

A Cross-Sectional Study on the Prevalence of Depression and Knowledge and Attitudes towards Suicide in Medical Students in Riyadh

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ABSTRACT:

Introduction: Suicide and depression are major global public health concerns, claiming the lives of over 700,000 people each year. **Aims:** This study aims to provide significant insights into the emotional well-being of medical students in these regions by investigating the prevalence of depression as well as the comprehension of suicide. **Method:** This cross-sectional research of 200 medical students in Riyadh Provinces (Dawadmi & Shaqra) comprised people in their first to fifth years of medical school. The cohort consisted of 100 men (mean age 21.8, standard deviation 3.01 years) and 100 women (mean age 21.2, standard deviation 2.64 years), who were evenly distributed among all students. The University School of Medicine's Ethics Committee approved the study as ethical. The ethical considerations and general research technique of the investigation were ensured. **Result:** The cohort was evenly divided across all students, with 100 men (mean age 21.8, SD 3.01 years) and 100 women (mean age 21.2, SD 2.64 years). With only 60% of men and 50% of women correctly identifying the rate of 5.43 per 100,000 individuals, there is a clear knowledge gap in the current suicide rate question, highlighting the need for more awareness. 72.5% of respondents said that the migrant group was extremely vulnerable. The chi-square analysis underscored statistically significant gender differences in mental health, family conflicts, and marital issues, emphasizing the importance of gender-specific considerations in suicide prevention initiatives and mental health interventions. These findings highlight the variety of viewpoints among medical students about suicide risk factors and stress the significance of taking sociocultural and gender differences into account when developing suicide prevention programs. **Conclusion:** This study's conclusion emphasizes the ignorance Saudi medical students have on mental health and suicide. The results highlight the need for focused instructional programs. Proactive interventions are necessary, as evidenced by the trends that have been found, such as the increase in suicide rates and disparities in awareness based on gender. Since the survey includes medical professionals, it is imperative that these concerns be addressed in order to lessen stigma and put into practice practical suicide prevention measures in Saudi Arabia.

Keywords: *Mental health, medical education, suicide*

INTRODUCTION:

Suicide and depression are major public health concerns around the world. Suicide kills more than 700,000 people each year, according to the World Health Organization, and it is the fourth greatest cause of death in adults aged 15 to 29 years.[1, 2] Depression is a prevalent mental condition that affects 3.8% of the population, including 5% of adults (4% of men and 6% of women) and 5.7% of persons over the age of 60. Women are more prone than men to suffer from depression, and catastrophic losses or other stressful situations are more likely to precipitate depression.[2] Medical students have a higher prevalence of depressed symptoms than the general population, and people with chronic physical and mental problems,

including substance addiction, are more likely to commit suicide[3] Women are more prone than men to suffer from depression, and catastrophic losses or other stressful situations are more likely to precipitate depression. Medical students have a higher prevalence of depressed symptoms than the general population, and people with chronic physical and mental problems, including substance addiction, are more likely to commit suicide. Routine screening for suicidality, followed by timely therapy for suicidal patients, should be incorporated in the care of major depressive illness.[3] Individuals experiencing severe depressive symptoms, comprising approximately 43% of cases, reported facing challenges and significant obstacles both at home and in social settings. The 2014 National

Vital Statistics Reports reveal a rate of 13.4 suicide fatalities per 100,000 individuals. Notably, medical students exhibit a higher prevalence of depression compared to the general population.[4] Research conducted on medical students in Saudi Arabia reveals a notable prevalence of depressive symptoms, aligning with findings from similar studies conducted in various countries[5]. To the extent of the researchers' awareness, few studies have been conducted on the prevalence of depression among medical students in Saudi Arabia. This cross-sectional study intends to explore the prevalence of depression as well as medical students' knowledge and attitudes concerning suicide in Riyadh, Dawadmi, and Shaqra. Recognizing the unique obstacles that medical students encounter, the motivation for this research is to address the potential mental health burdens within this specific group. The study aims to give useful insights into the emotional well-being of medical students in these regions by investigating both the prevalence of depression and the comprehension of suicide. The findings may inform targeted treatments, support networks, and instructional programs aimed at increasing mental health awareness and reducing stressors unique to the medical education experience, resulting in a healthier and more resilient medical student community.

