MEDICAL SCIENCE

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DISCOVERY

SCIENTIFIC SOCIETY

Assessment of knowledge, awareness about hemorrhoids causes and stages among the general public of Saudi Arabia

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ABSTRACT

Background: The much more typical symptoms of hemorrhoids include prolapse, itching, painful bright red blood, prolapse and unpleasant grape-like tissue prolapse. Anoscope and (DRE) are used to diagnose it. In general, it is believed that variables including constipation, a low-fiber diet, a high body mass index (BMI), pregnancy and a lack of physical exercise increase the risk of hemorrhoids. The goal of this paper is to assess Saudi citizens' knowledge and awareness of the factors that cause and sequences of hemorrhoids. *Method:* Between October 2022 and February 2023 was completed this paper. At least 384 participants over the age of eighteen made up the study group. The outcomes of this study were analyzed using the SPSS program using a pre-tested questionnaire. *Results:* The research subjects made up of 1410 individuals, thirty percent were men and 69.9% were women. 53.7% of participants were in their 20s to 30s. 42% of participants had a relative with hemorrhoids and 17% of participants themselves had them. For hemorrhoids, 42.8% of participants properly recognized stage 1, 44.7% correctly identified stage 2, 46.7 percent correctly identified stage 3 and 58.1% correctly identified stage 4. Only 28.9 percent of respondents had high-levels of awareness regarding hemorrhoids, compared to 62.7 percent who had a moderate-level and 8.4% who had a poor level. *Conclusion:* In sum, the general Saudi populace has limited understanding of hemorrhoids, their causes and treatment options. Hemorrhoids knowledge scores significantly correlated with age, sexuality, where one lived and profession.

Keywords: Hemorrhoids, External Hemorrhoid, Internal Hemorrhoid, Anal fissure, Hemorrhoid Stages, prolapse, Rectal bleeding.

1. INTRODUCTION

A frequent anorectal condition known as hemorrhoids, sometimes known as piles, is characterized by a weakening of the anal cushion and the supporting tissue as well as spasms of the internal sphincter (Yamana, 2018). Painless brilliant red blood, prolapse, irritating grape-like tissue prolapse, itching or a mix of symptoms are the most common-symptoms of hemorrhoids. Digital-rectal-examination (DRE) and anoscope are used to diagnose it (Lohsiriwat et al., 2016). Constipation, a low-fiber diet, a high body-mass index (BMI), pregnancy and a reduced physical activity are among the factors that are typically thought to increase the risk of hemorrhoids (De-Marco and Tiso, 2021).

The most extensively used classification scheme for hemorrhoids is Goligher's classification, which follows. The degree of prolapse determines the grade of the hemorrhoids: Grade 1: There is bleeding, but no prolapsing piles and it is only apparent with a proctoscope. Grade 2: Piles prolapse when strained but subside on their own. Grade 3 piles prolapse but are manually reduced. Grade 4 irreversibly prolapsing piles (Aigner, 2017).

Haemorrhoid disease represent with 3.3 million ambulatory-care-visits, the fourth largest outpatient gastrointestinal analysis in the United States. The disease represents nearly in the preferred population is to be 4.4%. The global prevalence of haemorrhoid is higher in Australia (38.93%) that's observed by way of Israel (16%) and Korea (14.4%). Very few tries have been made to evaluate the superiority of haemorrhoids in Africa. The incidence of haemorrhoid amongst Egyptian-patients gets colonoscopies changed into 18% (Kibret et al., 2021).

In 2018, a study has been done aims to assess the knowledge in Majmaah city regarding hemorrhoids, in terms of the causes of hemorrhoids stated by subjects, low-fiber diet accounted for 89.8percentage points of cases, while 71.6percent of those who knew about hemorrhoids said that their major sources of knowledge on the condition were friends and family. 82.4 percent of the surveyed drink-plenty of fluids, 75.8 percentages consume high fiber-foods, 8.8 percent of overall use fiber-supplements and 49.2percent of total occasionally sit for extended-periods on the toilet. In general, there was good knowledge (Rayzah, 2018).

