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Assessment of the Knowledge of Gastroesophageal Reflux Disease among The Saudi Population of Altaif City

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ABSTRACT

Background: gastroesophageal reflux disease (GERD) ranks as one of the most common gastrointestinal disorders. Up to this date, no studies examined the level of health knowledge of Saudi population about GERD.

Aim of the study: this study aimed to assess knowledge about GERD signs, symptoms and risk factors in Saudi residents of Altaif City.

Methods: this minimal knowledge questionnaire that was distributed among the general public in Altaif City, Saudi Arabia. The questionnaire consisted of two sections: section 1 included personal data and section 2 explored the awareness and knowledge about the most common symptoms and risk factors of GERD. Only questionnaires without missing data were subjected to statistical analysis.

Results: respondents who answered all the questions correctly represented 7.4%, while those who answered all wrongly were 1.5%. The mean proportion of minimal medical knowledge (MMK) score was 64.66%. Respondents with higher education ($p < 0.001$), medical background ($p = 0.004$) and health knowledge derived from books ($p = 0.001$) achieved the highest total scores. Sex, residence, marital status, and past/family history of GERD seemed not to affect the mean MMK scores ($p = 0.277$, 0.234, 0.970, 0.873 and 0.085 respectively).

Conclusion: some symptoms (Globus sensation, dysphagia and odynophagia) and risk factors (Scleroderma and asthma) for GERD remained unknown to nearly half the participants. We recommend providing health information concerning GERD on the Internet or to prepare booklets to be distributed through the health care facilities.

Keywords: gastroesophageal reflux, symptoms, risk factors, knowledge questionnaire.

INTRODUCTION

Esophageal diseases may present with impaired function or pain. The major esophageal symptoms included heartburn, regurgitation, chest pain, dysphagia, odynophagia and globus sensation. The clinical history is the key for evaluation of esophageal symptoms. Important details included weight gain or loss, gastrointestinal bleeding, dietary habits, smoking and alcohol consumption [(1)].

Gastroesophageal reflux disease (GERD) is one of the most common chronic digestive disorders. It results from lower esophageal sphincter dysfunction and/or large hiatal hernia. The prevalence of GERD was reported to be as high as 20% in Western world with much lower rate in Asia [(2,3)].

Classical symptoms of GERD included heartburn and regurgitation, which were the main drive for patients to seek medical attention and the target for diagnostic evaluation and treatment. The current body of evidence showed that GERD may significantly reduce the quality of life and lead to serious complications, such as gastrointestinal bleeding or Barrett's esophagus [(4,3).]

Genetic, lifestyle (including nutrition, alcohol consumption, smoking, intake of NSAIDs, sleeping position) and dietary factors have been suggested to play important roles in the development of GRED, however the exact etiology is still unknown [(5,6,7)].

The clinical history is of great importance for the evaluation of esophageal symptoms and eventually the management of the condition. It is essential for patients with GERD to early recognize the symptoms of the disease and seek medical assistance. Hence, the purpose of this study was to document knowledge about GERD signs, symptoms and risk factors in Saudi residents of Altaif City.

METHODS

Ethical considerations

This study design was approved by the institutional review board of the Faculty of Medicine, Altaif

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University. An informed consent was obtained from each participant.

Study design

The study employed a quantitative descriptive design. The researchers interviewed 202 participants who were Saudi Nationals living in Altaif City, more than 18 years of age. The sampling method used was a non-random, purposive sampling. The target population that meets the criteria was taken in as participants of this study.

Research Instrument

The questionnaire included the demographics (age, gender, residence, family status, level of education, economic status, place of work, history of GERD, family experience of GERD and sources of information). Adopting the "minimal medical knowledge" (MMK) questionnaire focusing on the basic questions on common signs and symptoms and risk factors, the researchers developed 1 question with 6 subjects for the most common symptoms of GERD and 1 question with 7 subjects, which explore the risk factors responsible for developing GERD. The answer could be either yes or no. The correct answer for all questions wajs "yes". The questions were lifted from the related literature. Five experts in the field were consulted for content validity. This questionnaire could be completed within 5 minutes at maximum.

Statistical analysis

Data analysis was carried out using SPSS version 22. All variables were checked for normality with **Shapiro Wilk test**. The results were reported as means and standard deviations for continuous variables (age, scores) and as frequencies and percentages for categorical variables (sex, residence, occupation, education, history of GERD, family experience of GERD and frequencies of correct answers). Differences between participants were assessed using Independent samples t test for continuous variables. P-value of < 0.05 was considered statistically significant.

