

Assessment of The Awareness Level and Attitude of Saudi Society Toward Crohn's disease in Jeddah Region

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Abstract

Background: Crohn's disease, an inflammatory gastrointestinal disorder, is increasingly prevalent worldwide. Factors such as environmental influences, immune system responses, genetic susceptibility, and changes in the microbiome contribute to the development of this condition, leading to damage in the intestinal lining. Symptoms commonly associated with Crohn's disease include abdominal pain, diarrhea, and fatigue, along with potential indicators like weight loss, fever, growth failure, anemia, recurrent fistulas, or extra intestinal manifestations. This study aimed to assess the level awareness and attitudes of individuals in Jeddah, Saudi Arabia, regarding Crohn's disease.

Method: A cross-sectional research study was conducted, involving voluntary participation and completion of an anonymous self-administered questionnaire in Arabic. The questionnaire captured demographic information and evaluated participants' knowledge, attitudes, and practices related to Crohn's disease. Data analysis was performed using SPSS version 25

Results: The study included 432 participants, with 46.1% males and 53.9% females. The majority (72.9%) fell within the 20-30 age range. Findings revealed that 70.8% of participants had no prior knowledge of Crohn's disease. Moreover, 82.0% believed that nutrition played a crucial role in its treatment, while 80.6% acknowledged a negative impact on quality of life.

Conclusion: In conclusion, the study

underscores the need for enhanced awareness of Crohn's disease in Jeddah. While participants demonstrated positive attitudes towards nutrition and quality of life, there was a noticeable lack of knowledge about the disease. Targeted educational efforts, particularly among males and individuals with lower income, are imperative to address these knowledge gaps and promote informed attitudes towards Crohn's disease in the region.

Keywords: Crohn's disease, Awareness, attitude, Jeddah region, Saudi society.

*** Introduction (Background)**

Crohn's disease, characterized by chronic inflammation in the gastrointestinal tract, is becoming more prevalent worldwide Torres et al., (2017). According to the article by Petagna, et al (2020). The pathogenesis of Crohn's disease occurs through intricate interactions involving environmental factors, immune system responses, genetic susceptibility, and changes in the host's microbiome. These interactions ultimately lead to the disruption of the intestinal mucosa. A study by Feld et al., (2018)

mentioned that Crohn's disease is characterized by a set of prominent symptoms that are considered

cardinal in nature. These symptoms include abdominal pain, diarrhea, and fatigue. It is important to be aware that there are other potential indicators that can accompany the disease. These may encompass weight loss, fever, growth failure, anemia, recurrent fistulas, or extra intestinal manifestations. Such additional features can also be observed as presenting signs of Crohn's disease. The treatment of Crohn's disease comprises two phases: induction and maintenance. During the induction phase, a higher dosage of medication, which spares the use of steroids, is administered in the initial weeks to months of therapy. While steroids can be employed to achieve symptom control according to a study by Cushing & Higgins, (2021), it is important to note that excessive and inappropriate use of steroids can elevate the risk of complications like osteopenia and infections, as highlighted by Feld et al., (2018). In the maintenance phase, a lower dosage of a steroid-sparing medication, such as an immune modulator or a biologic, is utilized. Cushing et al., (2021).

According to Kelly and Peter's review (2021), erythema, luminal narrowing, mucosal edema, and ulceration are characteristics of

inflammation in discontinuous areas, which are the hallmark findings of CD. Furthermore, cross-sectional imaging can be used to detect the complications of CD. The most sensitive screening test for IBD is fecal calprotectin. In addition, endoscopy with biopsy should evaluate all the systemic and bowel symptoms. Also, a requirement for Crohn's disease diagnosis is histologic evidence.

The prevalence of inflammatory bowel disease incidences is continuously increasing in Western countries. A study done in China by Zhang et al. (2020), the author also stated that almost half of the patients with IBD did not know about all the possible treatments for IBD which indicate a low level of awareness in attitude toward the disease.