METHODOLOGY:

A questionnaire based cross-sectional study was done in a medical university in August 2022. The ethical approval of the study was obtained from college ethical Committee and the study's ethical considerations and overall research technique were ensured. The study was focused on 200 students from a medical university, specifically in Riyadh, Dawadmi, and Shaqra, with a particular emphasis on students in their first to fifth years of medical school. The cohort, evenly distributed among male and female students, comprised 100 men (with a mean age of 21.8, SD 3.01 years) and 100 women (with a mean age of 21.2, SD 2.64 years). The survey delved into the realm of Saudi suicide knowledge, encompassing statistical data, risk factors, and preventive strategies (refer to Questionnaire Appendix 1 for details).

The researchers developed a survey comprising eight multiple-choice questions and one open-ended inquiry to assess students' perspectives on suicide behavior. Consensus among the authors guided the categorization of responses into sympathetic, critical, unconcerned, or unanswered. Statistical analysis was carried out using SPSS version 11, and mean scores were compared through one-way ANOVA, coupled with multiple comparisons using Tukey-Honesty Significant Difference.[6] A chi-squared (χ^2) test was employed to ascertain the prevalence of different attitude categories, considering a significance level of $p < 0.05$.

RESULTS:

• **Knowledge assessment of medical student about mental health**

The questions and answers offered in Saudi Arabia dive into the complex landscape of suicide-related information, views, and risk factors among males and females. According to the data, the number of suicides in Saudi Arabia has been increasing, with a plateau compared to a decade earlier, and the suicide rate was 3.4 per 100,000 people in 2016, ranking 163rd internationally. The current suicide rate question reveals a knowledge gap, with just 60% of males and 50% of females correctly identifying the rate of 5.43 per 100,000 individuals, underlining the need for more awareness. According to recent study, the prevalence of depression is higher in females, as demonstrated by 70% of males and 90% of females. The age distribution of suicide victims indicates a concentration among people aged 30 to 39, stressing the vulnerability of younger age groups. Furthermore, males are regarded as more frequent suicide victims, with 30% recognizing this vs 21% of females. Health difficulties emerge as the most common cause of suicide, with 60% of males and 80% of females correctly identifying this. Similarly, 40% of males and 41% of females recognize the link between suicide and psychiatric illnesses. Family conflicts, psychological diseases, age, gender disparities, marital issues, cultural effects, and heightened risks for migrants in Saudi Arabia are among the reported risk factors for suicide.

