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Awareness and Prevalence of Psychological Stress-Induced Peptic Ulcers in Saudi Arabia

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Abstract— **Introduction** Peptic ulcer disease (PUD) is a chronic condition stemming from various factors, including H. pylori infection and NSAID use. Though stress was once considered a contributing factor, it has taken a backseat in recent research. To address this, the study aims to evaluate the awareness and prevalence of stress-induced PUD. **Methodology** This was a cross-sectional study conducted in Saudi Arabia during the year 2023 among diagnosed peptic ulcer, symptomatic patients in Saudi Arabia. Data was collected using a formulated questionnaire and analyzed using the SPSS program. **Results** This study included 481 participants. Clinical characteristics revealed that 35.6% had been diagnosed with peptic ulcers. 65.9% reported never using nonsteroidal anti-inflammatory drugs (NSAIDs). Regarding the awareness of PUD, stress was recognized by 30.8% as an important contributing factor. Most participants believed that psychological stress could cause PUD, while 68% acknowledged the significance of smoking. The most common symptom identified was stomach pain (44.9%), and the majority disagreed that a person with a stomach ulcer could remain asymptomatic (44.1%). **Conclusion** A moderate level of awareness was found among the population regarding the role of stress in peptic ulcer development. While stress is recognized as a potential factor, the relationship between perceived stress levels and peptic ulcers is more complex than previously thought.

Keywords*:* Peptic ulcer disease, psychological stress, H. pylori Infection

1. Introduction

Peptic ulcer disease (PU) is a prevalent chronic condition due to an imbalance between mucosal defense and gastric acid/pepsin. The stomach and duodenum are where PU is most common [1]. It is considered multifactorial pathogenesis. Four million individuals globally experience it each year [2]. with an estimated lifetime prevalence of 5-10% in the general population [3].

Epigastric pain, characterized by a gnawing or burning sensation after eating, is the most typical sign of gastric and duodenal ulcers, overuse of nonsteroidal anti-inflammatory medicines (NSAIDs) and Helicobacter pylori (H. pylori) infection are factors in the majority of instances of PUD [4]. Other risk factors for PU are poor education, alcohol use, physical inactivity, aging, male gender, stress, and smoking [5].

Helicobacter pylori and nonsteroidal anti-inflammatory drugs have long replaced stress as a recognized cause of peptic ulcer disease, and reliable sources now generally ignore the role of

psychosocial factors. [6,7]. However, a small proportion of people exposed to H pylori or NSAIDs develop ulcers, and neither can implicate 16%–31% of ulcers; therefore, co-factors and alternate causes must be common. [8-10]. Since chronic physical and psychological stress severely impacts individuals, stress-related disorders have become a significant public health problem. The two most common stress-related diseases that affect the digestive system are stress ulcers and irritable bowel syndrome [11]. Psychological stress most likely works with H pylori as a co-factor. It might accomplish this by encouraging actions that endanger people's health or by increasing the production of stomach acid [12].

Based on a study conducted in Denmark, it was found that life stress at baseline increased the risk of later confirmed gastric ulcers in a population-based cohort with no history of ulcers at baseline. Patients who were seropositive for H pylori, seronegative for H pylori, and those who were not exposed to either H pylori or nonsteroidal anti-inflammatory medications had a similar rate of ulcer risk associated with stress. [13]

Awareness among the general population of the risk factors of PU is limited. Based on a study conducted in northern Saudi Arabia on 571 participants, 52.5% didn't know about peptic ulcers, but 76.9% thought that stress might cause peptic ulcers [14]

The concept that psychological factors contribute to ulcer etiology has remained [15,16]. However, no prospective studies considering all the main risk factors have connected stress to the occurrence of medically diagnosed ulcers in population-based data sets. Since understanding peptic ulcers etiology will be crucial to understanding how the ailment manifests itself biopsychosocially, by conducting this study, we will add knowledge, awareness, and prevalence of stress-induced peptic ulcer. Therefore, this study aims to evaluate the awareness and prevalence of stress-induced ulcers in Saudi Arabia.

Methodology:

This study aims to determine the level of awareness, and the prevalence of psychological stress- induced peptic ulcers in Saudi Arabia.

Materials and methods:

This cross-sectional descriptive research was done from June 2023 to November 2023. A total of 481 participants from all areas of Saudi Arabia have been recruited for the study using a simple random selection approach.