In Central Asia and specifically in Kazakhstan, there's been limited published data about inflammatory bowel disease (IBD). A study by Kaibullayeva et al., (2020) shows that to address this gap, a study was conducted in 2017 involving adults aged 18 and above across different regions of Kazakhstan.

Using various methods such as the IBD Alert Questionnaire (CalproQuest), fecal calprotectin tests, and endoscopy with biopsies,

researchers confirmed 128 cases of IBD out of 115,556 participants. Among these, 36 were identified as Crohn's disease (CD) cases and 92 as ulcerative colitis (UC) cases. The prevalence of IBD, adjusted for age and sex, was 113.9 per 100,000 people. For UC, the adjusted prevalence was 84.4 per 100,000, and for CD, it was 29.5 per 100,000. This study marks the first report on IBD prevalence with verified diagnoses in Central Asia, providing valuable insights to help improve healthcare resource planning for IBD management programs.

In Asia, while inflammatory bowel diseases (IBD) such as ulcerative colitis (UC) and Crohn's disease (CD) have historically been less prevalent than in the West, their occurrence is gradually rising. This increase may be attributed to factors such as the adoption of Western diets, higher socioeconomic status, improved hygiene, and better vaccination. Understanding the prevalence of IBD in Asia is crucial in identifying its causes and related risk elements. According to a study conducted by Park and Cheon (2021), epidemiological research in Asia indicates a significant uptick in the incidence and prevalence of inflammatory bowel disease (IBD) over time. Consequently, Asia now

has the highest number of IBD patients worldwide. This surge is likely influenced by environmental factors affecting IBD development, given that genetic factors wouldn't undergo substantial changes in just a few decades. Delving into IBD's epidemiology in Asia offers promise in uncovering its causes and risk elements. By exploring genetic susceptibility and ethnic differences, potential genetic contributions to IBD could be revealed. Continuous research and ongoing data collection on incidence and prevalence are vital. Collaboration among Asian countries for extensive epidemiological and genetic studies holds immense potential in comprehending and effectively managing IBD.

In the western region of Saudi Arabia, Inflammatory bowel disease (IBD) is common worldwide, including the gulf region, a study surveyed the general population's awareness of inflammatory bowel disease (IBD), aiming to gauge the level of understanding about Crohn's disease (CD) and ulcerative colitis (UC). A study by Meeralam et al., (2023) Out of 1,304 participants, a significant portion had not encountered information about CD (29%) or UC (19%). The average awareness score stood at 1.72 out of 3. Females,

individuals aged 31 to 40, those with a PhD, and those who had previous interactions with IBD patients showed higher awareness scores compared to others. Overall, the study highlights a concerning lack of awareness about IBD in the Saudi population, stressing the need for national efforts to improve public knowledge about the condition.

According to the study by Khan et al, 2019 ‘they used a questionnaire to assess the knowledge, beliefs and attitude towards IBS in Riyadh city and the findings revealed that a significant majority of participants expressed a positive attitude towards three specific interventions: changing diet (91.1%),

prescribed medications (79.7%), and psychological counseling (74.8%). These interventions were perceived as potentially effective in improving IBS symptoms. However, a contrasting pattern emerged regarding the attitudes towards other treatment options. The majority of participants expressed a negative attitude towards unprescribed drugs (44.6%), herbals (40%), and surgical interventions (57.8%), as these approaches were perceived as ineffective in managing IBS symptoms.

1- Statement of the problem: Crohn's disease presents a significant healthcare challenge globally, including in Saudi Arabia, yet societal awareness and attitudes toward this condition remain relatively understudied. The study aims to assess the awareness, and attitudes of the Saudi society in Jeddah region concerning Crohn's disease. The awareness of Crohn's disease in Jeddah region of Saudi society seems limited, often confused with irritable bowel syndrome (IBS) or considered merely a stomachache. Many are unaware of its chronic nature. Even for those familiar with the diagnosis, there's a lack of understanding regarding its management and the significant impact it has on a patient's life.