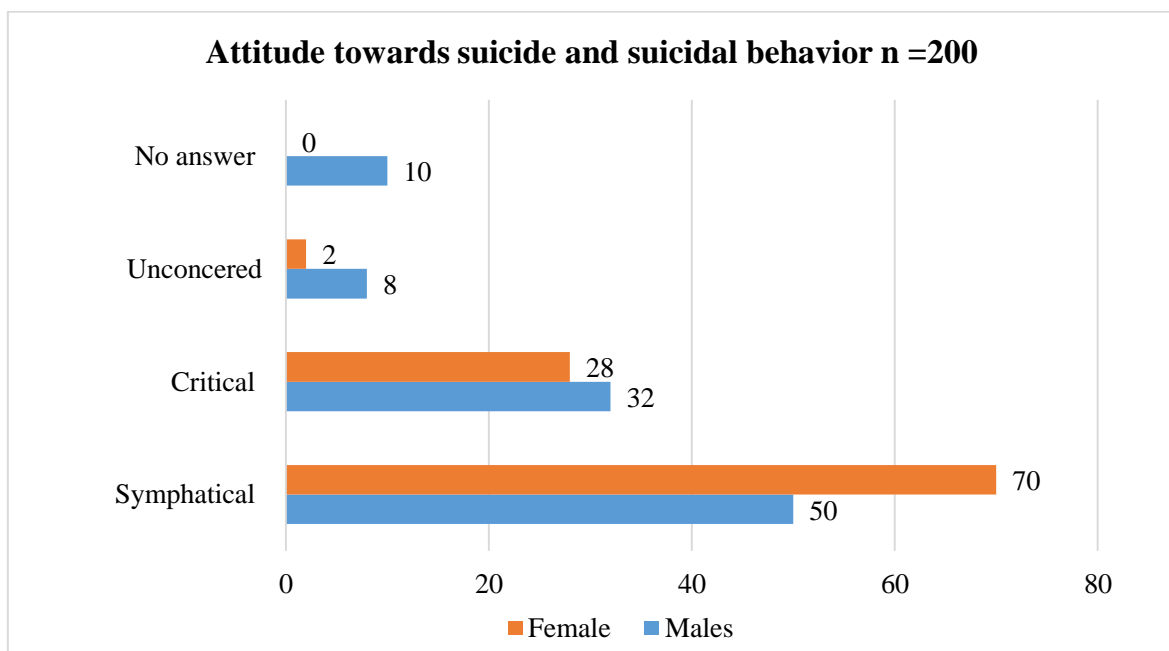
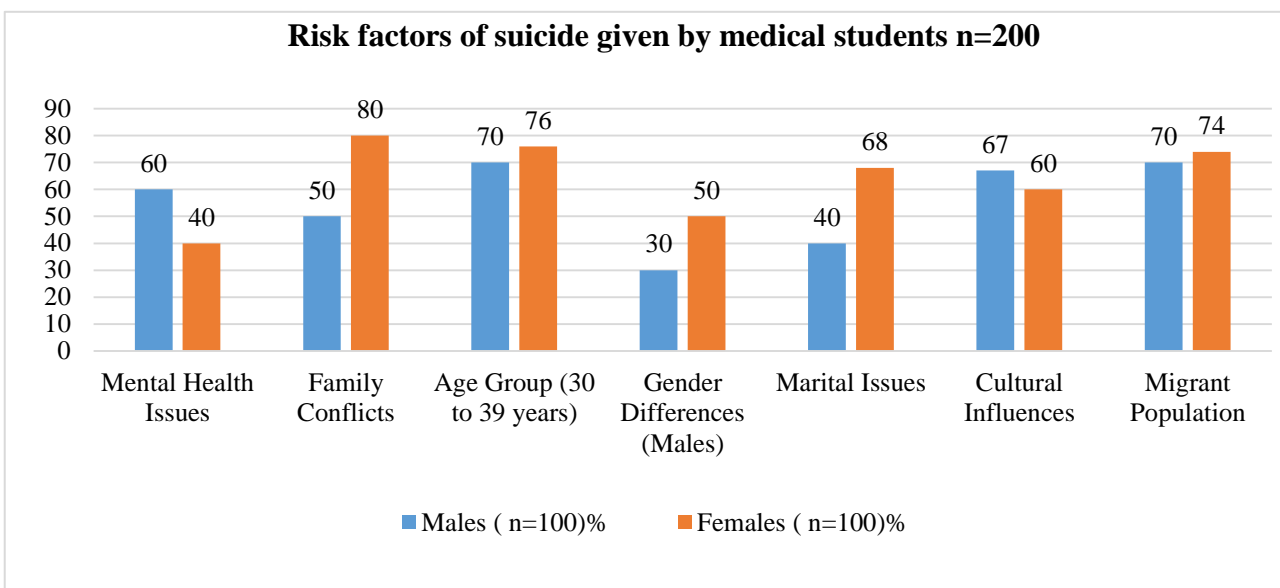
Questions	Males (n=100)	Females (n=100)	Total
Q1	85%	70%	75.5%
Q2	60%	50%	55%
Q3	70%	90%	80%
Q4	64%	60%	62%
Q5	30%	31%	30.5%
Q6	30%	21%	25.5%
Q7	60%	80%	70%
Q8	40%	41%	40.5%
Mean score (SD)	9.05	8.856	8.25