Inclusion and exclusion criteria

Adult men and females over the age of 18 who are Saudis and live in Saudi Arabia, have been diagnosed with peptic ulcer disease, or have peptic ulcer disease symptoms related to stress are included within the inclusion criteria. Adults who are not Saudis, children, and those who refused to participate in the study were all excluded.

Sample size calculation

The sample size was calculated by using raosoft electronic calculator. [17] the following value was chosen: acceptable margin of error (5%), confidence level (95%) population size = more than 20000 and by using these data the giving sample size of 388 patients was expected to be collected in the period between June to November of 2023.

Data collection and management

A self-administered survey was implemented with questionnaire items validated by specialists, and a pilot study of 15 participants was carried out. The pilot study participants

had been excluded from taking part in the study. The online self-administered questionnaire was used to obtain data, and before beginning to fill it out, participants had to consent to participate in the study. The survey was divided into four components, the first of which included demographic information such as age, current living country, living region, gender, marital status, employment, and education. The second section included questions about patient health data related to PU disease, such as whether or not the patient had been diagnosed with PUD, the history of H.pylori testing and the results, the frequency of NSAID use, and questions about PUD symptoms such as epigastric pain, nausea, and vomiting. The third element of the questionnaire was designed to determine the amount of knowledge about PU illnesses; this piece was adapted from previous research and was approved by Sergons [18]. The final portion comprises the perceived stress scale [19]. The survey was circulated to all Saudi individuals who met the requirements after it was approved by King Faisal University's institutional review board. The individuals were invited to fill out a survey. Data collection, anonymity, and the ability of each individual to reject participation have all been explained to the participants.

Statistical analysis

Both descriptive and inferential statistical analysis of the data was carried out. Simple descriptive statistics of the sociodemographic characteristics and other categorical variables in the form of frequencies and percentages were calculated and tabulated. For continuous variables means and standard deviations (SDs) were reported as measures of central tendency and dispersion respectively.

Scoring was done for the 10 question “Modified Cohen’s Perceived Stress Questionnaire”, based on pre-established guidelines (0=Never, 1=Almost Never, 2=Sometimes, 3=Often, 4=Very Often). The perceived stress score was compared among participants with and without peptic ulcer disease using independent sample t-test. Association of peptic ulcer disease with sociodemographic factors was assessed using Fischer’s Exact Test. Significance was established at a p-value of 0.05 indicating a 95% confidence interval. All statistical calculations were performed using IBM SPSS version 27.0.1.

Finance and resource use

The research was fully funded by the researcher.

Results

*Sociodemographic Characteristics***:** The sociodemographic characteristics of the 481 study participants reveal a diverse sample. The majority fall within the 18-29 age group (31.4%), followed by those aged 30-39 and 40-49 (both 21.6%). Nearly all participants (99.6%) currently reside in Saudi Arabia, primarily in the Eastern Province (64.7%). Gender distribution shows more females (72.6%) than males (27.4%). Most are married (56.1%), followed by bachelors (38.0%), students (28.7%), and divorced individuals (3.7%). A smaller percentage are widows (2.1%). Occupations vary, with 33.3% employed, 26.2% unemployed, 28.7% students, and 11.9% retired. Education levels include primarily university education or higher (72.3%), secondary education (21.8%), and smaller percentages at lower education levels. *(Table 1)*

Table 1

Sociodemographic Characteristics of The Participants

		N	%
Age	18-29	151	31.4%
	30-39	104	21.6%
	40-49	104	21.6%
	50-59	89	18.5%
	Older Than 60	33	6.9%
Country Currently Living In:	Other	2	0.4%
	Saudi Arabia	479	99.6%
Living Area	Central Region	43	8.9%
	Eastern Province	311	64.7%
	Southern Area	98	20.4%
	The Northern Area	7	1.5%
	Western Region	22	4.6%
Gender:	Female	349	72.6%
	Male	132	27.4%
Marital Status	Bachelor	183	38.0%
	Divorced	18	3.7%
	Married	270	56.1%
	Widow	10	2.1%
Occupation	Employee	160	33.3%
	Retired	57	11.9%
	Student	138	28.7%
	Unemployed	126	26.2%
Education Level	Diploma	5	1.0%
	Middle	13	2.7%
	Primary	10	2.1%
	Secondary	105	21.8%
	University Education Or Higher	348	72.3%

