

Prevalence of Constipation among Medical Students: Single Centre Experience

Marwa A Besar¹, Nada K. Afia², Rana F. Badr²

¹Department of Medicine, Mansoura University, Mansoura, Egypt

²Department of Medicine, Menoufia University, Menofia, Egypt

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ABSTRACT

Background: Constipation is a functional abnormality of defecation, which often has a multi factorial origin. The epidemiological data available on constipation are limited, especially among students with poor dietary and defecation habit. Constipation generates high health care costs related to diagnostic work up, medication and even surgery.

Objectives: assess the prevalence of constipation among medical students and its association with bad habits concerning defecation, such as postponing, unhealthy lifestyle.

Methods: This is an observational cross-sectional study including (283) 5th grade medical students in Menofia faculty of medicine were randomly selected. A cluster of questionnaires easy to understand and fill out was online distributed.

Results: About 283 5th grade medical students were studied, 188 (66.4%) were males, and 95 (33.6%)

were females. Of the studied students only 75 (26.5%) students reported feeling constipated, poor dietary habit was main contributing factor 25 (60.7%) students. There is statistically significant differences ($p=0.000$) between sex; high prevalence of constipation among females 39 (41.1%) than 36 males (19.1%).

Conclusion: constipation among 5th grade medical students related more to poor dietary habit and stressful life. No significant prevalence between male and female.

Keywords: Constipation, Fast food, Fiber diet, Laxative, Enema.

Correspondence:

Marwa A Besar

Department of Medicine, Mansoura University, Mansoura, Egypt

E-mail: besarmarwa@mans.edu.eg

ABBREVIATIONS

BMI: Body Mass Index.

INTRODUCTION

Constipation is a functional abnormality of defecation, defined as infrequent passage of hard stool. It has a multi factorial origin and present in different manner that trigger important organic conditions, such as colorectal cancer or autoimmune diseases [1].

The epidemiological data available on constipation are limited, despite its high burden on health care per year; associated with frequent consultations, multiple diagnostic tests, medication and sometimes even surgery [2,3]. Raising the awareness of its prevalence, associated risk factors provide preventive program and revision of available treatment.

METHODOLOGY

A questionnaire based; observational cross-sectional study was conducted on 5th grade medical students in Menofia faculty of Medicine.

Study population; the study sample was taken randomly from medical students at Menofia University.

The included criteria,

- 5th grade medical student aged from 18 to 26 years old,
- Both genders male and female.

Informed consent; was obtained from all participated students. All data obtained will be kept private, and the name of the students will not be included in the survey.

The questionnaire is divided into three parts as follow; the first part includes questions about demographic data of the students. The second part includes lifestyle habits as smoking, diet habits, water intake and postponing of defecation. The third one related to factors influencing constipation and its complications.

Statistical analysis

Upon completing of data collection, data is analysed using the Statistical Package for Social Science (SPSS) released in 2013 (IBM SPSS Statistics for Windows, Version 22.0, IBM Corporation, Armonk, NY, USA). An analysis of descriptive statistics will conduct to illustrate the demographic and other selected characteristics of the students; mean \pm standard deviation and frequency distribution for numerical and categorical variables, respectively.

RESULTS

Table 1 shows that about (283) 5th grade medical students was studied, 188 (66.4%) were males and 95 (33.6%) were females. The age group that most responded was 131(46.3%) students age group between (21-23) years followed by 129 (45.6%) students age group (18-20) years, the least one was 23 (8.1%) students age group (24-26) years. About 90.5% (256) students were non-smokers and positive family history of constipation in 52 (18.4%) subjects. Most of studied students were healthy weight range (BMI>21.5) and nearly all participants 277 (97.9%) had healthy life with only 2.1% suffer from chronic disease e.g Irritable Bowel Syndrome (IBS) and Gastro-Esophageal Reflux Disease (GERD).

Table 1: Demographic data of studied group.

Criteria		Number	Percentage
Sex	Male	188	66.4
	Female	95	33.6
Age	18-20	129	45.6
	21-23	131	46.3
	24-26	23	8.1
Smoking	No	256	90.5
	Yes	27	9.5
Family history	No	231	81.6
	Yes	53	18.4

Table 2 shows lifestyle and dietary habit. Most of the studied students consumed unhealthy food; 236 (83.3%) ate junk food with 281(99.3%) had no desire for healthy vegetables. More than half of participant 233(82.3%) like soft drinks, with little water intake 17% students; 112 (39.6%) drank 2 L of water per day, with only 19 (6.7%) drinking more than 3 L.

Table 2: Lifestyle and dietary habit of studied group.

