serotonin of central nervous system between genders [17].

When individuals who participated in the present study and had IBS were examined; it was observed that the distribution of IBS was more in those who were younger than 40 years compared to those older than 40, were in normal BMI group, were smoker, and had poor or sedentary physical activity level; however these differences were not found to be statistically significant (p>0.05). When the obtained data were separately examined; primarily concerning the age factor, IBS affected all age groups, but majority of those were diagnosed included young people. This result is compatible with the results reported in the literature [15,18].

When the correlation between Irritable Bowel Syndrome and Body Mass Index was examined, a study conducted on university students in Korea, Japan, and China could not show the relationship between BMI and IBS [19-21]. The results of the present study were also compatible with these studies. According to current results, it can be asserted that BMI was not an effective factor in frequency of IBS.

There are various studies on identification of the correlation between smoking and IBS prevalence. No correlation was found between the presence of IBS and smoking in a study with 7520 patients in primary healthcare institutions from 32 cities in Turkey

and in another one with 1250 patients from Sivas region [2,7]. Spiller evaluated smoking as a risk factor for only developing post-infectious irritable bowel syndrome [22]. Despite smoking has no or limited contribution to development of IBS, it has a value in overlapping with other gastroenterological diseases.

Consequently; according to the data obtained from the individuals participating in the present study and having IBS, it was observed that IBS had greater distribution in those who were consuming 3 or more cups of tea a day, did not consume coffee, had 3 meals a day, did not skip meals and sometimes had snacks; however these differences were not statistically significant ($p>0.05$). When the correlation between IBS prevalence and regular eating habit was analyzed, the prevalence of IBS was higher in those having irregular daily meals [19,23].

Conclusion

Even though IBS does not cause mortality, it is important because it impairs life quality of individuals and leads to economic loss depending on unnecessary diagnostic tests and overuse of health centers due to labor loss and anxiety in patients.

In the present study conducted to determine the frequency of IBS in emergency healthcare professionals and the characteristics of healthcare professionals diagnosed with IBS it was observed that 46.3% of the males and 34.6% of the females among emergency healthcare professionals had mostly mild IBS. As some characteristics were examined in terms of the presence of IBS, 65.9% of the males and 69.2% of the females have IBS. Upon examination of the individuals with IBS, it was observed that the distribution of IBS was more in those who were male (60,0%); were younger than 40 years of age; were in overweight BMI group, were non-smokers, had poor or sedentary physical activity level, were drinking 3 or more cups of tea a day, were drinking 1-2 cups of coffee, had 3 meals a day, did not skip the meal and sometimes had snacks; however the differences were not statistically significant ($p>0.05$).

Working hours should be regulated considering physical and psycho-social needs of healthcare professionals working in emergency units to minimize frequency of IBS in them. When taking stressful and intensive work environment of emergency healthcare professionals into account; training should also be provided for giving up smoking habits, minimizing tea-coffee consumption, having healthy and balanced diet, and not skipping meals.

Competing interests
The authors declare that they have no competing interest

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