Clinical Characteristics: Approximately 35.6% of respondents reported having been diagnosed with a peptic ulcer (stomach ulcer), while the majority (64.4%) had not received such a diagnosis. In terms of stomach bacteria testing, 45.9% had undergone the test, with 59.7% testing positive for stomach bacteria, and 40.3% having negative results. Concerning the use of nonsteroidal anti-inflammatory drugs (NSAIDs), 65.9% of participants reported never using them, while 4.4% used them daily, 21.4% used them monthly, and 8.3% used them weekly. Among the participants, 59% experienced pain, burning, or gnawing sensations in the upper abdomen, while 41% did not. Furthermore, 42.8% reported suffering from

nausea or vomiting, with 74.8% of those individuals feeling better when taking antacids (e.g., Omeprazole), while 25.2% did not experience relief with antacids. *(Table 2)*

Table 2

Clinical Characteristics of The Participants

		N	%
Have You Ever Been Diagnosed with Peptic Ulcer (Stomach Ulcer)?	No	310	64.4%
	Yes	171	35.6%
Have You Ever Had a Stomach Bacteria Test?	No	260	54.1%
	Yes	221	45.9%
If Yes, What Was the Result? (N=221)	Negative	89	40.3%
	Positive	132	59.7%
How Often Do You Use NSAIDs (Ibuprofen, Aspirin, Naproxen... etc..)	Never	317	65.9%
	Daily	21	4.4%
	Monthly	103	21.4%
	Weekly	40	8.3%
Do You Have Pain (Burning or Gnawing) Or Discomfort in Your Upper Abdomen?	No	197	41.0%
	Yes	284	59.0%
Do You Suffer from Nausea or Vomiting?	No	275	57.2%
	Yes	206	42.8%
If Yes, Do You Feel Better When Taking Antacids (Omeprazole.)? (N=206)	No	52	25.2%
	Yes	154	74.8%

*Awareness of PUD***:** When asked about the most important factors contributing to stomach ulcers, 30.8% identified stress, while 26.4% pointed to smoking. A significant portion (36.2%) responded with "Don't know," suggesting some uncertainty regarding the etiology of ulcers. When questioned about whether psychological stress can cause stomach ulcers, a majority (77.5%) believed it could, while 8.5% disagreed, and 13.9% remained uncertain. Concerning smoking's role in ulcers, 68% acknowledged its significance, while 24.5% were unsure. When participants were asked about the most common symptom of stomach ulcers, 44.9% identified stomach pain, 31.2% indicated heartburn and 15.6% responded with "Don't know." In response to the query about whether a person with a stomach ulcer can remain asymptomatic, 44.1% disagreed, 24.3% agreed, and 31.6% were uncertain. Regarding the methods of diagnosis, 42.6% correctly selected "All of the above" as the appropriate option, and 30.1% believed that an endoscope is used in diagnosis. Lastly, 61.7% of participants recognized that stomach ulcers can lead to complications such as bleeding and perforation, while 10.4% disagreed, and 27.9% were uncertain. *(Table 3)*

Table 3

Awareness Of Peptic Ulcer Disease Among the Participants

	N	%

In your opinion, which of the following is most important for stomach ulcers?	Age over 60	32	6.7%
	Don't know	174	36.2%
	Smoking	127	26.4%
	Stress	148	30.8%
Do you think that stomach ulcers can be caused by psychological stress?	Don't know	67	13.9%
	No	41	8.5%
	Yes	373	77.5%
Do you think smoking has a role in stomach ulcers?	Don't know	118	24.5%
	No	36	7.5%
	Yes	327	68.0%
What do you think is the most common symptom of stomach ulcers?	Don't know	75	15.6%
	Heartburn	150	31.2%
	Nausea	19	4.0%
	Stomach pain	216	44.9%
	Vomiting	21	4.4%
Do you think a person with a stomach ulcer can remain asymptomatic?	Don't know	152	31.6%
	No	212	44.1%
	Yes	117	24.3%
How do you think stomach ulcers are diagnosed?	All of the above	205	42.6%
	Blood test	21	4.4%
	Don't know	68	14.1%
	Stomach bacteria test	42	8.7%
	The telescope	145	30.1%
At what age is an endoscope recommended?	At the age of over 55	170	35.3%
	Don't know	155	32.2%
	Under the age of 55	156	32.4%
Do you think that stomach ulcers can lead to complications such as bleeding and perforation?	I do not know	134	27.9%
	No	50	10.4%
	Yes	297	61.7%