Criteria		Number	Percentage
Constipation	No	208	73.5
	Yes	75	26.5
Fast food	No	47	16.6
	Yes	236	83.3
Soft drink (cola)	No	50	17.7
	Yes	233	82.3
Vegetables	No	281	99.3
	Yes	2	0.7
Water	1 liter	93	32.9
	2 liters	112	39.6
	3 liters	59	20.8
	>3 liters	19	6.7
Exercise	No	2	0.7
	Yes	281	99.3

Table 3 shows that of the studied students only 75 (26.5%) students reported feeling constipated, poor dietary habit was main contributing factor 25 (60.7%) students, 7 (17%) student poor water intake, 6 (14.6%) students postpone defecation, 4 (9.7%) of studied participant suffer from stress, 3 (7.3%) of them lack physical activity and little food intake, 2 (4.8%) participant ingest supplementation e.g., iron that contribute to constipation. 66 (23.3%) students relieve their constipation by enema, majority of them 28 (10%) use it more than one time/week, while 13 (4.6%) had to use it more than 3 times/week, but unfortunately 53 (18.7%) of them complicated by diarrhoea. Only 7 (2.5%) students tried several laxatives to get rid of their symptoms. Distension 138 (48.8%), audible sound 116 (51.2%), weight loss 59 (20.8%) and anorexia 46 (16.3%) are the most alarming sign complicated studied participant. Low percentages of blood 23 (8.1%) and mucus 37 (13.1%) detected in the stool of studied group.

Table 3: Lifestyle and dietary habit of studied group.

Criteria		Number	Percentage
Factor	Poor dietary habit	25	60.7
	Low water	7	17
	Postpone defecation	6	14.6
	Stress	4	9.7
	Lack physical activity	3	7.3
	Iron supplementation	2	4.8
	Laxatives	No	276
	Yes	7	2.5
Enema	Never	217	76.7
	Once/week	28	10
	Twice/week	20	7.1
	Three times/week	5	1.8
	More than 3 times/week	13	4.6
Diarrhea	No	230	81.3
	Yes	53	18.7
Audible sound	No	167	59
	Yes	116	41
Distension	No	145	51.2
	Yes	138	48.8
Weight loss	No	224	79.2
	Yes	59	20.8
Anorexia	No	237	83.7
	Yes	46	16.3
Blood	No	260	91.9
	Yes	23	8.1
Mucus	No	246	86.9
	Yes	37	13.1

Table 4 shows that, in total, 75 subjects (26.5%) reported feeling constipated, there is statistically significant differences (p=0,000) between sex; high prevalence of constipation among females 39 (41.1%) than 36 males (19.1%). Strong family history was evident in male (23.4%) than female (8.4%) and it was statistically significant (p=0,001).

Table 4: Differentiating points according to gender.

Criteria		Gender		X ²	P-value
		Male Number	Female Percentage		
Constipation	No	152	80.90%	15.545	0
	Yes	36	19.10%		
	No	144	76.60%		
Family history	Yes	44	23.40%	9.446	0.001
	No	32	17.00%		
Fast food	Yes	156	83%	0.909	0.635
	No	33	17.60%		
Soft drink (Cola)	Yes	155	82.40%	4.621	0.099
	No	187	99.50%		

Vegetables	Yes	1	0.50%	1	1.10%	0.244	0.559
	No	1	0.50%	1	1.10%		
Exercise	Yes	187	99.50%	94	98.90%	0.244	0.559
	No	115	61.20%	52	54.70%		
Audible intestinal sound	Yes	73	38.80%	43	45.30%	1.08	0.181
	No	105	55.90%	40	42.10%		
Distension	Yes	83	44.10%	55	57.90%	4.773	0.02
	No	145	77.10%	79	83.20%		
Weight loss	Yes	43	22.90%	16	16.80%	1.391	0.153
	No	158	84%	88	9236%		
Mucus in the stool	Yes	30	16%	7	7.40%	4.097	0.03
	No	174	92.60%	86	90.50%		
Blood in the stool	yes	14	7.40%	9	9.50%	0.347	0.353
	No	159	84.60%	78	82.10%		
Anorexia	Yes	29	15.40%	17	17.9%0	0.283	0.355
	No	188	100%	88	92.60%		
Laxatives	Yes	0	0%	7	7.40%	14.204	0
	No						

It is noticed that no or slight difference between dietary habit of both male and female where male like to consume junk food (83%) soft drink (82.4%), less healthy diet (99.5%) and female (84.3%), (82.1%), (98.8%) respectively but it was statistically insignificant. Male (99.5%) tend to exercise more than female (94%). Both male (60%) and female (59%) tend to postpone defecation with statistically insignificant. Audible intestinal sound (45.3%) and distension (58%) were more common in female than male (39%), (44%) respectively but it was statistically insignificant.

