

Bowel Habits in Normal Iraqi Population

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Abstract

Background: Knowledge About bowel habits in healthy Iraqi population is limited.

Objective: To establish a basic data about the bowel habits (consistency and frequency) in a sample of healthy Iraqi population; in addition to learn about their definition of constipation and diarrhea.

Methods: Prospective study that had enrolled 950 randomly selected healthy persons of different age group who had attended Al-Yarmouk Teaching Hospital or visiting their patients at the hospital during the period from January 2000-June 2000. Questionnaire forms had been distributed to all of the included persons and it included detailed history of the bowel habits and definitions of constipation and diarrhea according to the subjects' descriptions.

Results: Five hundreds fifty three persons responded to the questionnaire. 523 (94.6%) of the respondents had a normal frequency (3-21/week). 469 (84.4%) have a doughy (paste) consistency . Most of the respondents with less frequent and hard stool were female (5.9%), in comparison to the male gender (1.2%), while the respondents with more frequent stool were male (2%), in comparison to female gender (1%).Of the respondents 7.7% had bleeding per rectum once or more in their life, only less than half of them sought the advice of their physician. Increased "liquidity" was the main definition of diarrhea while "straining" was the main definition of constipation.

Conclusions: This study showed that, most of the studied population had rather normal frequency of stool. Those subjects with less frequent and pellety stool were mainly females compared to predominant male gender in the group with more frequent and liquid stool type.

Blood was not always an alarming feature to seek the medical advice. Different definitions of diarrhea and constipation were used by the subjects , emphasizing the importance of the determination of the exact meaning of the patient's description during the interview.

Keywords: Bowel habits, Normal population, Iraq.

Introduction:

Clinician and investigators sometimes consider the normal range of bowel habit and frequency as between 3 to 21 motions per week^(1,2,3). Stool frequency out side the normal range may be unusual but may not be abnormal in the sense of a disease⁽¹⁾. And according to the consistency, the normal stool ranges from porridge like to hard and pellety⁽³⁾.

People on the other hand are concerned with the ease of passage and consistency rather than stool numbers. On an average day 9 liters of fluid enters the gastrointestinal tract: 2 liters by direct ingestion, one liter as saliva, 2 liters gastric juice, 4 liters as biliary, pancreatic and small intestine secretions, on passage through the small intestine 4-5 liters of fluid is reabsorbed in the jejunum and 4-5 liters in the ileum. Therefore approximately one liter of residual fluid enters the colon, where an additional 800 ml is reabsorbed before passage to the rectum and evacuation. Over all excreted in the feces is approximately 200 mg/day^(3,4).

A variety of neural and non-neural mediators regulate colonic ion transport and motility but the precise mechanism is not well known⁽⁴⁾.

Heaton et. al. mentioned in their study on a random sample, that the most common bowel habit was once daily, this was a minority practice in both sexes, a regular 24 hour cycle was apparent in only 40% of men and 33% of

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women. Another 7% of men and 4% of women seemed to have a regular twice or thrice daily bowel habit. A third of women defecated less often than daily and 1% once a week or less. Stools at the constipated end of the scale were passed more often by women than men. Age has little effect on bowel habit or stool type⁽²⁾.

Normal stool types, defined as those least likely to evoke symptoms, accounted for only 56% of all stools in women and 61% in men. Most defecations occurred in the early morning and earlier in men than in women. They concluded that conventionally normal bowel function is enjoined by less than half of the population⁽²⁾.

Roig-Vila et. al. studied the defecation habits in a normal working population in Valencia (Spain). They found that the average number of stools was 7.1 + 3.3 per week, and 62.4% of subjects they were between the range of 5 and 8. Bowel movement were less frequent in women than in men, nevertheless there were no differences in regard to age. Although this survey has revealed that a normal function is very variable, only a 7.5% of the subjects consulted a doctor for bowel complaint⁽⁵⁾.