Perceived Stress of the Participants: Table 4 presents the responses of the 481 participants to Cohen's Perceived Stress Scale, which assesses their stress experiences in the past month. To summarize, we can combine the "never" and "almost never" percentages into a single category termed "never/almost never," and similarly, the "often" and "very often" percentages into "often/very often." This reveals that for the first question, regarding being upset by unexpected events, 42.2% reported "never/almost never," while for the second question on feeling unable to control important aspects of life, 42.2% also fell into the "never/almost never" category. The third question, about feeling stressed, found that 34.9% experienced stress "never/almost never." In terms of feeling confident about dealing with personal problems (question four) and feeling like things are going their way (question five), 38.6% and 30.4% reported "never/almost never," respectively. The question about finding it challenging to cope with their workload (question six) saw 41.6% in the "often/very often"

category. When it came to managing discomfort in life (question seven), 37.3% were in the "often/very often" group. For feeling on top of things (question eight), 37.2% experienced it "often/very often." In the context of feeling angry over uncontrollable situations (question nine), 35.6% reported "often/very often." Lastly, for the question about difficulties piling up (question ten), 36.2% were in the "often/very often" category.

The overall mean perceived stress score of the sample was found to be 19.72 (SD=5.67).

Table 4

Responses Of the Participants To Cohen's Perceived Stress Scale

	Never		**Almost Never**		**Sometimes**		**Often**		**Very Often**	
	N	%	N	%	N	%	N	%	N	%
1. In the past month, how often have you been upset by something that happened unexpectedly ?	100	20.8%	103	21.4%	122	25.4%	96	20.0%	60	12.5%
2. In the past month, how often have you felt unable to control important things in your life?	102	21.2%	101	21.0%	120	24.9%	104	21.6%	54	11.2%
3. In the past month, how often have you felt stressed?	68	14.1%	100	20.8%	126	26.2%	104	21.6%	83	17.3%
4. In the past month, how often have you felt confident about your ability to deal	71	14.8%	115	23.9%	130	27.0%	107	22.2%	58	12.1%

	with your personal problems?										
5.	In the past month, how often have you felt like things are going your way?	88	18.3%	109	22.7%	130	27.0%	115	23.9%	39	8.1%
6.	In the past month, how often did you find that you couldn't cope with all the things you had to do?	90	18.7%	110	22.9%	149	31.0%	89	18.5%	43	8.9%
7.	In the past month, how often have you managed to control discomfort in your life?	72	15.0%	106	22.0%	148	30.8%	120	24.9%	35	7.3%
8.	In the past month, how often have you felt on top of things?	81	16.8%	104	21.6%	115	23.9%	132	27.4%	49	10.2%
9.	In the past month, how often have you felt angry over things that were beyond your control?	74	15.4%	99	20.6%	137	28.5%	107	22.2%	64	13.3%
10.	In the past month, how often have you felt difficulties	95	19.8%	110	22.9%	116	24.1%	105	21.8%	55	11.4%

	pile up so much that you can't overcome them?

Factors Associated with PUD: Table 5 examines the association of peptic ulcer disease with sociodemographic characteristics among the study participants. The data indicates that age has a statistically significant association with peptic ulcer diagnosis (p=0.009). Participants in the age group 18-29 had a lower prevalence of peptic ulcer (25.8%) compared to other age groups, with those aged 30-39 and 40-49 showing lower rates of 45.2% and 32.7%, respectively. Additionally, the living area also showed a significant association (p=0.002), with participants in the Southern area having the lowest peptic ulcer prevalence at 26.5%, while those in the Central Region had the highest at 58.1%. Gender also displayed a significant association (p=0.004), with females having a lower prevalence (31.5%) compared to males (46.2%). Occupations were significantly associated with peptic ulcer (p=0.002), with students showing the lowest prevalence (26.1%) and employees having the highest (46.9%). Other factors, including the country currently living in, marital status, and education level, did not show significant associations with peptic ulcer diagnosis.

