

The Relationship between Perceived Social Support and Symptoms of Depression among Medical Students at An-Najah National University (A Cross-Sectional Study)

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Abstract: Background: Medical students face higher rates of stress and depression compared to peers in other academic fields, with major depressive disorder (MDD) being a prevalent concern. Globally, depression affects over 264 million people, and medical students are particularly vulnerable due to academic and emotional demands. Perceived social support—gained from family, friends, and others—is a critical buffer against stress and psychological distress. High levels of support are linked to improved mental health and resilience, while low support exacerbates depressive symptoms. **Methods:** A cross-sectional study design was used, involving 322 medical students at An-Najah National University by using a convenience sampling method. Depression symptoms were assessed using the PHQ-8, and perceived social support was measured using the MSPSS. Statistical analysis included Pearson correlation and regression modeling. **Results:** The average perceived social support score (MSPSS) was 2.43 (SD = 0.717), and the average depression score (PHQ-8) was 2.25 (SD = 1.082). A significant negative correlation was found between perceived social support and depression symptoms ($r = -0.279$, $p < 0.001$), indicating that students with higher social support experienced fewer depressive symptoms. Regression analysis showed that perceived social support significantly predicted depression levels ($B = -0.421$, $p < 0.001$), accounting for 7.8% of the variance ($R^2 = 0.078$). No significant differences in depression were found based on academic year, residency, age, or sex. **Conclusions:** There is a significant inverse relationship between perceived social support and depressive symptoms among medical students. While demographic factors showed no significant influence, the findings highlight the importance of strong support systems in reducing depression risk. Practical interventions—such as peer mentorship, mental health services, and resilience-building workshops—should be integrated into medical education to promote psychological well-being and equip future physicians with better coping mechanisms.

Keywords: Perceived Social Support, Depression, Medical Students, MSPSS, PHQ-8, An-Najah National University.

العلاقة بين الدعم الاجتماعي المُدرَك وأعراض الاكتئاب لدى طلبة الطب في جامعة النجاح الوطنية (دراسة مقطعية)

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الملخص: الخلفية: يعاني طلبة الطب من معدلات مرتفعة من التوتر والاكتئاب مقارنة بأقرانهم في التخصصات الأكاديمية الأخرى، ويُعد الاضطراب الاكتئابي الحاد (MDD) من أبرز المشكلات النفسية الشائعة لديهم. على الصعيد العالمي، يؤثر الاكتئاب على أكثر من 264 مليون شخص، ويُعد طلاب الطب فئة معرضة بشكل خاص بسبب الضغوط الأكاديمية والعاطفية. ويُعتبر الدعم الاجتماعي المُدرَك – سواء من العائلة أو الأصدقاء أو الآخرين – حاجزاً مهماً ضد التوتر والاضغوط النفسية. إذ يرتبط ارتفاع مستويات الدعم بتحسين الصحة النفسية والمرونة، بينما يؤدي انخفاضه إلى تفاقم أعراض الاكتئاب. **المنهجية:** تم استخدام تصميم دراسة مقطعية، شملت 322 طالباً في كلية الطب بجامعة النجاح الوطنية. تم تقييم أعراض الاكتئاب باستخدام مقياس PHQ-8، وقياس الدعم الاجتماعي المُدرَك باستخدام مقياس MSPSS. وشملت التحليلات الإحصائية معامل الارتباط بيرسون وتحليل الانحدار الخطي. **النتائج:** بلغ متوسط درجة الدعم الاجتماعي المُدرَك 2.43 (MSPSS) الانحراف المعياري = 0.717، ومتوسط درجة أعراض الاكتئاب 2.25 (PHQ-8) (الانحراف المعياري = 1.082). وأظهرت النتائج وجود علاقة عكسية ذات دلالة إحصائية بين الدعم الاجتماعي والاكتئاب ($r = -0.279$ ، $p < 0.001$)، مما يشير إلى أن الطلاب الذين يتمتعون بدعم اجتماعي أعلى يعانون من أعراض اكتئاب أقل. كما بيّن تحليل الانحدار أن الدعم الاجتماعي يُعد مؤشراً معنوياً لمستوى الاكتئاب ($B = -0.421$ ، $p < 0.001$)، موضحاً 7.8% من التباين في الأعراض ($R^2 = 0.078$). ولم تُسجل فروقات معنوية في أعراض الاكتئاب تبعاً للسنة الدراسية، أو مكان الإقامة، أو العمر أو الجنس. **الاستنتاجات:** توجد علاقة عكسية واضحة بين الدعم الاجتماعي المُدرَك وأعراض الاكتئاب لدى طلبة الطب. وعلى الرغم من عدم وجود تأثير يُذكر للعوامل الديموغرافية، إلا أن النتائج تؤكد أهمية تعزيز أنظمة الدعم الاجتماعي للحد من مخاطر الاكتئاب. وتوصي الدراسة بتطبيق تدخلات عملية مثل برامج دعم الزملاء، وخدمات الصحة النفسية، وورش تنمية المرونة النفسية ضمن المناهج الطبية لتعزيز الرفاه النفسي لدى الطلبة، وتجهيز الأطباء المستقبليين بالآليات أفضل للتكيف مع الضغوط.