Table1:

- **Risk factors of suicide given by medical students**

Figure: 2 depicts a group of medical students' thoughts on probable risk factors for suicide. The data is gender-segregated, with 100 respondents for males and females, offering a thorough picture of their perceptions. Mental health difficulties appeared as a significant concern, with an overall recognition of 50%, while males were significantly more likely to recognize it as a danger (60%) than females (40%). Family conflicts were identified as a common element, with 75% of respondents confirming their influence. There were significant gender differences, with 80% of females seeing family conflicts as a risk, whereas only 50% of males did. The 30-39 age bracket was largely

seen as fragile, with 73% of respondents underlining it. Gender inequalities were obvious once again, with 76% of females concerned compared to 70% of males. Gender differences in males (40%) were noted as a separate category, with males showing stronger recognition (50%) than females (30%). Marital troubles and cultural influences were indicated as risk factors by 54% and 63.5% of respondents, respectively, demonstrating gender differences. Finally, 72.5% of respondents identified the migrant community as extremely vulnerable. These findings highlight the complex viewpoints of medical students on suicide risk factors, emphasizing the need to take gender and sociocultural variations into account in suicide prevention initiatives.



The chi-square table 2 provides a comprehensive overview of the relationships between various characteristics and demographics among both male and female populations. Notably, mental health issues exhibited a statistically significant difference between genders, with a higher prevalence among males (60%) as compared to females (40%), yielding a p-value of 0.005. Family conflict also demonstrated a significant gender difference, with 80% of females experiencing such conflicts compared to 50% of males (p-value = 0.000). Marital issues also showed a substantial gender

discrepancy, with 68% of females reporting problems compared to 40% of males (p-value = 0.000). Cultural influence and migrant population did not show statistically significant gender differences, with p-values of 0.304 and 0.529, respectively. Additionally, the age group of 30-39 years did not reveal a significant association with gender, with p-value 0.339. These findings highlight the importance of gender-specific considerations in mental health, family dynamics, and marital relationships, suggesting potential areas for targeted interventions and support.

Characteristics	Female	Male	p-value
Mental health issue			
Yes	40	60	0.005
No	60	40	
Family conflict			
Yes	80	50	0.000
No	20	50	
Age group 30-39 years			
Yes	76	70	0.339
No	24	30	
Marital issues			
Yes	68	40	0.000
No	32	60	
Cultural influence			
Yes	60	67	0.304
No	40	33	
Migrant population			
Yes	74	70	0.529
No	26	30	

DISCUSSION:

The Saudi Arabian study examining medical students' understanding of mental health and suicide-related issues provides a complete review of the subject. The findings show an increasing trend in suicide rates in the country, with participants having a lack of understanding about the true suicide rate. The incidence of depression is underlined, particularly among females, emphasizing the vulnerability of younger age groups, notably those aged 30 to 39. There are significant gender disparities in detecting suicide risks, with males being more alert. The study emphasizes the necessity of addressing mental health issues, family tensions, and cultural effects in the prevention of suicide, particularly among migrants. The statistical analysis demonstrates greater variability in female replies, indicating potential gender-related differences in perceptions or responses that should be investigated further. Overall, the study sheds light on the intricacies of suicide-related knowledge and views among Saudi medical students. The causes of depression in the Middle East and North Africa regions are unknown, and research findings are inconclusive.[7] Hormonal variations and cultural influences have been proposed as possible