RESULTS

In this study, 202 participants were recruited. Male participants outnumbered females (74.3% vs 25.7% respectively). The majority of respondents resided in urban areas (79.2%). Slightly more than half the respondents were single (51.5%). A high frequency of the participants was well educated: 61.4% attended University, 21.8% had secondary education and 12.9% had post-graduate degrees. The highest frequencies were professionals followed by students (43 and 30.2% respectively). Responders who have a medical background - as health professionals or paramedics - constituted 29.2%. Approximately one third of the respondents had a personal experience of GERD and 43.6% had a family history. Among the sources of the respondent's information about GERD, internet and books had the highest frequency (32.2% each), followed by health professionals (25.7%) and lastly T.V. (9.9%) **(Table 1).**

A high frequency of the respondents answered correctly the questionnaire questions concerning GERD manifestations; heart burn, regurgitation and chest pain were identified by 90.1%, 85.1 and 66.3% respectively. On the other hand, a lower percentage identified globus sensation, dysphagia and odynophagia (58.9%, 57.4% and 50 % respectively). Most of the respondents recognized correctly the risk factors of GERD: smoking (81.2%), alcohol (80.2%), obesity (76.2%), hiatus hernia (73.8%), and pregnancy (64.9%). The less identified risk factors included scleroderma (28.7%) and asthma (27.7%) **(Table 2).**

The respondents who answered all the questions correctly (i.e. total score =100%) represented 7.4%, while those who answered all the questions wrongly (i.e. total score 0) constituted only 1.5%. The mean proportion of MMK score was 64.66%. The mean total scores proportions were significantly higher in respondents with higher education (secondary, high or postgraduate) (M = 64.86, 63.77 and 76.33) and medical background (M = 71.06) than those without ($p < 0.001$ and 0.004 respectively).

Additionally, respondents who derived their information about GERD from books achieved the highest total scores (M= 73.02, SD=18.75), followed by the Internet (M=64.14, SD=22.64), then health professionals (M=58.14, SD=22.31), while the least mean scores were based on information from T.V. (M=56.15, SD= 25.46). We didn't observe any significant differences in mean scores between males and females, urban and rural residents, single and married subjects, or those who had past/family history of GERD and those without ($p = 0.277$, 0.234, 0.970, 0.873, and 0.085) **(Table 3).**

Table (1): Sociodemographic data of the responders.

		N (Total =202)	%
Sex	Female	52	25.7%
	Male	150	74.3%
Residence	Rural	42	20.8%
	Urban	160	79.2%
Marital status	Single	104	51.5%
	Married	98	48.5%
Educational level	Primary	8	4.0%
	Secondary	44	21.8%
	High	124	61.4%
	Post-graduate	26	12.9%
Occupation	Employee	29	14.4%
	Professional	87	43.0%
	Worker	3	1.5%
	Student	61	30.2%
	Unemployed	9	4.5%
	Housewife	4	2.0%
	Retired	9	4.5%
ealth care professional/ paramedical	No	143	70.8%
	Yes	59	29.2%
History of GERD	No	131	64.9%
	Yes	71	35.1%
Family experience of GERD	No	114	56.4%
	Yes	88	43.6%
Sources of information	Internet	65	32.2%
	T.V.	20	9.9%
	Books	65	32.2%
	Health professional	52	25.7%

GERD: Gastroesophageal reflux disease; N: number.

Table (2): Frequency of correct answers for each question.

	N	%
Manifestations		
Heartburn	182	90.1%
Regurgitation	172	85.1%
Chest pain	134	66.3%
Globus Sensation	119	58.9%
Dysphagia	116	57.4%
Odynophagia	101	50.0%
Risk factors		
Smoking	164	81.2%
Alcohol	162	80.2%
Obesity	154	76.2%
Hiatus hernia	149	73.8%
Pregnancy	131	64.9%
Scleroderma	58	28.7%
Asthma	56	27.7%

Table (3): The total minimum knowledge score proportion in responders

		Total score proportion (%)				Tests of significance	
		Min	Max	Mean	SD	Statistic	p
All responders		0.00	100.00	64.66	22.44		
Sex	Female	23.08	100.00	67.31	19.02	t=1.093	0.277
	Male	0.00	100.00	63.74	23.50		
Residence	Rural	23.08	100.00	60.99	18.56	t=-1.193	0.234
	Urban	0.00	100.00	65.62	23.31		
Marital status	Single	0.00	100.00	64.72	22.80	t=0.038	0.970
	Married	0.00	100.00	64.60	22.17		
Educational level	Primary	15.38	84.62	39.42	22.31	F= 6.234	<0.001* Significant differences between primary vs secondary, high and post.
	Secondary	0.00	100.00	64.86	21.66		
	High	0.00	100.00	63.77	21.57		
	Post-gradua	23.08	100.00	76.33	21.53		
Health care professio ramedical	No	0.00	100.00	62.02	23.39	t= -2.898	0.004*
	Yes	30.77	100.00	71.06	18.64		
History of GERD	No	0.00	100.00	64.47	21.83	t= -0.160	0.873
	Yes	15.38	100.00	65.01	23.68		
Family history of GERD	No	0.00	100.00	62.28	22.54	t= -1.729	0.085
	Yes	15.38	100.00	67.74	22.06		
Sources of information	Internet	15.38	100.00	64.14	22.64	F= 5.832	0.001* Significant differences between TV vs books and books vs professionals
	T.V.	0.00	100.00	56.15	25.46		
	Books	0.00	100.00	73.02	18.75		
	Health professional	0.00	100.00	58.14	22.31		