Table 5

Association Of Peptic Ulcer Disease with Sociodemographic Characteristics

		Have you ever been diagnosed with peptic ulcer (stomach ulcer)?				
		No		Yes		P value
		N	Row %	N	Row %	
Age	18-29	112	74.2%	39	25.8%	0.009*
	30-39	57	54.8%	47	45.2%	
	40-49	70	67.3%	34	32.7%	
	50-59	50	56.2%	39	43.8%	
	Older than 60	21	63.6%	12	36.4%	
The country currently living in:	Other	1	50.0%	1	50.0%	1.000
	Saudi Arabia	309	64.5%	170	35.5%	
Living Area	Central Region	18	41.9%	25	58.1%	0.002*
	Eastern Province	206	66.2%	105	33.8%	
	Southern area	72	73.5%	26	26.5%	
	The northern area	3	42.9%	4	57.1%	
	Western Region	11	50.0%	11	50.0%	
Gender	Female	239	68.5%	110	31.5%	0.004*

	Male	71	53.8%	61	46.2%	
Marital Status	bachelor	128	69.9%	55	30.1%	0.222
	divorced	11	61.1%	7	38.9%	
	married	164	60.7%	106	39.3%	
	widow	7	70.0%	3	30.0%	
Occupation	employee	85	53.1%	75	46.9%	0.002*
	retired	37	64.9%	20	35.1%	
	student	102	73.9%	36	26.1%	
	unemployed	86	68.3%	40	31.7%	
Education Level	Diploma	5	100.0%	0	0.0%	0.491
	Middle	10	76.9%	3	23.1%	
	Primary	7	70.0%	3	30.0%	
	Secondary	67	63.8%	38	36.2%	
	University Education or Higher	221	63.5%	127	36.5%	

[F]Fischer's Exact Test
*p<0.05, Significant

Association of Stress Score with PUD: Table 6 presents a comparison of the Perceived Stress Score between participants with and without peptic ulcer disease. The data shows that participants with a peptic ulcer (M=20.04, SD=5.25) have a slightly higher mean Perceived Stress Score compared to those without a peptic ulcer (M=19.54, SD=5.89). However, the difference in the scores is not statistically significant, as indicated by the p-value of 0.337 obtained from an independent samples t-test. This suggests that, based on the study's findings, there is no significant difference in perceived stress levels between individuals with peptic ulcer disease and those without.

Table 6

Comparison Of Perceived Stress Score of Participants with And Without Peptic Ulcer Disease (PUD)

	Have you ever been diagnosed with peptic ulcer (stomach ulcer)				
	No		Yes		P value
	M	SD	M	SD	
Perceived Stress Score	19.54	5.89	20.04	5.25	0.337

[t]Independent Sample t-test

Discussion:

In this study, we aimed to investigate the awareness and prevalence of psychological stress-induced peptic ulcers among a diverse group of participants in Saudi Arabia.

The majority of the surveyed population in Saudi Arabia is aware of their peptic ulcer diagnosis. Among those who underwent stomach bacteria testing, a considerable prevalence of H. pylori infection was found among peptic ulcer patients, which is crucial for understanding the role of infections in the development of peptic ulcers [20].

A noteworthy 65.9% of participants reported never using nonsteroidal anti-inflammatory drugs (NSAIDs). This is important as NSAID use is a known risk factor for peptic ulcers [21, 22,] highlighting that a majority of patients may not have this as a contributing factor to their condition. The presence of symptoms like pain, burning, or gnawing sensations in the upper abdomen and nausea or vomiting among the participants is indicative of the clinical manifestations of peptic ulcers [23]. Moreover, 74.8% of those experiencing symptoms found relief with antacids, emphasizing the importance of understanding the potential therapeutic options for psychological stress-induced peptic ulcers [24] .

A significant percentage of respondents recognized stress as an important factor contributing to stomach ulcers. This suggests a reasonable level of awareness among the participants regarding the role of psychological stress in peptic ulcer development [25]. The acknowledgment of smoking as a contributing factor shows that a notable portion of participants are aware of the association between smoking and peptic ulcers, providing insight into their understanding of risk factors [26]. The 36.2% who responded with "I don't know" regarding the factors contributing to stomach ulcers indicate a level of uncertainty and potential lack of knowledge among a substantial portion of the participants [27].