In 2019 on 87 patients of both genders the study aims to discover whether dietary habits, bowel habits, physical activity, smoking and alcohol have a significant etiology of hemorrhoids. It shows significant difference between those on vegetarian diet and mixed diet and regarding to the physical activity the difference was not significant in 15 were working out while 72 do not (Badal and Sharma, 2019). Another study with 403 participants, 13.1 % had hemorrhoids. Constipation and BMI> 25kg/m2 had a statistically significant association with hemorrhoid (Kibret et al., 2021). Research has been done in 2021 to determining the awareness regarding hemorrhoids in Abha city of Saudi Arabia, a questionnaire was published with (255) participants, their ages-ranged from 18 to 65. In total 233-participants had good-awareness regarding hemorrhoids (Alamri et al., 2021).

Recognizing the public's-knowledge of the etiology and degrees of hemorrhoids in KSA will help measure how much they know about the seriousness of this condition and how to deal with it, which then helps the medical staff with treatment and to reduce from the malignant conditions. This research deals with a topic that has not been sufficiently covered in Saudi-Arabia and from here we started the research. The objective of this investigation is to measure Saudi citizens' knowledge and awareness of the causes and phases of hemorrhoids.

2. METHODS

Study design

This observational survey study was conducted in Saudi Arabia between October 2022 - March 2023. Total enumeration method was used for including all the adult male and female agreed to answer the questionnaire in this study. The questionnaire was disturbed by social media apps and by that we can get participants.

Inclusion and Exclusion criteria
Including criteria
All general public in Saudi Arabia, both genders and above 18-year-old

Excluding criteria
Who is out of Saudi Arabia borders and who is under 18-year-old?

Sample size

Using the Qualtrics calculator and a 95% degree of confidence, the size of the sample was computed and three hundred and eighty-four people were included.

The Sample size was estimated using the formula: n= P (1-P) * $Z\alpha^2$ / d^2 with a confidence level of 95%.

n: Calculated sample size

Z: The z-value for the selected level of confidence (1- a) = 1.96.

P: An estimated prevalence of knowledge

Q: (1 – 0.50) = 50%, i.e., 0.50

D: The maximum acceptable error = 0.05.

So, the calculated minimum sample size was:

n = $(1.96)^2$ X 0.50 X 0.50/ $(0.05)^2$ = 384.

Data collection Technique and tools

A structured questionnaire was used as a study tool. This tool was developed after consulting relevant studies conducted in Saudi Arabia. The final version of the questionnaire consisted of 23 Questions in three main sections. Section one contained socioeconomic status information. The second section includes short information test questions about haemorrhoids, such as definition, causes and stages. The third part consists of general questions to assess the proper proceeding after the affection of haemorrhoids. The questionnaire is broken into three sections. The first section is personal information and includes questions on gender, age, educational attainment and line of employment. The second part contains two questions about the causes of haemorrhoids, each question has 10 options and from 10 options there are 5 correct options, while in the third part there are 8 questions about the stages of haemorrhoids, so that each question contains one correct answer. For each correct choice, the person will get a point and if the wrong answer is chosen, he will get 0 points. So that the total score is 18 points:

Second part: Two multiple choice questions, which 10/18 points (55.55%)

Third part: 8 questions, which 8/18 points (44.44%)

Those who score more than 14 (77.77%) points are considered high level, while those who score between 14 and 8 (77.77% to 44.44%) are considered medium level, those who score less than 8 (44.44%) points are considered low level.

Pilot test

The questionnaire was distributed on 20 individuals and asked to fill it. This was done to test the simplicity of the questionnaire and the feasibility of the study. Data of the pilot study was excluded from the final data of the study.

Data analysis

Collected data was verified prior to data analysis. The (SPSS) version 27 was used for that purpose. Qualitative data were expressed as numbers and percentages. The appropriate tests of significance were applied accordingly (i.e., c2-test, t-test and F-test). A p-value of less than 0.05 was considered to be statistically significant.