Min: minimum; Max: maximum, SD: standard deviation; GERD: Gastroesophageal reflux disease; * significant at p <0.05.

DISCUSSION

Patients and lay persons should have a minimum knowledge level about the most common acute and chronic diseases; this knowledge is anticipated to improve their quality of life. Research concerning the level of health knowledge in the general public is limited; few studies evaluated patient knowledge and education of GERD. **Du Jeong and his co-workers**[8] conducted a study to assess the degree of knowledge in Korean patients with GERD**. Urnes and his colleagues** [9] investigated the effects of an educational program for Norwegian patients with GERD on disease knowledge. To the best of our knowledge, no studies have been conducted in Saudi Arabia to assess the level of health knowledge of Saudi people about GERD.

In this study, most of the respondents were males (74.3%), came from urban areas (79.2%) and achieved high and advanced levels of education. Responders who were expected to have good health knowledge, due to their professional background or a personal history of GERD, constituted approximately one third of the sample.

In the present study, the respondent's information about GERD was derived mostly from the internet and books (32.2% each) or health professionals (25.7%).

The main symptoms of GERD included heartburn, regurgitation, chest pain, dysphagia, odynophagia and globus sensation[(1).] In the current study the most identified GERD manifestations were heart burn (90.1%), regurgitation (85.1%), and chest pain (66.3%). The manifestations that were less identified included globus sensation, dysphagia and odynophagia (58.9%, 57.4% and 50 % respectively). **Du Jeong *et al.*** [(8)] also found that only 50% of his sample identified dysphagia as a symptom of GERD.

The two most typical symptoms of gastro-oesophageal reflux disease are heartburn and regurgitation; this may account for the high percentage of respondents who correctly recognized them. Heartburn is characterized by a painful retrosternal burning sensation for several minutes. Sometimes patients perceive reflux as an angina-like chest pain [(8).]

Risk factors of GERD included: use of alcohol, hiatus hernia, obesity, pregnancy, scleroderma and smoking [(11,12).]In the current study, the most recognized risk factors of GERD were smoking (81.2%), alcohol (80.2%), obesity (76.2%), hiatus hernia (73.8%) and pregnancy (64.9%). Scleroderma (28.7%) and asthma (27.7%) were recognized by a relatively small percentage of respondents. These results indicated that the respondents had a relatively good knowledge of the risk factors. However, more focusing on the less recognized risk factors by educational programs would be expected to decrease the rates and severity of GERD, particularly as many of the risk factors are preventable. Only 7.4% of the respondents in this study answered all the questions correctly and 1.5% of all participants answered all of them wrongly. The mean proportion of MMK score was 64.66%. These results are nearly similar to those obtained by **Du Jeong *et al.*** [(8)] who reported that only 9% of his sample answered all questions correctly.

In the current study sex, place of residence, marital status, and past/family history of GERD had no effect on the mean proportion of MMK score. The level of education seemed to influence the mean proportion of the score. Those with secondary, high or postgraduate degrees had significantly higher total scores than those with primary education only. Moreover, the source of health education affected the respondents knowledge as those who learned about GERD from books had the highest scores, followed by the internet, then health professionals, while the least mean scores were for information derived from T.V. These findings suggested that individuals tend to learn medical information (and achieve the best results) mostly through health books and the internet; therefore, future health educational programs should better be delivered through these means.

CONCLUSION

Despite the high educational level of most respondents, some symptoms (globus sensation, dysphagia and odynophagia) and risk factors (Scleroderma and asthma) for GERD remained unknown to nearly half the participants. Educational programs for GERD should focus on these points. It is recommended to make the health information concerning GERD available on the internet or to prepare handouts or booklets to be distributed through the health care facilities.

LIMITATIONS

This study had some limitations. A high frequency of our participants had a higher education than average. Nearly third the participants had a medical background. These two factors may have influenced the mean scores.

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