2- Purpose of the study: Assess the level of awareness and attitudes of Saudi society toward Crohn's disease in Jeddah region.

3- Objectives: -

1- To assess the awareness level towards Crohn's disease in Jeddah region.

2- To identify the attitudes of the Saudi Society towards Crohn's disease in Jeddah region.

4- Research Questions: -

1- To what extent is Saudi society aware level of Crohn's disease.

2- What are Saudi society attitudes

towards Crohn's disease.

*** Methodology**

1- Research design: The proposed research employed a quantitative descriptive cross-sectional design utilizing an online survey questionnaire. This design aims to investigate and assess the awareness level and attitudes of the Saudi society regarding Crohn's disease. The online survey questionnaire served as the primary tool to gather data and address the research questions.

2- Study setting: The data has been collected from Jeddah city among the community.

3- Sampling and sample size: Snowball sampling technique (non-probability technique) was used as the sampling method, The Ministry of Interior website was used to obtain the population number in the city of Jeddah, as it numbered 2,486,338 people (moi.gov.sa). The size of the sample required for the research was determined by using the electronic website RaoSoft, using the snowball method to obtain the required number for the sample. As it is the appropriate way to obtain the largest possible number of samples within the community.

This study's target population consists of (2,486,338), The researchers calculated the sample size

from the whole target population electronically by using the Raosoft website which calculated the sample size based on the following equation:
$$x = Z(c/100)^2 r (100-r) n = N x / ((N-1)E^2 + x) E = \text{Sqrt}[(N - n)x/n(N-1)]$$

Where N is the population size, r is the fraction of responses rate, E is margin error and $Z(c/100)$ is the critical value for the confidence level. So, the researchers estimated the margin error 5%, confidence level was 95%, the target population size is 2000000 and the response distribution needed was 50% from the whole number of the population. So, the minimum recommended size in this research is 385.

4- Inclusion criteria: The study requires that the participants be Saudi citizens living in the Jeddah region, regardless of gender, and aged 18 years and above.

5- Data Collection tool: In this research, data collection was facilitated through an online questionnaire consisting of three sections. The first part of the questionnaire was dedicated to gathering demographic information from participants. This section included variables pertaining to age, gender, marital status, living status, income, number of children, educational level, and occupational status. Respondents were provided

with multiple-choice options to select the most appropriate responses. Following the demographic section, the second part of the questionnaire aimed to assess the level of awareness among participants toward Crohn's disease. Utilizing a scale consisting a binary options, it included 11 (yes) or (no) questions, participants who obtained less than 3 correct responses in the knowledge scale (less than 27.2%) were classified as low awareness, those who obtained 3-6 correct responses (27.2% - 54.5%) were considered moderate, while those who got more than 6 correct responses (more than 54.5%) were considered to have a high level of awareness toward Crohn's disease, (Merralam, et al, 2023).

Finally, the last part of the questionnaire evaluated participants' attitudes toward Crohn's disease. This section employed a Likert scale allowing respondents to express their degree of agreement or disagreement with a series of 10 statements regarding Crohn's disease, including inverse responses, was utilized.

The questionnaire design encompassed a balanced blend of positive and negative statements to capture a comprehensive spectrum of awareness. the item mean score was divided over 5. To examine the significant differences in attitude

score. A p-value of less than or equal to 0.05 is considered significant. If the percentage of agreement is 60% or more, it signifies a high level of agreement. Percentages between 40% and 60% indicate moderate agreement, while anything below 40% suggests a low level of agreement. Upon data collection, descriptive statistics were computed for each Likert scale question, including inversion of scores. (Issa and Sonbul, 2022).

*** Pilot study**

Prior to the main data collection phase, a pilot study was conducted with a small sample of 38 ($\approx 10\%$) of respondents to evaluate the internal consistency of the questionnaire. The results of Cronbach alpha coefficients indicated a reasonable degree of internal consistency of the responses. The pilot study results also indicated that the questions were clear and understandable for the society.