Tally et. al. from Australia in a study aimed to determine the perceptions of diarrhea in the general population, the results showed that 3.5% reported their usual bowel pattern as diarrhea alone, whereas 9% reported alternating diarrhea and constipation. Among subjects with self-reported diarrhea, loose or watery stools and urgency were the commonest diarrheal symptoms, whereas in those with an alternating bowel habit a feeling of incomplete evacuation was the most common diarrheal symptom⁽⁶⁾.

On the other hand dey-Ab from new Delhi (India), stated on a review article that there was a wide variation in the population normal bowel habit, also there was no standard definition for the normal bowel habit⁽⁷⁾.

Aim of the study:

Because of that information about normal bowel habits in our population is limited, this study was performed to establish a basic general information and data about the pattern of bowel habit (consistency and frequency) in a sample of healthy Iraqi population, in addition to their definition of diarrhea and constipation.

Patients and Methods:

This prospective study was conducted at Al Yarmook teaching hospital during the period between Jan. 2000 – Jun. 2000. It had enrolled 553 randomly selected healthy visitors and companions of patients admitted to the different wards of the hospital were selected randomly for the questionnaire, those on regular drugs intake for different reasons or those known to have chronic diseases were excluded.

Statistical analysis was performed for the collected data and was presented in simple measures of mean, standard deviation, frequency, and percentage. Testing of the significance of difference was done using Chi-square test and 0.05 was used as the level of significance.

Results:

This study had included 553 persons who had responded to the questionnaire concerned with bowel habits among normal subjects. 221 out of the 248 male respondents (89.1% of the total male respondents) had normal consistency, 10 (4%) had loose stool, and 17 (6.9%) had hard pellety stool. Of the 305 female respondents, 248 (81.3%) had normal consistency, 8 (2.6%) had loose stool, and 49 (16.1%) hard pellety stool. Table-1 shows distribution of the respondents according to their gender and their stool consistency.

Two hundreds forty out of 248 male respondents (96.8% of total male respondents) had their frequency fall in the accepted normal range, while 5 (2%) of them had more frequent motion than normal and 3 (1.2%) had less than 3 motions per week. However, 283 of the respondent females had accepted normal range of frequency and 4 (0.9%) had more than 21 motion per week and 18 (5.9%) had less than three motions per week. Table-2 shows distribution of the respondents according to their gender and frequency of defecation.

40 persons (7.7%) of the total reported blood in their stool, 13 subject (32.5%) of them had hard stool, while in 3 (7.5%) the stool was in liquid form, 24 (60%) had normal (doughy) stool type. Those who visited the doctor are 16 (40%), 6 (37.5%) of them with hard consistency, 2 (12.5%) were liquid, 8 (50%) were normal

consistency, those 24 (60%) who did not visit the doctor had normal consistency (14, 58.3 %), liquid in 8 respondents (33.3%) and 2 respondents (8.3 %) with hard stool. Table-3 shows distribution of the respondents who had reported blood in their stool according to stool consistency and whether they consulted their physicians or did not.

As regard the definition of diarrhea 214 (38.6%) of the respondents defined it as an increased liquidity, followed by 88 (15.9%) used the increased frequency as diarrhea, then by 68

(12.3%) defined it as both increased frequency and liquidity and 42 (7.6%) as abdominal pain only, while the definition of constipation included firstly 186 (33.6%) as difficulty in defecation (straining), then 85 (15.4%) as increased consistency of stool, straining and increased consistency (hard stool) in 57 (10.3%), 19(3.5%) defined it as abdominal pain and increased consistency. Table-4 shows distribution of respondents according to their definition of diarrhea and constipation.

Table 1: The consistency of stool in relation to gender in the respondents

Gender	Normal	Loose	Hard
Male (248)	221 (89.1%)	10 (4%)	17 (6.9%)
Female (305)	248 (81.3%)	8 (2.6%)	49 (16.1%)

Table 2: Frequency of defecation of respondents group in relation to gender

Gender	> 21/week	3/Day	2/Day	1/Day	≥ 3/Week	< 3/week
Male (248)	5 (2.1%)	33 (13.3%)	76 (30.6%)	119 (47.9%)	12 (4.9%)	3 (1.2%)
Female (305)	4 (1%)	13 (4.2%)	51 (16.8%)	192 (63.3%)	27 (8.9%)	18 (5.9%)