Alarming sign varied between male and female, but it was insignificant statistically. 23% male had weight loss versus 17% female and 16% complained of mucus in the stool versus 7.4% female. While females had slight predominance in anorexia (18%) blood in the stool than male (16%).

To relieve constipation female had to use more medication (7.4% versus zero male) and it was statistically significant ($p=0.000$) while male prefer to use enema 26.6% versus 16.8% female with statistically insignificant.

DISCUSSION

To the best of knowledge, this is one of the first studies that focus on screening constipation among medical students and its association with lifestyle habits, dietary habits, chronic diseases and psychological status.

In total of 283 studied students, about 26.5% of them suffered from constipation, with slight female predominance (55%) than males (45%), this is in agreement with proved that constipation is much more common in females 69.8% than males 30.2% [4]. The study proved that there is no relation between age and constipation that go along with study conducted by concluded that “there is no definite association between age and constipation”.

The study suggested that there is no relationship between constipation and smoking, but this in contrast with also proved that “stopping smoking can cause constipation and defined it as tobacco withdrawal syndrome”; the difference may due to small sample size, different studied group [5].

The study proposed that no apparent association between BMI and constipation and this in contrast with who stated that “there may be an association between higher BMI level and the low education level with

constipation in Iranian women and 60% of constipated participants had BMI values exceeding 25 kg/m². This divergence due to racial factor and different sample, “most of studied students had normal BMI values between (20.2:24.5) kg/m²”.

The study doesn't notice any associations between certain chronic diseases and constipation this is in disagreement with the finding of the study conducted by stated that “Constipation is a multifactorial problem, and may be a result of some organic conditions”. The discrepancy may due to most of the participant have healthy life and normal BMI and only 2.1% suffer from chronic disease.

It noticed that most of the studied students consumed unhealthy food; consume more junk food, soft drink with less healthy diet; less fibres and vegetables. This is contributing factor for prevalence of constipation in studied participant and this in agreement with who concluded that “irregular eating habits and inadequate fibre intake are risk factors for constipation”. World Health Organization, 2007 raised awareness about, “a high-fibre diet based on fruit, vegetables, whole grains and legumes is recommended to prevent constipation”. While Food and Nutrition Board recommended a daily fibre intake is 25 g/day for females and 38 g/day for males is a minimum amount to prevent constipation [6,7].

From the questionnaire, it was observed that medical students prefer soft drink; Cola, than water and may be one of causal factor for constipation and this in agreement with who described that “Hydration is so important in preventing constipation”, Murakami who reported that low water intake was associated with an increasing prevalence of constipation.

The participants were active and didn't prefer sedentary life, however, most of them suffer from constipation that concluded that no relation between exercise and constipation, this is in contrast with Rong Huang who proved that “lack of physical activity and sedentary life are strongly associated with constipation”, and advised for regular exercise and sufficient physical activity. This discrepancy may due to dietary habit is main contributing factor for constipation.

The study observed that less than of students have alarming sign; weight loss, anorexia, distension, mucus and blood in the stool, that in agreement with Mehler PS who proved that constipation commonly accompanies the weight loss of anorexia nervosa and this is due either to drastically reduced caloric intake, which results in reflex hypo functioning of the colon, or to slow colonic transit.

Regard dietary habit, the survey showed no significant difference between male and female; this in agreement with who stated that insignificant difference in prevalence, physical symptom and dietary habit [8,9]. Alarming sign was slightly higher in male than female except anorexia which is more common in female this is in contrast with who stated that comorbidity related to constipation between male and female, this may attributed to difference in ethnicity and the target group is medical students only.

CONCLUSION

Under the conditions of research study on 5th grade medical students, it is to be concluded that 26.5% of them suffer to constipation and related more poor dietary habit and stress than smoking, exercise and BMI. The prevalence of constipation was significantly higher in female in comparison to males (55% vs. 45% respectively), however insignificant difference in dietary habit, but alarming sign was slightly higher in male than female.

RECOMMENDATIONS

Encourage healthy diet with high fibre and vegetables, omit processed fast food and ensure enough water intake among young group lead to

decrease the burden of the disease.

Exercise and normal BMI have a vital impact on other body systems especially constipation.

LIMITATIONS

Although it's large sample size, involvement of multiple variables that were available based on PCS questionnaire. Limitations of the study are its cross-sectional design, single centre only and age restriction only to 5th grade medical student Accordingly, the study may not be fully able to explain the cause-effect associations.

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CONFLICTS OF INTEREST

No conflict of interest to disclose and the study have no external funds.

ETHICS APPROVAL

The study will be only data collection from the medical students through online questionnaire with no identification of anyone. Ethical approval from the IRB will be taken. All data are confidential.

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