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ORIGINAL PAPER

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Awareness and Utilization of ROME Criteria for Diagnosis of Irritable Bowel Syndrome among Primary Care Physicians in Riyadh, Saudi Arabia

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ABSTRACT

Introduction: Irritable bowel syndrome (IBS) accounts for a reasonable number of medical encounters in primary care, yet a large proportion of cases remain undiagnosed or misdiagnosed due to non-application of systematic approach in such cases. **Aim:** We aimed to assess the awareness, attitude and self-reported utilization of ROME criteria among primary care physicians. **Methods:** A cross sectional study was conducted among primary care physicians under ministry of health, Riyadh, Saudi Arabia (N=216). A pre-designed, structured, closed ended, self-administered questionnaire was used to collect the data. SPSS 20 was used for data analysis. **Results:** A great majority of physicians (about 86%) were aware about ROME criteria; about 57% were having detailed knowledge, while about 53% considered themselves skilled enough to use it confidently. Only 29% physicians reported to use it frequently in their day to day practice. Knowledge, attitude and practice were found to be significantly higher among family medicine specialty as compared to others ($p<0.05$), whereas knowledge and attitude were noted to be significantly higher among residents as compared to specialist ($p<0.05$). No association was noted with age, gender, nationality and duration of clinical experience ($p>0.05$). **Conclusion:** We found a low utilization of ROME criteria among physicians with remarkable gap between awareness and practice.

Keywords: Irritable bowel syndrome, primary care physicians, knowledge, attitude, practice, Saudi Arabia.

1. INTRODUCTION

Irritable bowel syndrome (IBS) is a chronic gastrointestinal disease, which affects relatively younger age group with peak incidence of symptoms in the third and fourth decades, affecting quality of life adversely while leading to anxiety and depression (1, 2). The hall mark of IBS is the alteration in bowel habits not been explained by any bio-chemical or organic disorders with most common association with current or recurrent abdominal pain or discomfort along with bloating (3, 4).

The global prevalence of IBS has been estimated to be ranging from 10% to 23%, with a higher propensity among first degree relatives (5). Studies conducted among different settings have reported diverse prevalence of IBS in Saudi Arabia ranging from 8% to up-to 40% (6-10). What makes it to be an important public health concern is the fact that about 33-90% of the patients do not seek a proper physician consultation (2). Another important aspect is its relationship with psychiatric disorders especially anxiety and depression, which can aggravate the symptoms of IBS, as a response to stress from the large intestine (10).

It has been advocated that identification and diagnosis of IBS patient can be done effectively by adopting primary care approach by screening such patients from the among the frequent visitors to the health care (11). Moreover, the role of primary care physicians has been recognized very well during recent times in the provision of better health care management for chronic gastro-intestinal disorders in general and IBS specifically (12). The identification and diagno-

sis of IBS through ROME criteria is an easy and effective method based on patient history, which can be easily implemented by the primary care physicians (13). Unfortunately, the knowledge and practice of this tool has not been found to be satisfying among primary care physicians (14).

2. AIM

Taking into consideration public health impact and potential role of primary care physicians in improving the care, present study had been taken up with the objective of assessing the knowledge, attitude and self-reported practice towards utilization of ROME criteria among primary care physicians working under ministry of health in Riyadh Saudi Arabia.

3. MATERIALS AND METHODS

Study setting and subjects: It was a cross sectional observational study conducted among a representative sample of primary care physicians working under the ministry of health, in Riyadh city, during November 2019 to January 2020. **Sample size:** The sample size was estimated by using the formula for calculating the sample size required for estimating proportions by taking 95% confidence interval, $N=(1.96)^2 p.q/l^2$, where p =anticipated prevalence taken from the findings reported by previous study conducted in Northern Saudi Arabia (15), $q=(1-p)$ and by taking the allowable error to be 6%, the final sample size was calculated to be 210. **Inclusion/Exclusion criteria:** General practitioner, residents, specialist, or consultants who are in active clinical practice and consent to take part in the study. **Sampling Technique:** All primary health centers within Riyadh city were numbered and random selection was made for particular centers. All the eligible and consenting physicians in each selected primary health care centres were included. As soon as the sample size was reached, no further physicians were included. **Data Collection Tool:** A pre-designed, structured, closed ended questionnaire meant to be self-administered was used to collect the data. The questionnaire had sections on socio-demographic data, items pertaining to knowledge, attitude and practice of ROME criteria. As per the guidelines, for establishing the diagnosis, this criterion should be fulfilled for the previous three months with the onset of symptoms at least 6 months preceding the diagnosis with has the following symptoms IBS Diagnosis (16): repeated abdominal pain, at least once per day/ per week in the last three months, with two or more of the following points: related to defecation, associated with altered stool frequency, associated with altered form or stool appearance. **Statistical Analysis:** The data collected so was entered, tabulated and analyzed through statistical package for social sciences, version 21 (SPSS, Chicago, IL, USA). Descriptive statistics had been presented using counts and proportions (%). Chi Square test was used to find out the association between knowledge, attitude and practice components with the socio-demographic variables. A p-value cut off point of 0.05 used to determine statistical significance. **Ethical Consideration:** Prior approval was taken from the Institutional Review Board, Ministry of Health. The participants were assured about the confidentiality of the responses.