6- Tool Reliability & tool Validity: The reliability of the survey tools used in our study was assessed using the Cronbach's alpha coefficient, a measure of internal consistency, to ensure that each scale reliably measures the constructs of interest.

Scale A, measuring awareness about Crohn's disease, yielded a Cronbach's alpha of 0.520. This value

suggests a moderate level of internal consistency and indicates that some items may not be effectively capturing the intended construct. This moderate value suggests potential issues in some items' ability to capture the intended construct, warranting a review and possible refinement.

Scale B, which assessed attitudes towards Crohn's disease, demonstrated a higher internal consistency with a Cronbach's alpha of 0.781, indicating that the scale reliably reflects participants' attitudes. This suggests that the items in this scale are more reliable and consistently reflect the participants' attitudes towards Crohn's disease. This scale provides robust data contributing to our understanding of the community's perceptions and their potential impacts on disease management.

With Arabic being the first spoken language in Saudi Arabia, the questionnaire was carefully designed and translated to Arabic with the assistance of an expert in Arabic and English languages, then reconverted to English. The validity of the data collection tool was examined prior to the data collection process. Face and content validity rate (CVR) was measured statistically = 99% indicating a high level of content

validity index.

Combining the items from both scales yielded an overall Cronbach's alpha of 0.651, suggesting a reasonable level of reliability for this preliminary study. This overall reliability supports the survey tool's utility in capturing relevant data across different constructs, although improvements could be made, especially within Scale A, to enhance reliability further.

These reliability measures confirm that while the survey tools used are adequate for preliminary insights into awareness and attitudes, further refinement and validation are recommended to ensure comprehensive and accurate measurement of these constructs in future studies.

7- Data collection process: After obtaining the approval from ethical committee of the Faculty of Nursing, King Abdulaziz University, and conducting a pilot study survey, the finalized questionnaire was published by using a snowball method through social media platforms (WhatsApp, Twitter, Snapchat...) and in-person over the period of one week, started on 17th of March 2024. After obtaining a total of 385 responses we deactivated the link of the questionnaire on 24th of March 2024.

Informed consent was taken electronically before completing the survey. participants were presented with two options regarding their participation: "yes" indicating their agreement to partake in the research and complete the questionnaire, or "no" signaling their decision to withdraw from participation. The data collection process adhered to ethical considerations and guidelines and ensured participant anonymity and confidentiality throughout. The questionnaire was based on a validated questionnaire from a previous study (Meeralam, 2023).

*** Data analysis**

1- Study variables: -

1- Sociodemographic demographic characteristics involves assessing how factors such as age, gender, 2- educational level, income, marital status, occupational status, and number of children influence individuals' awareness, attitudes toward Crohn's disease.

3- Awareness of Crohn's disease: measuring the level of awareness, knowledge, understanding, and recognition of Crohn's disease in Saudi society. And to gather data on participants regarding its symptoms, risk factors, treatments, and impact on quality of life.

4- Attitudes toward Crohn's disease: involves assessing Saudi society's

perceptions, beliefs, attitudes, and emotional responses towards the disease.

2- Statistical test used: Data was collected from participants were organized in Excel sheet. SPSS software version 25 was used to analyze the data. Descriptive statistics, such as frequencies, mean, standard deviation, range, and Ministry of Education percentages, was calculated to describe the variables of the study. The percent of agreement was calculated for the attitude Likert scale items by dividing the item mean score over 5. The categorical variables were presented in frequency and percentages. Independent groups T test and ANOVA were used to examine significant differences in attitude score. A p-value of less than or equal to 0.05 is considered significant.