3. RESULTS

Table 1 shows that, the study included 1410 participants, 69.9% of them were females and 30.1% were males. 53.7% of participants aged 20-30 years old, 18.6% were 31-40 years old, 12.3% were 41-50 years old and 9% were less than 20 years old. 74.3% of participants had college degree.

Table 1 Participants' demographical parameters (n=1410)

Parameter		No.	Percent
Age	Less than 20	127	9.0
	30-20	757	53.7
	40-31	262	18.6
	50-41	174	12.3
	60-51	83	5.9
	More than 60	7	.5
Gender	Male	425	30.1
	Female	985	69.9
Education level	Uneducated	3	.2

	Primary	12	.9
	Average	23	1.6
	Secondary	325	23.0
	Collegiate	1047	74.3
Residence area	Southern area	522	37.0
	Eastern Province	232	16.5
	The northern area	155	11.0
	Western Region	345	24.5
	Central Region	156	11.1
Employment	Healthcare system	520	36.9
	Not healthcare system	890	63.1

Figure 1 illustrated hemorrhoids prevalence as 17% of participants had hemorrhoids and 42% had a relative who had hemorrhoids.
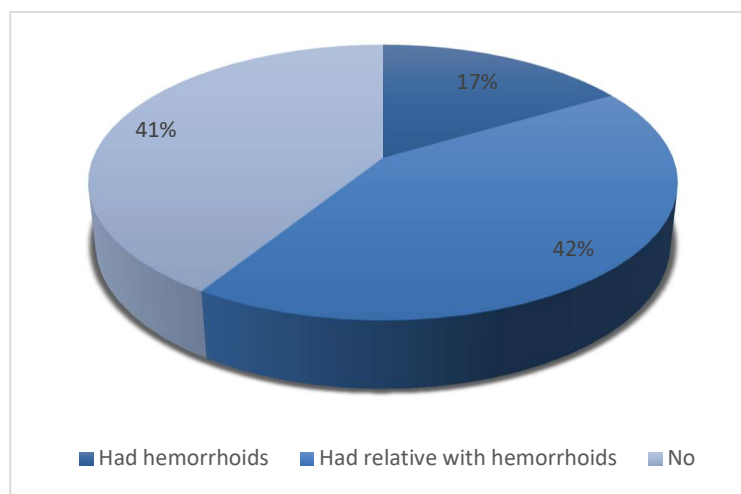

Figure 1 Prevalence of Haemorrhoids among study participants or their relatives (n= 1410)

In Table 2, 73% of participants chose chronic diarrhea or constipation as causes of haemorrhoids (Bias occur), 55.4% of participants chose based on its location in the dentate line of the anus as causes of haemorrhoids (Bias occur). 84.4% of participants chose yes when asking about presence of pain help in the classification of the stage of haemorrhoids.

Table 2 Knowledge of participants of haemorrhoids causes, stages and treatment (n=1410)

Parameter		No.	%
	Chronic diarrhoea or constipation	1030	73.0
	Sitting for long periods on the toilet	913	64.8
	Eat a low-fiber diet	753	53.4
	Straining during bowel movements	588	41.7
	Exhaustion	183	13.0
	Drink plenty of fluids	46	3.3
Causes of haemorrhoids (Bias occur)	Going to urinate as soon as you feel the urge	71	5.0
	Playing sports	25	1.8
	Eat foods rich in fibre	65	4.6
	Pregnancy	649	46.0
	Obesity	644	45.7
	Having a family history of haemorrhoids	687	48.7
	Over the age of fifty	334	23.7

	Constantly engaging in weight lifting or other activities that tire your body	560	39.7
	Smoking	330	23.4
	Hiking	138	9.8
Stages of haemorrhoids	1	99	7.0
	2	330	23.4
	3	896	63.5
	4	85	6.0
Reference in haemorrhoids staging	Depending on the extent of pain for the patient	389	27.6
	Based on its outward appearance	240	17.0
	Based on its location in the dentate line of the anus	781	55.4
Presence of pain help in the classification of the stage of haemorrhoids	Yes	1190	84.4
	No	220	15.6
Treatment method differ in different stages of haemorrhoids	Yes	1281	90.9
	No	129	9.1

In Table 3, 42.8% of participants could identify stage 1 of hemorrhoids correctly, 44.7% identified stage 2 correctly, 46.7% identified stage 3 correctly and 58.1% identified stage 4 correctly.