A significant majority believe that psychological stress can cause stomach ulcers. This indicates a strong recognition of the connection between stress and peptic ulcers among the surveyed population [28], while 8.5% disagreed with the idea of psychological stress causing stomach ulcers. The identification of stomach pain as the most common symptom of stomach ulcers aligns with the clinical presentation of peptic ulcers, indicating a good understanding of the condition's symptoms among the participants [29]. The 15.6% responding with "I don't know" to the most common symptom suggests that there might be room for improvement in public education and awareness about peptic ulcer symptoms.

The recognition of complications such as bleeding and perforation by 61.7% of participants is valuable as it shows an awareness of the potential severity of peptic ulcers [30]. The understanding of diagnostic methods by 42.6% of respondents indicates a reasonable knowledge of how peptic ulcers are diagnosed. A significant percentage of participants reported experiencing stress "never/almost never" in various aspects of their lives, including being upset by unexpected events, feeling unable to control important aspects of life, and feeling stressed. These findings suggest that a notable portion of the population does not experience high levels of stress in their daily lives, which may be relevant to understanding the connection between stress and peptic ulcers.

Questions related to coping with personal problems and feeling like things are going their way showed that 38.6% and 30.4% of participants reported never and almost never, respectively. This indicates that a considerable portion of the population may not perceive significant stress in these areas. However, there are aspects where a significant percentage of

participants report experiencing stress "often or very often," such as finding it challenging to cope with their workload and managing discomfort in life. These responses indicate that many individuals do face higher levels of stress in these specific areas. The overall mean perceived stress score of 19.72 serves as a baseline for further analysis and exploration of the relationship between stress levels and the prevalence of peptic ulcers.

A statistically significant association was found between age and peptic ulcer diagnosis, with lower prevalence in the younger group compared to older age groups. This finding implies that as individuals age, they may be at a higher risk of developing peptic ulcers. It could be attributed to various factors, including cumulative exposure to risk factors over time or age-related physiological changes that make the gastric mucosa more vulnerable to damage [31]. The significant association between the living area and peptic ulcer prevalence indicates geographical disparities. For instance, a lower prevalence in the southern area compared to the central region suggests regional variations, which can be crucial for understanding the distribution of peptic ulcers in Saudi Arabia [32].

The statistically significant association by gender shows that females have a lower prevalence compared to males. This may be due to hormonal differences, as certain hormones can affect the integrity of the stomach lining. For instance, male sex hormones, such as testosterone, can influence gastric acid secretion, potentially increasing the risk of ulcers [33]. Significant associations between occupation and peptic ulcers demonstrate that occupation plays a role in the prevalence of peptic ulcers [34]. Students having a lower prevalence while employees have the highest, suggests that different occupations may contribute to varying levels of stress and, consequently, peptic ulcer development.

Based on the study’s findings, the presence of peptic ulcer disease is not associated with significantly higher levels of perceived stress when compared to individuals without peptic ulcers. This finding is important as it indicates that while stress is considered a potential risk factor for peptic ulcers, the study did not identify a clear statistical difference in perceived stress levels between those with and without the condition. It suggests that other factors or variables may play a more significant role in the development of peptic ulcers, and additional research may be needed to further explore the relationship between stress and peptic ulcer disease.

Certain limitations should be acknowledged. The data was collected through self-reporting, which is susceptible to recall bias and subjectivity. Participants may not always accurately recall or report their medical history or stress levels. The study's cross-sectional design offers a snapshot of the surveyed population at a specific point in time, making it challenging to establish causation or assess changes over time. Additionally, the study's sample was drawn from a specific region in Saudi Arabia, which may not fully represent the diversity of the entire population. As peptic ulcer prevalence can vary based on geographical, cultural, and genetic factors, the results may not be generalizable to all of Saudi Arabia.

3. Conclusion

A moderate level of awareness was found among the population regarding the role of stress in peptic ulcer development. While stress is recognized as a potential factor, the relationship

between perceived stress levels and peptic ulcers is more complex than previously thought. The study also highlighted the influence of participants' demographic data on the prevalence of peptic ulcers, emphasizing the need for a tailored approach to addressing risk factors. Future studies should explore a broader spectrum of factors contributing to peptic ulcer development and consider the impact of genetics, lifestyle, and dietary choices in a more diverse and representative sample. By building upon this research, we can enhance our understanding of the multifaceted nature of peptic ulcers and work toward more effective prevention and management strategies in the context of psychological stress in Saudi Arabia.

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