Results

As shown in Table 1, the study sample was predominantly consisted relatively younger age group physicians; about 80% were aged 40 years or younger. Males accounted about 65% of the total sample. Comparatively almost same proportion of the participants was noted from the ever-married and never married categories. Majority belonged to family medicine as compared to other specialization including general practice. Less than a quarter of the physicians in our sample were in the clinical practice for more than 5 years.

A great majority (about 86%) of the primary care physicians in our study were aware about the existence of ROME criteria used for diagnosis of IBS (Table 2). However, only about 57% were having detailed knowledge about this criterion. Further, about 53% considered themselves skilled enough to use it in their day to day practice.

The symptoms of IBS that are to be looked for in ROME criteria were known to great majority of the study participants (86%-95%). However; the correct current time duration for which the patient should be having these symptoms was known to only 57.5% physicians. Likewise, only 44% physicians were aware that the criteria should be fulfilled for about at-least 3 months.

As far as the attitude of the physicians towards ROME criteria is concerned, only 56% felt it to be effective in properly diagnose IBS. About 68.7% physicians in our study had ever used it to diagnose IBS, while only 29% make frequent use of this criterion in their day to day practice. Most of the physicians (65%) consider referral to a specialist only if the patient develops some complication, however; only 12.6% physician reported to always achieve continuity of care in patients suffering from IBS.

As displayed in Table 3, knowledge, attitude and practice component were found to be significantly associated

Socio-demographic factors	Frequency	Percentage
Age group	20 – 30 years	135 (63.1%)
	31 – 40 years	61 (28.5%)
	>40 years	18 (8.4%)
Gender	Male	141 (65.9%)
	Female	73 (34.1%)
Nationality	Saudi	203 (94.9%)
	Non-Saudi	11 (5.1%)
Marital status	Never been married	109 (50.9%)
	Been married	105 (49.1%)
Specialty	Family Medicine	165 (77.1%)
	Others	49 (22.9%)
Classification	Specialist & consultant	32 (15.0%)
	Resident	182 (85.0%)
Years of practice	<3 years	95 (44.4%)
	3 – 5 years	71 (33.2%)
	>5 years	48 (22.4%)

Table 1. Socio-demographic characteristics of the study sample (N=214)

with marital status and specialization (Family Medicine vs. others) whereas knowledge and attitude were noted to be significantly associated with physicians' grade or ranking (residents vs. specialist) ($p < 0.06$). However, it was not found to be associated with age, gender, nationality and duration of clinical experience ($p > 0.05$).

4. DISCUSSION

Present study has been taken up among the primary care physicians in Riyadh in order to capture their self-reported knowledge, attitude as well as practice of ROME criteria for diagnosing IBS. Most of the respondents were younger than forty years and from the family medicine specialization. More than three quarter of physicians in our study were aware of the Rome criteria, however; slightly more than half had its detailed knowledge.

Comparing with other studies, we found a higher level of awareness among primary care physicians regarding this diagnostic tool. Closer to our findings, about 65% physicians had been reported to be aware of ROME criteria from a study in Iceland (17). In a study among medical interns; about 47.5% respondents were aware of the diagnostic criteria for IBS (18) while a level of awareness of 35% has been reported among general practitioners in Italy (19). Furthermore; the awareness of a formal criterion for IBS among primary care physicians though systematic review has been estimated to be 2-36% (14).

Slightly less than one third of the physicians in our study have assented to be utilizing this tool frequently in their clinical practice. A comparable figure (23%) has been reported from northern part of Saudi Arabia regarding utilization of this criteria (15). Some European studies have reported a slightly higher rate of regular use of ROME criteria to be 32% (20) and 36% (21) among primary care physicians.

We found a significant association between knowledge and attitude (not with practice) with physicians' level, whereby the higher proportion of residents were noted in these domains. However, in an another study, physician with post graduate degree were found to have higher practice as compared to residents (15). Affiliation to family medicine specialty was also noted to have significant association with respect to all three domains.

5. CONCLUSION

A remarkable gap was found between the awareness and practice of ROME criteria to diagnose IBS among primary care physicians. Although awareness and practice was more

