

Pattern of Gastrointestinal Diseases among Elderly Patients in Arar City, Kingdom of Saudi Arabia (KSA)

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ABSTRACT

The world's population is aging and the number of people who are ≥ 60 years old increased worldwide. The elderly population is susceptible to various benign and malignant diseases. Gastrointestinal diseases are among the common health problems that affect the elderly. **Aim of the study:** to identify the pattern of gastrointestinal diseases among elderly patients in Arar city (KSA) and the relation with gender in the study population. **Subjects and methods:** a cross sectional study was conducted in five randomly selected primary healthcare centers in Arar city (KSA), from September 2016 to March 2017. It included 118 elderly patients. A questionnaire was designed for data collection about socio-demographic variables, smoking, BMI, chronic diseases and types of gastrointestinal diseases among participants. **Results:** findings showed that all participants suffered from dental problems and 24.6% had gum problems. Other diseases affected various proportions of the studied elderly population including loss of appetite, gastric regurgitation, chronic constipation, irritable bowel syndrome, chronic colitis, peptic and duodenal ulceration, liver cirrhosis, viral hepatitis, cholecystitis, gall stones, pills, anal fissure and GIT tumors. Statistically significant differences were found between males and females regarding having piles, gall stones and anorexia. On contrary, all other GIT diseases showed insignificant differences between males and females. **Conclusion:** different types of GIT diseases were found among the participants with varying rates. Significant gender differences were observed in some diseases (piles, gall stones and loss of appetite) while most of the studied GIT diseases showed insignificant differences between both sexes.

Keywords: gastrointestinal diseases; pattern, elderly.

INTRODUCTION

The world's population is aging and the number of people who are ≥ 60 years old increased worldwide and expected to reach 21.1% of the population by 2050^[1]. Ageing is a complex process^[2] and as age advances there is an increased risk for developing various diseases due to the progressive deterioration of many organs and systems^[3].

The elderly population is susceptible to various benign and malignant diseases. Prevalence of arterial hypertension and diabetes and cancer mortality rates increase with age. Additionally, osteoarthritis, infections and upper gastrointestinal diseases are common in the elderly^[2]. Furthermore, aging is frequently accompanied by decreased taste acuity, deteriorating dental health, and a decline in physical activity, all of which may result in poor nutrition^[4].

Gastrointestinal diseases are among the common health problems that affect the elderly. They are also likely to be taking many medications which can also affect bowel function^[5]. There is a wide variation in the gastrointestinal function in the old age where basic digestive functions may remain efficient; or functional

alterations of motility, secretion, and/or absorption may develop giving rise to functional digestive diseases; while others may develop diseases that are more frequent and/or more severe^[6].

Constipation is among the common gastrointestinal diseases affecting the elderly. About 30 % of the general population had constipation during life time^[7, 8], with elderly people and women being mostly affected. Constipation is more common among elderly patients who admitted to hospital or nursing homes for long periods^[8, 9].

Gallstone disease is another problem which is age-associated^[10, 11] and elderly patients are frequently affected by gallstone disease. According to a cross-sectional survey in Italy, the overall prevalence of gallstone disease was 26.7% in the elderly and multiple gallstones were particularly frequent, occurring in 62.7% of patients^[12]. Another study revealed that cholecystitis-associated gallbladder and common bile duct stones are present in 16% of elderly patients undergoing cholecystectomy^[12, 13].

Regarding irritable bowel syndrome (IBS), patients are commonly between the ages of 30 and

50^[5]. However, there is very little data on whether the condition persists into old age, and no information on how it manifests itself in the elderly or its prevalence among the elderly population. Tooth loss is another problem that was reported in elderly population by several studies^[14, 15].

Another example of gastrointestinal diseases is gastric cancer which is among the most common malignant disease and the leading causes of cancer-related deaths globally^[16]. With the increasing life expectancy, gastric cancer incidence in elderly patients has been increasing^[17]. Moreover, elderly patients might have poorer prognoses compared with younger patients and this can be explained by the increased risk of postoperative complications^[16].

So, this study was conducted to identify the pattern of gastrointestinal diseases among elderly patients in Arar city in the Northern Province of Kingdom of Saudi Arabia and the relation with gender in the study population.

SUBJECTS AND METHODS

Study design and setting:

The current study is a cross sectional study conducted in Arar city in the Northern Province of Kingdom of Saudi Arabia, during the period from September 2016 to March 2017.

Study participants

The population of the present study consisted of 118 elderly patients attended five randomly selected primary healthcare centers in Arar city in the Northern Province of Kingdom of Saudi Arabia. The selected primary healthcare centers were reviewed regularly during the study period and the participants were selected randomly and were invited to participate in the study. They were included in the study after taking an informed consent. Each person was interviewed separately, and their files were examined to collect the needed data and fill the questionnaires. The elderly is defined as 60 years old or more. Exclusion criteria included patients who refused to participate in the study.