3- Ethical considerations: Ethical approval was conducted by the ethical committee of the Faculty of Nursing Jeddah, King Abdulaziz University, Saudi Arabia. The research study was from participants, participation is completely voluntary and anonymous. They have the right to withdraw at any time, confidentiality and privacy of information has been maintained. Informed consent was taken electronically before completing the

survey. The researchers protect the anonymous data and will not use it for any purposes other than the purpose of this study. (See Appendix D)

*** Results and discussion**

1- Results: Primary findings of the study concerning the level of awareness and attitudes toward Crohn's Disease among the population of Jeddah, Saudi Arabia will be shown in this section. Data collected from the survey are presented through quantitative analysis, illustrating key trends and variations in responses. These results highlight the community's understanding of Crohn's Disease, their perceptions of its symptoms and treatment, and their overall attitude towards individuals affected by this condition.

Table 1 Sociodemographic Characteristics of participants, frequencies, and percentage

Variable	N=432
Age	
20-30 years	315 (72.9)
31-40 years	79 (18.3)
41-50 years	24 (5.6)
More than 50 years	14 (3.2)
Gender	
Male	199 (46.1)
Female	233 (53.9)
Marital status	
Single	326 (75.5)
Married	89 (20.6)
Divorced	12 (2.8)
Widow	5 (1.2)
Living status	
Apartment rent	146 (33.8)
Apartment owner	119 (27.5)
Villa rent	9 (2.1)
Villa owner	148 (34.3)
Joint rent	10 (2.3)
Income Level	
Less than 3000 SAR	105 (24.3)
3000-5000 SAR	73 (16.9)
More than 5000 SAR	169 (39.1)
None	85 (19.7)
Children	
None	318 (73.6)
1-2	46 (10.6)
3-4	35 (8.1)
More than 4	33 (7.6)
Educational level	
Primary	7 (1.6)
Intermediate	20 (4.6)
Secondary	171 (39.6)
Bachelor	213 (49.3)
Postgraduate	21 (4.9)
Occupational status	
Health sector employer	18 (4.2)
Non health sector employer	98 (22.7)
Unemployed	112 (25.9)
Retired	19 (4.4)
Student	185 (42.8)

Table 1 shows 432 individuals who participated in the study. The majority (72.9%) were young adults

between the ages of 20 and 30, with females making up approximately 54% of the sample. A significant majority (75.5%) were single. About one-third of the participants resided in rented apartments, and roughly 40% reported an income exceeding 5000 SAR. The predominant number of participants did not have children, and nearly half held a bachelor's degree. Students formed the largest group, constituting 42.8% of the sample.

This demographic distribution provides insights into the study's context, highlighting a youthful and relatively educated cohort, which could influence the general awareness and responsiveness to health education regarding Crohn's Disease within the region.

Table 2 Awareness Characteristics of participants, frequencies, and percentage

Item	Yes	No
Do you have prior knowledge of inflammatory bowel disease (Crohn's disease)?	126 (29.2)	306 (70.8)
Do you have any immune disease such as psoriasis, multiple sclerosis, etc.?	21 (4.9)	411 (95.1)
Did you know that inflammatory bowel disease (Crohn's disease) affects the intestine?	175 (40.5)	257 (59.5)
Do you see a doctor when you feel abdominal pain?	191 (44.2)	241 (55.8)
Do you do regular check-ups to check on your health condition?	132 (30.6)	300 (69.4)
Is there a cure for inflammatory bowel disease (Crohn's disease)?	219 (50.7)	213 (49.3)
Did you know that the most common symptom of inflammatory bowel disease (Crohn's disease) is abdominal pain?	165 (38.2)	267 (61.8)
Does your diet contain dairy products or fibers?	368 (85.2)	64 (14.8)
Do you use pain relievers (Panadol, Brufen, etc.) when abdominal pain occurs?	248 (57.4)	184 (42.6)
Is inflammatory bowel disease (Crohn's disease) a simple stomach problem that can be easily treated with over-the counter medications?	73 (16.9)	359 (83.1)
Public awareness and education campaigns are the most effective way to improve social attitudes towards inflammatory bowel disease (Crohn's disease)?	362 (83.8)	70 (16.2)



Figure 1 Level of awareness, frequencies, and percentages.