Knowledge/Attitude/ Practice Items	Response	Frequency	Percentage
General Awareness about ROME IV criteria			
Have you Heard about Rome IV criteria	Yes	186	86.9%
	No	28	13.1%
Do you have the Knowledge of ROME IV criteria to diagnose IBS	Yes	124	57.9%
	No	39	18.2%
	Not sure	51	23.8%
Do you have necessary skill to apply ROME criteria confidently	Yes	115	53.7%
	No	30	14.0%
	Can't say	69	32.2%
Knowledge about the components of ROME IV criteria			
Symptoms of IBS or functional bowel disorder that are addressed in ROME IV criteria	Recurrent abdominal pain	203	94.9%
	Relation of abdominal pain to defecation	187	87.4%
	Associated with change in stool frequency	196	91.6%
	Associated with change in stool appearance	184	86.0%
The symptom onset should be for how much duration to apply ROME criteria?	>6 months (correct Response)	123	57.5%
	<6 months	31	14.5%
	No relation	06	02.8%
	I don't know	54	25.2%
The criteria should be fulfilled for how much of the time duration?	1 month	05	2.3%
	2 months	09	4.2%
	3 months (correct Response)	88	41.1%
	6 months	56	26.2%
	I don't know	56	26.2%
Attitude towards ROME IV criteria for diagnosing IBS			
In your opinion what proportion of patients do qualify for the ROME criteria to be applied for diagnosing IBS	<25%	40	18.7%
	25 – 50%	71	33.2%
	>50	52	24.3%
	I don't know	51	23.8%
Do you feel that ROME criteria is effective enough to diagnose IBS	Yes	120	56.1%
	No	31	14.5%
	I don't Know	63	29.4%
Practice Component			
Have you ever Used of ROME IV criteria to diagnose IBS	Yes	147	68.7%
	No	67	31.3%
Do you Frequent use ROME IV criteria to diagnose IBS	Yes, for all cases	63	29.4%
	For selected cases	94	43.9%
	Don't use at all	57	26.6%
Which cases of IBS do you consider for specialist referral	Long duration of patients	23	10.7%
	All patients	12	05.6%
	None	40	18.7%
	Development of complications	139	65.0%
Are you able to achieve continuity of care for IBS patients	Always	27	12.6%
	Sometimes	91	42.5%
	Rarely	67	31.3%
Participated to raise awareness	Never	29	13.6%
	Yes	92	43.0%
	No	122	57.0%

Table 2. Knowledge, attitude and practice of ROME criteria (for diagnosis of IBS) among primary care physicians (N=214)

Factor	Knowledge of ROME Criteria (n=124)*	Skilled enough to apply Rome Criteria (n=115)*	Ever used to diagnose IBS (n=147)*	
Age group	20 – 30 years	75 (60.5%)	64 (55.7%)	91 (61.9%)
	31 – 40 years	39 (31.5%)	39 (33.9%)	45 (30.6%)
	>40 years	10 (08.1%)	12 (10.4%)	11 (07.5%)
	p value	0.534	0.051	0.518
Gender	Male	79 (63.7%)	77 (67.0%)	98 (66.7%)
	Female	45 (36.3%)	38 (33.0%)	49 (33.3%)
	P value	0.430	0.722	0.722
Nationality	Saudi	117 (94.4%)	106 (92.2%)	139 (94.6%)
	Non-Saudi	07 (05.6%)	09 (07.8%)	08 (05.4%)
	P value	0.695	0.055	0.767
Marital status	Never married	56 (45.2%)	47 (40.9%)	68 (46.3%)
	Ever married	68 (54.8%)	68 (59.1%)	79 (53.7%)
	P value	0.047	0.002	0.043
Specialty	Family medicine	112 (90.3%)	99 (86.1%)	127 (86.4%)
	Others	12 (09.7%)	16 (13.9%)	20 (13.6%)
	P value	<0.001	0.001	<0.001
Classification	Specialist	24 (19.4%)	23 (20.0%)	24 (16.3%)
	Resident	100 (80.6%)	92 (80.0%)	123 (83.7%)
	P value	0.034	0.026	0.404
Years of practice	<3 years	53 (42.7%)	45 (39.1%)	66 (44.9%)
	3 – 5 years	45 (36.3%)	40 (34.8%)	50 (34.0%)
	>5 years	26 (21.0%)	30 (26.1%)	31 (21.1%)
	P value	0.516	0.199	0.778

*Represents frequency of positive responses

Table 3. Association of Knowledge, attitude and practice of ROME criteria usage with selected socio-demographic characteristics of study participants. (N=214)

among residents as compared to specialists but overall the practice of utilization of ROME criteria was very modest. The higher proportion among family medicine specialty reflects a positive trend which may be because of the higher emphasis given to applying standard approaches in primary care.

Although care has been taken to ensure the representativeness of the sample despite the results are not amenable for generalization. This was an observational study so it's bound to have the limitation of this type of study. We have used the self-administered questionnaire so the originality of the responses is questionable, at-least up to some extent. Moreover, we have not used any scoring system for quantifying the knowledge, attitude and practice, which would have been a better measure to achieve the desired objective.

Further studies with qualitative approach are desirable in this area to explore more about the factors influencing awareness and utilization of a standard system for better management of IBS in the primary care.

Nonetheless, there is felt need to orient the primary

care physicians in this domain as this does not only about ROME criteria but it encompasses the whole area of care and treatment for IBS patients. Family medicine refreshment course, continuing medical education, workshops are some of the opportunities that can be availed for fulfilling this objective. Besides this, a formulation of national guidelines and ensuring its implementation are also sought after so as to make available the best medical care for IBS patients.

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