Data collection method

Collecting patients' data was conducted through interviewing the patients included in the study and reviewing their medical files. A predesigned questionnaire was used for data collection and included inquiries about socio-demographic data of the studied patients, smoking, body mass index (BMI), chronic diseases and types of gastrointestinal diseases among them.

Ethical consideration

This study was reviewed and approved by the Research Ethics Committee of Faculty of Medicine, Northern Border University. Written informed consent after explaining the purpose of the study was obtained from all patients who participated in the study. The questionnaires used in data collection were anonymous and confidentiality of data was assured.

Statistical analysis

The statistical analysis was carried out using SPSS software for Windows (version 15.0). Sample characteristics were summarized as numbers and percentages for qualitative variables. Chi-Square test was used for testing the association between sex and other sociodemographic variables, smoking, BMI and the pattern of distribution of gastrointestinal diseases among the studied population. A 5% level was chosen as a level of statistical significance in all statistical tests used in the study.

RESULTS

The current study included 118 elderly patients attended the selected primary healthcare centers in Arar, KSA, during the study period and accepted to participate in the study. Females were more than males (55.9% Vs 44.1%). The majority of the studied elderly (73.7%) were between 60 and 70 years of age. More than one fifth of participants (21.2%) were between 70 and 80 years of age and only 5.1% were older than 80 years. Regarding the marital status, 81.4% of the studied elderly were married, 10.2% were widows, 4.2% were divorced and 4.2% were single. More than 2 thirds (71.2%) had nuclear family and 28.8% live with extended families. Most of the studied elderly were obese (40.7%) and overweight (32.2%) while those with normal weight represented only (25.4%). Smokers constituted 22% of the studied population and 23.7% reported stress exposure. About half of participants (48.3%) reported spicy food preference (**table 1**).

Table 2 presented the relationship between sociodemographic data, smoking and BMI group and sex of the studied elderly population. Statistically significant differences were found between males and females regarding age, marital status and smoking ($p < 0.05$). On the other hand, family type and body mass index showed insignificant differences between males and females ($p > 0.05$).

Table 3 showed chronic diseases and GIT diseases among the studied elderly population. As shown

by the presented data, 18.6% of the studied population had hypertension and the same proportion had diabetes. More than one third (35.6%) of the studied elderly were both hypertensives and diabetics. All the participants suffered from dental problems and about one quarter (24.6%) had gum problems. About one half (48.3%) of the participants suffered from loss of appetite and near one third (32.2%) had gastric regurgitation. Chronic constipation and irritable bowel syndrome was reported by more than one third of the studied elderly (35.6% and 36.4%). Chronic colitis was found in 20.3%. Peptic and duodenal ulceration was found in 16.1% and 6.8% respectively. Other GIT problems were found among the studied elderly such as liver cirrhosis (2.5%), viral hepatitis (2.5%), cholecystitis (18.6%), gall stones (17.8%), pills (16.1%), anal fissure (7.6%) and GIT Tumors (3.4%)

Table 4 described the relationship between different pathological GIT conditions and sex of the studied elderly population. Statistically significant differences were found between males and females regarding suffering from piles, gall stones and loss of appetite ($p < 0.05$) where the percentage of males who had piles was significantly higher than females (25% vs. 9.1%, $p=0.024$) and the percentage of males who suffered from gall stones was significantly higher than that of females (26.9% vs. 10.6%, $p=0.02$) while the percentage of females who had loss of appetite was significantly higher than that of males (56.1% vs. 38.5%, $p=0.043$). On the other hand, all other GIT diseases detected among the studied population showed insignificant differences between males and females ($p > 0.05$).

Table (1): Sociodemographic characters, BMI group, smoking, Stress exposure and spicy food use among the studied elderly population, Arar, Saudi Arabia

	No. (n=118)	Percent
Age group		
60-	87	73.7
70-	25	21.2
80+	6	5.1
Sex		
Male	52	44.1
Female	66	55.9
Marital Status		
Single	5	4.2
Married	96	81.4
Widow	12	10.2
Divorced	5	4.2
Family		
Nuclear	84	71.2
Extended	34	28.8
BMI group		
Underweight	2	1.7
Normal	30	25.4
Overweight	38	32.2
Obese	48	40.7
Smoking		
Smokers	26	22.0
Non & ex-smokers	92	78.0
Stress exposure		
Yes	28	23.7
No	90	76.2
Preferring Spicy Food		
Yes	57	48.3
No	61	51.7