The classification of awareness levels regarding Crohn's disease is depicted in the preceding figure [Figure 2]. Participants scoring less than three correct answers on the awareness scale were categorized as having low awareness (14.4%). Those who answered between three and six questions correctly were deemed to have moderate awareness (54.6%), and participants with more than six correct answers were identified as having a high level of awareness.

Table 3 Attitude Characteristics of participants, mean score, and percentage of agreement

Item	Mean score	% of Agreement
In my opinion, inflammatory bowel disease (Crohn's disease) negatively affects quality of life.	4.03	80.6
I feel that inflammatory bowel disease (Crohn's disease) is more common than diabetes and high blood pressure.	2.97	59.4
I believe that colon cancer is more common than inflammatory bowel disease (Crohn's disease).	3.71	74.1
I believe that diet is the most important reason for treating the symptoms of inflammatory bowel disease (Crohn's disease).	4.10	82.0
Genetic factors and bacterial and viral infections are believed to be among the most common causes of inflammatory bowel disease (Crohn's disease).	3.83	76.6
In my opinion, psychological and emotional disorders play a role in inflammatory bowel disease (Crohn's disease).	3.84	76.8
I believe that patients with inflammatory bowel disease should reduce their intake of fatty acids (animal oils, cream, fatty meats, etc.).	3.99	79.8
I believe that some prescription medications have a role in improving the symptoms of inflammatory bowel disease (Crohn's disease).	4.00	79.9
Resorting to alternative treatment methods (acupuncture - herbal therapy - tea - roots - ...) to improve the symptoms of inflammatory bowel disease (Crohn's disease).	3.41	68.2
I believe that surgeries can improve inflammatory bowel disease (Crohn's disease).	3.47	69.4

The data in Table 3 presents

the mean scores and percentage agreement for the Crohn's attitude scale. The highest percentage of agreement (82.0%) among the participants was on the importance of nutrition in the treatment of Crohn's Disease, followed closely by 80.6% of participants agreeing that Crohn's Disease significantly affects the quality of life. This information highlights the strong consensus among respondents about the critical role of dietary management in treating Crohn's Disease and the significant impact the disease has on individuals' lives. This level of agreement underscores the need for focused educational programs that enhance understanding of nutritional strategies and the overall management of Crohn's Disease to improve patient outcomes and quality of life.

Table 4 Sociodemographic characteristics of participants by Crohn's Awareness scale, mean \pm SD Score, and P-value.

Variable	Mean \pm SD score	P-value
Age		0.155
20-30 years	4.2 \pm 2.1	
31-40 years	4.8 \pm 2.0	
41-50 years	4.5 \pm 1.7	
More than 50 years	5.4 \pm 1.8	
Gender		0.001*
Male	4.1 \pm 2.0	
Female	5.3 \pm 2.1	
Marital status		0.531
Single	4.7 \pm 2.1	
Married	4.9 \pm 2.1	
Divorced	5.4 \pm 2.2	
Widow	5.4 \pm 2.3	
Living status		0.011*
Apartment rent	4.5 \pm 2.1	
Apartment owner	5.0 \pm 1.9	
Villa rent	6.4 \pm 1.7	
Villa owner	4.8 \pm 2.2	
Joint rent	3.7 \pm 2.0	
Income level		0.049*
Less than 3000 SAR	4.8 \pm 2.1	
3000-5000 SAR	4.7 \pm 1.9	
More than 5000 SAR	5.0 \pm 2.0	
None	4.2 \pm 2.2	
Number of Children		0.991
None	4.8 \pm 2.1	
1-2	4.7 \pm 2.3	
3-4	4.8 \pm 1.8	
More than 4	4.7 \pm 2.2	
Educational level		
Primary	6.1 \pm 2.8	0.443
Intermediate	4.8 \pm 2.1	
Secondary	4.6 \pm 2.0	
Bachelor	4.8 \pm 2.1	
Postgraduate	4.9 \pm 2.4	
Occupational status		0.129
Health sector employer	5.5 \pm 2.7	
Non health sector employer	4.4 \pm 1.7	
Unemployed	4.7 \pm 2.1	
Retired	5.0 \pm 2.1	
Student	4.9 \pm 2.2	

The analysis of the awareness scale, based on the total correct responses, was conducted in relation to the socioeconomic characteristics of participants detailed in Table 4.