Table 3 Knowledge of participants of haemorrhoids staging (n=1410)

	Stage 1	Stage 2	Stage 3	Stage 4
Absence of haemorrhoids outside the anus and can be seen by endoscope	604 42.8%	559 39.6%	140 9.9%	107 7.6%
Haemorrhoids protruding outside the anus and shrinking on its own	178 12.6%	630 44.7%	298 21.1%	304 21.6%
Protrusion of haemorrhoids outside the anus and shrinks by returning them manually	295 20.9%	198 14.0%	658 46.7%	259 18.4%
Protrusion of haemorrhoids outside the anus and does not shrink in any way	329 23.3%	128 9.1%	134 9.5%	819 58.1%

As illustrated in Figure 2, among respondents, just 28.9 percent had a high-degree of knowledge on hemorrhoids, 62.7 percent of respondents had a medium level and 8.4 percent of respondents had a low-level. Table 5 shows a significant-correlation of hemorrhoids knowledge-scores with ages, sexuality, location and occupation ($P < 0.05$).
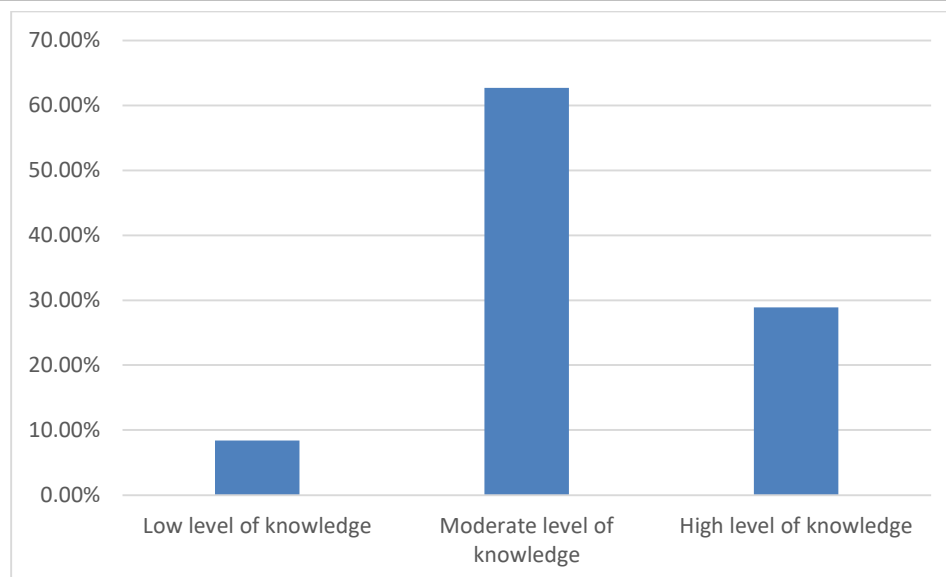
Figure 2 Knowledge score of hemorrhoids among study participants (n= 1410)

Table 5 Association between participants' knowledge scores with socio-demographic characteristics (n=1410)