Table (2): relationship between sociodemographic data, smoking and BMI group and sex of the studied elderly population, Arar, Saudi Arabia

	Sex		Total (n=118)	Chi-Square	P value
	Male (n=52)	Female (n=66)			
Age group					
60-	33	54	87	6.526	0.038
	63.5%	81.8%	73.7%		
70-	14	11	25		
	26.9%	16.7%	21.2%		
80+	5	1	6		
	9.6%	1.5%	5.1%		
Marital Status					
Single	0	5	5	8.25	0.041
	.0%	7.6%	4.2%		
Married	48	48	96		
	92.3%	72.7%	81.4%		
Widow	3	9	12		
	5.8%	13.6%	10.2%		
Divorced	1	4	5		
	1.9%	6.1%	4.2%		
Family					
Nuclear	39	45	84	0.65	0.27
	75.0%	68.2%	71.2%		
Extended	13	21	34		
	25.0%	31.8%	28.8%		
Smoking history					
Smokers	21	5	26	18.22	0.000
	40.4%	7.6%	22.0%		
Non/ex-Smokers	31	61	92		
	59.6%	92.4%	78.0%		
BMI group					
Underweight	0	2	2	2.390	0.495
	.0%	3.0%	1.7%		
Normal	15	15	30		
	28.8%	22.7%	25.4%		
Overweight	15	23	38		
	28.8%	34.8%	32.2%		
Obese	22	26	48		
	42.3%	39.4%	40.7%		

Table (3): Chronic diseases and GIT diseases among the studied elderly population, Arar, Saudi Arabia

Diseases	Frequency (n=118)	Percent
Chronic diseases		
No chronic disease	32	27.1
Diabetes	22	18.6
Hypertension	22	18.6
Both	42	35.6
Dental problems		
Yes	118	100
Gum problems		
Yes	29	24.6

Diseases	Frequency (n=118)	Percent
No	89	75.4
Loss of appetite		
Yes	57	48.3
No	61	51.7
Gastric reg.		
Yes	38	32.2
No	80	67.8
Chronic constipation		
Yes	42	35.6
No	76	64.4
IBS		
Yes	43	36.4
No	75	63.6
Chronic Colitis		
Yes	24	20.3
No	94	79.7
Peptic Ulcer		
Yes	19	16.1
No	99	83.9
Duodenal Ulcer		
Yes	8	6.8
No	110	93.2
Liver Cirrhosis		
Yes	3	2.5
No	115	97.5
Viral hepatitis		
Yes	3	2.5
No	115	97.5
Cholecystitis		
Yes	22	18.6
No	96	81.4
Gallstones		
Yes	21	17.8
No	97	82.2
Piles		
Yes	19	16.1
No	99	83.9
Anal Fissure		
Yes	9	7.6
No	109	92.4
Appendix removal		
Yes	5	4.2
No	113	95.8
GIT Tumors		
Yes	4	3.4
No	114	96.6

Table (4): relationship between different pathological conditions and sex of the studied elderly population, Arar, Saudi Arabia (there is overlapping in numbers)

Pathological conditions	Sex		Total (n=118)	Chi-Square	P value
	Male (n=52)	Female 2(n=66)			
Anal Fissure	6	3	9	2.019	0.142
	11.5%	4.5%	7.6%		
GIT Tumors	2	2	4	.059	0.808
	3.8%	3.0%	3.4%		
Piles	13	6	19	5.449	0.024
	25.0%	9.1%	16.1%		
Gall stones	14	7	21	5.293	0.020
	26.9%	10.6%	17.8%		
Cholecystitis	10	12	22	0.025	0.534
	19.2%	18.2%	18.6%		
Liver cirrhosis	1	2	3	0.14	0.58
	1.9%	3.0%	2.5%		
Duodenal Ulcer	5	3	8	1.183	0.235
	9.6%	4.5%	6.8%		
Peptic ulcer	7	12	19	0.480	0.323
	13.5%	18.2%	16.1%		
Chronic colitis	8	16	24	1.408	0.170
	15.4%	24.2%	20.3%		
IBS	16	27	43	1.29	0.173
	30.8%	40.9%	36.4%		
Chronic constipation	17	25	42	0.341	0.349
	32.7%	37.9%	35.6%		
Gastric regurgitation	17	21	38	.010	0.538
	32.7%	31.8%	32.2%		
Gum problems	10	19	29	1.433	0.136
	19.2%	28.8%	24.6%		
Loss of appetite	20	37	57	3.607	0.043
	38.5%	56.1%	48.3%		

DISCUSSION

The current study included 118 elderly patients attended the five randomly selected primary health care centers in Arar city in the Northern Province of Kingdom of Saudi Arabia.