The study found significant variances in awareness scores influenced by factors such as gender, living status, and income level. Notably, females demonstrated higher average awareness scores compared to males. Additionally, participants with higher income and economic status exhibited a greater understanding of Crohn's Disease.

These disparities in awareness highlight the influence of socioeconomic factors on health literacy, suggesting that women and individuals in higher economic brackets may have better access to health information or more opportunities for education about chronic diseases like Crohn's. This information is crucial for developing targeted interventions aimed at increasing disease awareness and understanding across all segments of the population, especially among those identified as having lower levels of awareness.

Table 1 Sociodemographic characteristics of participants by Crohn's Attitude scale, Mean score, P-value

Variable	Mean score	P-value
Age		0.743
20-30 years	3.72	
31-40 years	3.78	
41-50 years	3.66	
More than 50 years	3.84	
Gender		
Male	3.66	0.042*
Female	3.79	
Marital status		0.549
Single	3.73	
Married	3.76	
Divorced	3.56	
Widow	4.02	
Living status		0.729
Apartment rent	3.70	
Apartment owner	3.76	
Villa rent	3.94	
Villa owner	3.73	
Joint rent	3.60	
Income level		0.925
Less than 3000 SAR	3.77	
3000-5000 SAR	3.71	
More than 5000 SAR	3.73	
None	3.72	
Number of Children		0.945
None	3.72	
1-2	3.73	
3-4	3.76	
More than 4	3.79	
Educational level		0.442
Primary	3.64	
Intermediate	3.96	
Secondary	3.71	
Bachelor	3.75	
Postgraduate	3.61	
Occupational status		0.028*
Health sector employer	3.92	
Non health sector employer	3.58	
Unemployed	3.84	
Retired	3.86	
Student	3.72	

Same this the T-test and ANOVA analyses conducted on the Crohn's attitude mean scores are

summarized in Table 5. The results indicated significant variances in attitudes based on gender and occupational status. Notably, females and individuals employed in the health sector exhibited higher attitude mean scores.

These findings highlight that females and health sector employees tend to have more positive or supportive attitudes toward Crohn's Disease management. This suggests that these groups may have a deeper understanding or greater empathy towards the challenges associated with managing chronic diseases, likely influenced by their professional backgrounds or personal proactive engagement with health information. Such insights are invaluable for tailoring public health interventions to enhance the overall community support and management strategies for Crohn's Disease, focusing on groups that might benefit from targeted attitude adjustment initiatives.

* Discussion

This study aims to assess awareness level and attitude towards Crohn's disease in Jeddah region, the results of this study indicate a considerable lack of awareness about Crohn's Disease among the general population in Jeddah region, with most participants reporting no prior

awareness of the disease. This suggests a significant information gap that could hinder effective management and treatment outcomes for individuals affected by Crohn's Disease in this region. In agreement, the article by Alharbi et al. (2024) shows healthcare professionals, although more aware post-education, they still exhibited discomfort in managing the disease, highlighting a disconnect between awareness acquisition and practical application.

Contrary to the initial hypothesis that educational interventions alone might suffice in improving disease management confidence among healthcare professionals, our study findings and those of similar studies suggest that while awareness can be improved, translating this awareness into comfort and competence in management practices remains a challenge. In contrast, the study by Khan et al. (2024) reported high levels of awareness about IBS, which disagrees with our findings and suggests that the strategies used in Alahsa might be adapted to improve outcomes in Jeddah.