		Knowledge score			Total (N=1410)	P value
		Low knowledge	Moderate knowledge	Good knowledge		
Age	Less than 20	9	85	33	127	0.001
		7.6%	9.6%	8.1%	9.0%	
	30-20	51	438	268	757	
		42.9%	49.5%	65.8%	53.7%	
	40-31	31	175	56	262	
		26.1%	19.8%	13.8%	18.6%	
	50-41	13	127	34	174	
		10.9%	14.4%	8.4%	12.3%	
	60-51	14	54	15	83	
		11.8%	6.1%	3.7%	5.9%	
	More than 60	1	5	1	7	
		0.8%	0.6%	0.2%	0.5%	
Gender	Male	42	239	144	425	0.004
		35.3%	27.0%	35.4%	30.1%	
	Female	77	645	263	985	
		64.7%	73.0%	64.6%	69.9%	
Educational level	Uneducated	0	3	0	3	0.078
		0.0%	0.3%	0.0%	0.2%	
	Primary	1	10	1	12	
		0.8%	1.1%	0.2%	0.9%	
	Average	3	17	3	23	
		2.5%	1.9%	0.7%	1.6%	
	Secondary	34	212	79	325	
		28.6%	24.0%	19.4%	23.0%	
	University	81	642	324	1047	
		68.1%	72.6%	79.6%	74.3%	
Residence area	Southern area	34	352	136	522	0.013
		28.6%	39.8%	33.4%	37.0%	

	Eastern Province	26	128	78	232	
		21.8%	14.5%	19.2%	16.5%	
	The northern area	22	92	41	155	
		18.5%	10.4%	10.1%	11.0%	
	Western Region	25	216	104	345	
		21.0%	24.4%	25.6%	24.5%	
	Central Region	12	96	48	156	
		10.1%	10.9%	11.8%	11.1%	
Employment	Healthcare	23	281	216	520	0.001
		19.3%	31.8%	53.1%	36.9%	
	Not healthcare	96	603	191	890	
		80.7%	68.2%	46.9%	63.1%	

4. DISCUSSION

Hemorrhoids are common anorectal disorders that are strongly linked to a variety of harmful behaviors and may be viewed differently as a medical problem by different social or ethnic groups (Elgadda et al., 2019; Hamdi et al., 2022). The availability of self-treatment options and socioeconomic factors may affect healthcare seeking behavior because hemorrhoids are not thought to be life-threatening illnesses (Johanson and Sonnenberg, 1990). Studies assessing the epidemiology and prevalence of haemorrhoids are rare and not all of them address all aspects of the condition. Also, studies assessing general populations' awareness about hemorrhoids are scanty. In our study, 17% of participants had hemorrhoids and 42% had a relative who had hemorrhoids. Hemorrhoids were found to be 13.1% common in Ethiopia (Kibret et al., 2021). The outcome is in line with research done in Israel (16%) (Carter et al., 2013) and Korea (14.4%) (Lee et al., 2014). However, it is less than studies from Australia and Egypt, which found that the prevalence was, respectively, 38.9% and 18% (Elbatea et al., 2011; Riss et al., 2011). In the United States, a prevalence rate of 4.4% was noted by Johanson and Sonnenberg, (1990). Hemorrhoids are thought to affect 50% to 85% of people worldwide, according to a recent estimate.

According to our study results, most of responder; 62.7% had moderate knowledge. Up a different Saudi investigation found that roughly 60percent of the surveyed of residents in the Aseer-region were knowledge-able of hemorrhoids. The definition, signs, and causes of haemorrhoids received the highest level of public knowledge. Complications and awareness of preventative actions, particularly complications, were moderately good (Alamri et al., 2021). According to the report, 36% of the respondents are well-informed about haemorrhoids while just 63% of them are highly aware (Hamdi et al., 2022). This result is consistent with a Chitwan College study, which found that less than half of respondents (42.5%) and more than half (57.5%) had adequate knowledge of haemorrhoids (Thapa and Author, 2019). A study conducted in the surgical OPD of CMCTH (2013) produced mixed findings, with less than half (48%) of respondents having insufficient degree of expertise and more over half 52 percent having acceptable information concerning haemorrhoids (Thapa and Author, 2019).