The current study showed that smokers represented 22% of the studied elderly which is lower than the findings of a study conducted by name of author [18] and revealed that 35.7 % of the participants were tobacco smokers. The same study found a statistically significant difference between males and females regarding smoking (p <0.05) which is consistent with the findings of the current study. Obese participants in the current study constituted 40.7% of the studied elderly which is much higher than the findings of name of author [19] who found that only 2.4 % of the participants were obese and the findings of another study was conducted [20] where only 2.7%

of the studied elderly were obese. This wide variation may be explained by different cultures and life style of the studied populations.

In the current study, body mass index showed insignificant differences between males and females which is in line with the findings of name of author [19, 20].

The current study revealed that 18.6% of the studied population had hypertension and the same proportion had diabetes. More than one third (35.6%) of the studied elderly were both hypertensive and diabetics. In the study conducted by [18], 19.5 % of the studied elderly had diabetes mellitus which is near to the findings of the current study. Findings of a study conducted in geriatric clinics in India [21] revealed that hypertension was the most commonly reported physical diagnosis (50%) and 13% of the studied elderly had diabetes which is inconsistent with the

findings of the current study. The study conducted by [20] revealed that 35.8% of the studied elderly were hypertensive.

On assessment of the pattern of GIT diseases among the studied population, all the participants suffered from dental problems and near one quarter (24.6%) had gum problems. In a study conducted by name of author [22] nearly all the studied elderly had dental problems and the prevalence of gingival bleeding was 16%. About one half (48.3%) of the participants suffered from loss of appetite which is higher than the findings of a study conducted by name of author [5] and revealed that 34.1% of the studied elderly had poor appetite and the findings of name of author [23] who reported that the prevalence of anorexia among the studied elderly was 21.2%.

According to the findings of the present study, about one third (32.2%) had gastric regurgitation which is much higher than the results of a study conducted by name of author [24] in which only 7.86% had acid peptic disease.

Chronic constipation and irritable bowel syndrome was reported by more than one third of the studied elderly (35.6% and 36.4%) which is much higher than the findings of name of author [21] where only 8% of the studied elderly suffered from constipation and the findings of name of author [24] where constipation was found in 3.14% of the studied elderly only. In the study conducted by name of author [5], 22% of the studied elderly population suffered from irritable bowel syndrome which is lower than the findings of the current study.

The findings of the current study revealed that 16.1% of the studied elderly had pills which is lower than the findings of a study conducted by [25] and showed that the prevalence of pills among patients aged 60 years or older was 40.8%.

GIT tumors were found in 3.4% of the studied elderly in the current study which is higher than the findings of [3] where 2% of the participants had esophageal or gastric tumors.

The current study showed insignificant differences between males and females regarding suffering from some gastrointestinal diseases like irritable bowel syndrome ($p > 0.05$) which is supported by the findings of [5]. Another study conducted by [26] revealed that sex was not significantly associated with suffering from certain diseases like irritable bowel syndrome, constipation and gastroesophageal reflux disease which is in line with the results of the current study. Statistically significant difference was found between males and females regarding suffering from piles where the percentage of

males who had piles was significantly higher than females (25% vs. 9.1%, $p=0.024$). On contrast, the findings of names of authors [25, 27] showed no significant differences between both sexes regarding suffering from piles while name of author [25] reported higher prevalence in females (40.78%) than in males (37.09%).

Furthermore, the percentage of males who suffered from gall stones was significantly higher than that of females (26.9% vs. 10.6%, $p=0.02$) which is in consistent with the findings of name of author [28] who reported that female sex was at significantly higher risk of suffering from gall stones than males. The percentage of females who suffered from loss of appetite was significantly higher than that of males (56.1% vs. 38.5%, $p=0.043$) which is in line with the findings of a previous study [23] and showed that anorexia was higher in women than men.

CONCLUSION

The current study included 118 elderly patients. The studied elderly patients were suffering of various gastrointestinal diseases where all of them suffered from dental problems and nearly one quarter (24.6%) had gum problems. Other diseases affected various proportions of the studied elderly population including loss of appetite, gastric regurgitation, chronic constipation, irritable bowel syndrome, chronic colitis, peptic and duodenal ulceration, liver cirrhosis, viral hepatitis, cholecystitis, gall stones, pills, anal fissure and GIT tumors. Statistically significant differences were found between males and females regarding suffering from piles, gall stones and loss of appetite ($p < 0.05$). On the other hand, all other GIT diseases detected among the studied population showed insignificant differences between males and females ($p > 0.05$).

STUDY LIMITATIONS

The limitation of the study is that it involved only the elderly patients who attended the selected primary health care centers and missed out those people who could not come to the centers.

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