Table 3: distribution of the respondents who had reported blood in their stool according to stool consistency and whether they consulted their physicians or did not

Stool Consistency	Consulted their physicians		Did not consult their physicians	
	No	%	No	%
Normal	8	50%	14	58.3%
Loose	2	12.5%	8	33.3%
Hard	6	37.5%	2	8.3%
Total	16	100%	24	100%

Discussion:

There are wide variations in normal bowel habit and there is no standard definition, however clinicians agree that the frequency is between 3-21 motions /week and the consistency is from porridge like to pellety.

Table 1 demonstrate different consistencies in relation to gender where (84.8%) of the total had doughy consistency, equally distributed in both sexes. This is similar to Heaton's study that he reported (60%) of the surveyed population to have normal consistency, again it is equally distributed between both genders⁽²⁾.

Table 2 shows the frequency of defecation in relation to gender, where (94.6%) had normal range of defecation (3-21 motions/ week), which is equally divided between male and female. However, there is a significant difference between both sexes when we compare the bilateral extremes. In frequency we find that (5.9%) of females had frequency of less than (3 motion / week) compared to only (1.2%) of male gender ($P = 0.000001$), and (14.8%) of female had less than 1 motion a day compared to (6%) of male. Similarly Heaton *et. al.* in their study of the East Bristol population found that clear sex related differences in bowel habit of less than once daily⁽²⁾. A consistent observation reported by Hammond *et. al.* who presented findings on physical complaints from a prospective study of 1,064,004 men and women who were surveyed by American cancer society

volunteers⁽¹⁾. In the youngest age stratum (30-34 year), (12.5%) of the men and (27.9%) of the women reported "constipation". Women were more likely to report constipation than men, the differences in bowel function may not be fully explained by sex differences in reporting, there are physiologic studies that suggest a possible role for hormonal factors⁽⁸⁾.

Table 4 showed that increased "liquidity" alone is the most common definition of diarrhea (38%), then frequency alone (15.9%), then both increased frequency and liquidity of the stool (12.3%), similarly Sandler reported the same distribution of definition being in liquidity (84%) then frequency (26%) but with higher percentage, the term liquidity in our study is used in 67.5% in the total definitions alone or with other one.

Also the definition of constipation is commonly defined as "straining" which is the most common definition used by the study (33.3%) then increased consistency (Hard) (15.2%), then both straining and abdominal pain (7.6%) again this is similar to the distribution of definitions reported by Sandler (52%) for straining, (44%) for hard stool⁽⁵⁾. Straining in our study group is used by over 59% of the definitions either alone or with other one.

Lastly, we found (24/40 person) (60%) of those having blood in their stool had a normal "doughy" consistency of stool, only one third

of them visited the doctor and (32.5%) had hard stool, half of them consulted the doctor, 7.5 percent of persons who had blood in stool had liquid motion but interestingly two third of them consulted the doctor for their stool. Looking at table 3 we find that the most common definition of diarrhea is liquidity while straining was considered to be the definition of constipation in 59% of respondents. There may be an important implication to these results, if physicians define constipation as fewer than 3 stools / week, while a good percentage of subjects consider straining is the definition of constipation. Accordingly, clinician must determine the meaning of their patient complaint and search for common language in order to diagnose and treat accordingly.

In conclusion, most of our population had the frequency of their bowel motion of 3-21 motions/week and of doughy nature. Women are more prone for less frequency than men. The respondent used varied definition for constipation and diarrhea, the most commonly used definition was "straining" for constipation and increased "liquidity" for diarrhea. Bleeding per rectum was not considered an alarm symptom to seek the advice of the doctor invariably especially when it was associated with rather doughy (normal) consistency of stool, but association with liquidity of stool was of more alarm to the persons, where two third of them sought the advice of the doctor. It to emphasis the importance of determination of the exact meaning of the patient's complaint will help for better management, and increase public education for seeking medical advice in situation of alarming features which are essential in the prevention of serious gastrointestinal disease.

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