Hemorrhoids are known to cause-bleeding, pain, pruritus, fecal-seepage, prolapse and mucus-discharge as symptoms. The majority of complaints in the anal area are probably due to haemorrhoids, so it is not entirely obvious that haemorrhoids are the origin of these symptoms (Mazier, 1994). There was no correlation between hemorrhoid grade and hemorrhagic symptoms in a sizable colonoscopy-based investigation (Riss et al., 2011). In a German study from 2001, 458 individuals who had been referred with stomach and/or anal complaints underwent examination and interview. On proctoscopy, only 18% of the 63% who thought they had haemorrhoids were actually found to have them, which are comparable to the prevalence in the group who did not think they had haemorrhoids (13%) (Rohde and Christ, 2004). Surprisingly, both groups' symptoms were the same. According to the study, most people who think they have haemorrhoids are wrong. The study also lends credence to the notion that haemorrhoids may not be the only cause of some symptoms. In the US, there hasn't been a current study on hemorrhoid symptoms. Irritable bowel syndrome symptoms such as bloating, abdominal pain, decreased well-being and disturbed social life are reported by patients with hemorrhoids (Johannsson et al., 2005).

Depending on where they are in relation to the dentate line, haemorrhoids are categorized as internal or external. Hemorrhoids on the outside develop distally to the dentate line. Internal haemorrhoids can be divided into 4 different grades and appear close to the dentate line. When strained, Grade I haemorrhoids prolapse past the dentate line. When strained, grade II haemorrhoids prolapse through the anus but spontaneously shrink, whereas grade III haemorrhoids prolapse through the anus but must be manually reduced. Hemorrhoids of grade IV that have protruded through the anus cannot be reduced. In our study, 42.8% of

participants could identify stage 1 of hemorrhoids correctly, 44.7% identified stage 2 correctly, 46.7% identified stage 3 correctly and 58.1% identified stage 4 correctly.

In our study, hemorrhoids-knowledge scores significantly-correlated with years of age, sex, where one lived and profession. Another study reported that awareness was better among young, aged participants of a high level of education and those with a positive history of the disease (Alamri et al., 2021). Also, a study noticed the awareness was better among high income participants and those with a positive history of the disease (Hamdi et al., 2022).

Mild-haemorrhoids frequently go away on their own or with conservative treatment. Hemorrhoids, on the other hand, are persistent, can become infected or thrombosed and can result in incontinence. The recurrence rate with conservative therapy is greater than 50%; however following surgery, it is less than 5–10%. Pain following surgery can be severe and male urinary incontinence is common (Johannsson et al., 2005; Mazier, 1994).

5. CONCLUSION

In summary, the general Saudi-community has limited-knowledge of hemorrhoids, their causation and possible-treatments. The knowledge-scores of hemorrhoids significantly-correlated with age, sexual identity, place of housing and career. Awareness campaigns should be arranged by Saudi health authorities to raise-awareness of hemorrhoids to assess diagnosis in early stages of the disease.

Recommendations

We recommend that further educational campaigns should be inaugurated to raise-awareness of hemorrhoids and diagnosis in early stages of the disease.

Author Contributions

The authors confirm contribution to the paper as follows: study conception and design: Mohammad Abdelrazik, Abdulhadi Almazraqi, Meshal Alharbi; data collection: Khaled Alhumayri, Enas Al-Hadi, Asaiel AL Hadi, Badah alqhtan, Lama Alyami, Ebtehag Alwargash, Hajar almustanyir, Faisal Almazariqi; draft manuscript preparation: Mohammad Abdelrazik, Abdulhadi Almazraqi, Meshal Alharbi, Khaled Alhumayri, Enas Al Hadi, Asaiel AL Hadi, Badah alqhtan, Lama Alyami, Ebtehag Alwargash, Hajar Almustanyir, Faisal ALmazariqi, Khame Alzahran. All authors reviewed the results and approved the final version of the manuscript.

Ethical approval

Ethical approval was obtained from the research ethics committee of Prince Sattam Bin Abdulaziz University (application number: SCBR-070-2022). An informed consent was obtained from each participant after explaining the study in full and clarifying that participation is voluntary. Data collected were securely saved and used for the research purposes only.

Informed consent

Written informed consent was obtained from all individual participants included in the study.

Conflict of interest

The authors declare that there is no conflict of interests.

Data and materials availability

All data sets collected during this study are available upon reasonable request from the corresponding author.

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