The study also highlights significant consensus among participants regarding the critical role of dietary management and the substantial impact of Crohn's Disease

on life quality. Participants strongly agreed on the importance of nutrition in managing Crohn's Disease and its severe effects on individuals' quality of life.

Similarly, Meeralam et al. (2023) highlight general awareness of Inflammatory Bowel Disease but indicate a potential gap in detailed knowledge necessary for early diagnosis and effective management. Both studies agree on the necessity for enhanced educational initiatives focusing on the significant aspects of disease management and the potential benefits of early medical intervention. This analysis illustrates the urgent need for targeted educational strategies that address both the general and specific aspects of Crohn's Disease, aiming to elevate awareness and improve patient outcomes in the Saudi population.

The results also show that sociodemographic characteristics significantly influence awareness levels about Crohn's Disease. Higher education correlates with better understanding, suggesting that educational interventions should be stratified based on demographic factors to be more effective. In agreement, a regional study by Aldakhil et al. (2022) observed variable awareness depending on demographic characteristics such as

age and gender, reinforcing the need for targeted awareness programs.

Furthermore, the study assesses attitudes toward Crohn's Disease across different sociodemographic characteristics, including how different ages, genders, or education levels perceive the severity of the disease and its impact on quality of life. Supporting this, the comparative study by Al-harbi et al. (2022) shows that younger individuals or those with higher education levels tend to have a better understanding of the disease, which can translate into more informed attitudes toward disease management and treatment.

*** Conclusion**

This study conducted in Jeddah aimed to evaluate the awareness and attitudes towards Crohn's disease among the local population. The results show a concerning lack of prior knowledge, with approximately 70.8% of participants unaware of the disease, highlighting a significant educational gap in a condition known to substantially impact quality of life.

Despite this lack of awareness, the participants generally recognized the importance of nutrition in managing Crohn's disease and acknowledged its severe effects on life quality. This positive attitude

towards disease management contrasts sharply with the low levels of specific knowledge about the disease, emphasizing the need for comprehensive educational initiatives tailored to the needs of the community.

Furthermore, the study provided valuable insights into the influence of socioeconomic factors on health literacy, with women and higher-income groups demonstrating greater awareness. These findings suggest that educational efforts need to be adjusted to reach and effectively inform all segments of the population.

Overall, the study contributes significantly to the existing literature by pinpointing the critical areas where educational interventions can be applied to improve both the understanding and management of Crohn's disease in Jeddah, enhancing public health outcomes.

*** Recommendations**

Based on the research findings,, we can make society a more knowledgeable, supporting, and compassionate place for people living with Crohn's disease by putting these recommendations into action. This will not only improve their quality of life but will also benefit overall public health and well-being.

1- Educate the public about Crohn's

disease, its symptoms, and the obstacles that persons living with it encounter. These campaigns should use a variety of media outlets, such as social media, television, and community events, to reach a large audience.

2- Apply conduct program online and in-person support groups for Crohn's disease patients and their families to share experiences, provide mutual support, and access resources. These organizations can considerably reduce feelings of isolation and promote a sense of community.

3- Provide specialized training for healthcare providers to better understand Crohn's disease and improve patient treatment. This includes recognizing symptoms early, providing empathic support, and staying up to date on the latest therapies and management techniques.

4- Incorporated Crohn's Disease Awareness into School Curriculum: Incorporate teachings about Crohn's disease and other chronic illnesses into school curricula to educate students at a young age. This can increase understanding, eliminate stigma, and foster empathy among peers. Schools can work together with health organizations to create age-appropriate educational materials and activities.

*** Implications and Future Research**

This study underscores the critical need for enhanced educational efforts tailored specifically to different demographics within the Jeddah region. Future research should explore the efficacy of various educational strategies observed in other regions, like the study (Khan et al., 2024), and adapt these to the sociocultural context of Jeddah. Moreover, further studies are needed to investigate the longitudinal impacts of these educational interventions on both awareness levels and practical management skills of Crohn's Disease.

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