explanations. Epidemiological studies in these areas have revealed depression rates ranging from 13 to 18%, with women suffering rates that are up to twice as high as men. The prevalence of depression in the Gulf and Arab regions varies greatly according to published studies. For example, a study of female adolescents in Egypt found a depression frequency of 15.3%, while it was 17% in Omani high school students and 33.4% in Saudi Arabia.[8-10] In Saudi Arabia, medical students may encounter stigmatizing views regarding mental illness and may lack understanding of mental health concerns.[11] More focus should be placed on mental health awareness among medical students in order to improve their academic happiness and overall well-being[12]. Another study conducted at King Saud bin Abdulaziz University for Health Sciences discovered that current medical psychiatric training enhanced medical students' ideas and attitudes toward patients with mental diseases.[13] Female medical students in Saudi Arabia may face greater stress and mental health problems than their male counterparts.[14] Medical students in Saudi Arabia may experience obstacles to seeking mental health services, such as privacy concerns and a lack of service availability[15]. The

general public's knowledge of depression differs in Saudi Arabia. In a cross-sectional study, general awareness (72.9%) and symptoms (85.4%) were highlighted, with 65.6% of participants reporting good awareness overall. But there was a noticeable difference in the understanding of treatments (15.7%) and risk factors (12.3%)[16].Furthermore, Poor awareness was found in 73.6% of the sample, and stigma prevents people from seeking mental health care [17]These results highlight the necessity of focused educational initiatives to improve knowledge about depression, its risk factors, and the treatments that are accessible in the Saudi Arabian setting[17].

Our study suggests following recommendation that needed to enhance mental health awareness among medical students in Riyadh Provinces (Dawadmi&Shaqra)

- **Introduce thorough mental health education:**

Establish a formalized, required curriculum for mental health education in general education and medical programs. Comprehensive modules on diagnosing depressive symptoms, preventing suicide, and destigmatizing mental health conditions should be included. By including mental health education in the academic curriculum, medical students and the general public will be better prepared to recognize, comprehend, and manage mental health issues.

- **Provide Mental Health Screening and Support Services:**

Include routine mental health screenings in medical student evaluations and primary care settings, especially for depression. Expand the reach of these screenings to include the general public by using easily accessible healthcare facilities and public health campaigns. Establish mental health support services in parallel, emphasizing early intervention and offering resources and counseling to individuals in need. Encouraging an environment that provides prompt assistance and normalizes mental health checks can have a substantial positive impact on people's general well-being.

- **Create Gender-Inclusive and Supportive Environments:**

Encourage gender inclusivity in learning environments by putting in place rules that protect female students' safety and equality. To empower and mentor female students, create environments that are welcoming to women, address the particular difficulties that they experience, and set up mentorship programs. Incorporate additional services for mental health that are specifically designed to meet the needs of female students. Encouraging an atmosphere that values mental health and diversity can help Saudi Arabian female students succeed and be happy in their studies overall.

Strength and Limitations:

A study drawback pertains to the lack of clarity surrounding the specificity of the data to this specific cohort and the doubt surrounding the representativeness of the findings for all medical students in Saudi Arabia. Furthermore, a thorough analysis of attitudes toward suicide and cross-national comparisons depends heavily on the use of validated instruments such as the Suicide Outcome Questionnaire (SOQ). The authors are expanding the poll to include social workers, nurses, and practicing doctors in order to address this. It is imperative that medical students and staff recognize and address potential suicides, underscoring the significance of having a comprehensive understanding of suicide dynamics.

CONCLUSION:

In conclusion, this work has significant practical consequences. First, attention must be paid to the mental health of medical students, particularly females, as well as their domicile, bad family ties, and lower cognitive level of depressive knowledge. Second, medical students lacked awareness of depression and coping strategies, and initiatives to educate students about the risk of poor mental health could enhance diagnosis and treatment.

AUTHOR'S CONTRIBUTION:

All authors were involved in the conception, design, development and implementation stages. Data collection was mostly done by Abdullah Hamoud M Alotaibi and Abdulaziz Mohammed B Alotaibi Data Analysis, Interpretation and drafting of the article was mainly done by Mishari Muteb A Alotaibi & Muath Thar contributed in the revising of the article, and approved the final manuscript.

COMPLIANCE WITH ETHICAL STANDARD:

Conflict of Interest: The authors declare that they have no conflict of interest

Informed Consent: Informed consent was obtained from all individual participants included in the study.

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STATEMENT OF ETHICS:

This study protocol was reviewed and approved by Chairman of the local committee of Research Ethics in Shaqra University (College of Medicine)

CONSENT TO PARTICIPATE STATEMENT:

This study has been granted an exemption from requiring written informed consent by of Research Ethics in Shaqra University as it is a questionnaires-based study.

CONFLICTS OF INTEREST STATEMENT:

The authors have no conflict of interest

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DATA AVAILABILITY STATEMENT:

All data generated or analyzed during this study are included in this article. Further enquires can be directed to the corresponding authors.

Appendix I

Questions	Correct answer
In Saudia Arabia, the number of suicides is (1: increasing, 2: shows a plateau, 3: decreasing) compared to that 10 years ago.	In Saudi Arabia, the number of suicides has been increasing, showing a plateau compared to 10 years ago. As of 2016, the Kingdom of Saudi Arabia had a suicide rate of 3.4 per 100,000 people, ranked 163rd in the world[18] 2. Plateau
What is the current suicide rate in Saudi Arabia? (1) 40 per 100,000 people (2) 10 per 100,000 people (3) 5.43 per 100,000 people (4) 3.50 per 100,000 people (5) 1.0 per 100,000 people	The current suicide rate in Saudi Arabia is not explicitly mentioned in the available sources. However, according to the latest WHO data published in 2020, the number of suicide deaths in Saudi Arabia reached 2,046, with an age-adjusted death rate of 5.43 per 100,000 people, ranking Saudi Arabia #133 in the world(https://www.worldlifeexpectancy.com/saudi-arabia-suicide) (3) 5.43 per 100,000 people
Based on recent literature, is the prevalence of depression suggested to be more common in males or females? (1) males (2) females (3) Both	In a systematic review and a study conducted in Saudi Arabia, the prevalence of depression was found to be higher in females[7] (2) Females
What was the suicide rate in the Kingdom of Saudi Arabia as of 2016, and how was it ranked globally?? (1) 150 (2) 163 (3) 200	In Saudi Arabia, the number of suicides has been increasing, showing a plateau compared to 10 years ago. As of 2016, the Kingdom of Saudi Arabia

	had a suicide rate of 3.4 per 100,000 people, ranked 163rd in the world [7]
With respect to age, suicides are most frequent in persons: (1) aged 20–29 years (2) aged 30–39 years (3) aged 40–49 years (4) aged 50–59 years (5) aged 60 years or older	In Saudi Arabia, the age distribution of suicides shows that the most frequent suicides occur among individuals aged 30 to 39 years, with a rate of 44.3%, followed by the age group from 20 to 29 years, with a rate of 32.6% These findings indicate that the highest number of suicides in Saudi Arabia occurs among younger age groups. Answer: (1) aged 20–29 years
6. With respect to gender, suicide victims are more frequent in: (1) males (2) females, or (3) the number of suicides is similar between males and females.	Answer: males
7. the most common causes of suicides are: (1) health problems (2) financial problems (3) domestic problems (4) human relationships at the workplace (5) problems involving intimate relationships	Correct answer: health problems
8. The relationship between suicides and psychiatric diseases are: (1) present (2) absent (3) difficult to evaluate (4) unclear	Correct answer: present
What are risk factors for suicides?	In Saudi Arabia, suicide risk factors include family conflicts, psychiatric disorders, age (highest in 30-39 age group), gender differences (males more likely to die, females more likely to attempt), marital issues, cultural influences, and heightened risks for migrants.
10. What is required for the prevention of suicides?	Open ended
11. How do you feel about suicides or attempted suicides?	Open ended

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