الكلمات المفتاحية: الدعم الاجتماعي المُدرَك، الاكتئاب، طلبة الطب، MSPSS، PHQ-8، جامعة النجاح الوطنية.

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Introduction

Medical students are those who are enrolled in a university's medical school with the goal of becoming doctors, as a result, they reported higher levels of academic burnout and showed more signs of stress, anxiety, and depression than students in other majors (Y. Liu & Cao, 2022; Frajerman et al., 2019). Students can lower their stress and anxiety through the perceived social support (e.g. family and friends) (Kristiana et al., 2022).

Major depressive disorder (MDD) is one of the most important mental health issues, according to general consensus. Over the past 30 years, the number of incident cases worldwide has increased by about 50%, and more than 264 million people of all ages are today affected (Monroe & Harkness, 2022; Q. Liu et al., 2020).

Medical students exhibit a higher prevalence of depressive symptoms compared to their age-matched peers (Broks et al., 2022; Dyrbye et al., 2006).

Social support is considered one of the most important and effective resources that individuals need, (Richardson et al., 2022; Holt-Lunstad et al., 2010) and obviously, the level of it affects how individuals perceive various psychological problems and pressures, as well as coping with them, so higher social support is linked to better mental health, a higher quality of life, subjective cognitive function, and less weariness (Kever et al., 2021).

The stress-buffering model posits that social support acts as a protective factor, mitigating the negative effects of stress on mental health. In the context of medical education, students with higher perceived social support may be better equipped to handle academic pressures, leading to reduced symptoms of depression (Broks et al., 2022; Cohen, 2004)

In addition, in a study that was conducted in Malaysia under the title the impact of perceived

social support on creativity among students, in which 135 students participated, was concluded that perceived social support leads to increased creativity (Tan et al., 2022; Mushtaq et al., 2022).

Moreover, another study was conducted in China, in which 2057 students participated, aimed to evaluate the relationship between symptoms of depression/anxiety and social support, it was found that symptoms of depression and anxiety had very significant correlations with social support (Shao et al., 2020).

While previous research has examined the general mental health challenges faced by medical students, few studies have specifically explored the relationship between perceived social support and depression in this population. Understanding this relationship is crucial for developing targeted interventions aimed at enhancing students' psychological well-being.

Given the high prevalence of depressive symptoms among medical students and the protective role of social support, this study aims to answer the following research question: What is the relationship between perceived social support and symptoms of depression among medical students at An-Najah National University?

Study Problem

The idea of social support focuses on the internal needs of individuals, which gives great importance in facing the challenges and psychological pressures in today's societies. About half of medical students exhibit psychological exhaustion, disconnection, and powerlessness due to the pressures they face from studying, clinical rotation and exams (Haykal et al., 2022; Monrad et al., 2021), which motivated this study to assess perceived social support among medical students at An-Najah National University. Moreover, the

rationale for focusing on medical students at An-Najah National University is because they face immense stress due to political instability and security threats in Palestine, including movement restrictions, exposure to violence, emotional trauma, disruptions in education, and uncertainty about their future careers.

Objectives

To assess

1. Perceived social support levels among medical students at An-Najah National University.
2. Depression symptoms level among Medical Students at An-Najah National University.
3. The predictive relationship between perceived social support and symptoms of depression among Medical Student at An-Najah National University in the light of some demographic variable (Age, gender, residency, Academic year).

Methodology

Study design and Setting

A cross-sectional design was conducted to assess **the relationship between perceived social support and symptoms of depression among medical students at An-Najah National University**, using **PHQ-8** (Personal Health Questionnaire Depression Scale) - a self-report tool measuring depressive symptoms over the past two weeks, with eight items rated on a 0-3 scale. Higher scores indicate more severe depression, and **MSPSS** (Multidimensional Scale of Perceived Social Support) – a 12-item scale assessing perceived social support from family, friends, and significant others, rated on a 1-7 scale, with higher scores reflecting stronger support. Data were collected through an online questionnaire distributed to medical students, which took 2-3 weeks for them to complete the questionnaire. Students' participation was voluntary, contributing to research aimed at improving

student well-being, which encouraged them to take part.

Population and Sample size

The study population was medical students at An- Najah National University in the clinical phase. The sample size was calculated using the Raosoft sample size calculator. A convenience sampling method was used, targeting medical students in the clinical phase at An-Najah National University. Setting the margin error at 5%, the confidence interval at 95%, and response distribution at 50%, the sample size was calculated at a 95% confidence interval. The final sample size needed for this study was 282 students. In this study the sample was 322 students, which is more than the calculated sample, with response rate of 114.2%.

Inclusion criteria

The participants were all medical students at An- Najah National University in the clinical phase.

Exclusion criteria

Basic Phase of human medicine students; the basic phase of human medicine is studied in a manner similar to other specializations, but the clinical phase is completely different, and limited the study to it because of the pressures it contains, such as long working hours, OSCE exams, and final exams (NBME), which cause great stress among students.

Variables definitions

Demographic variables: (Age, Gender, Residency and Academic year)

1. **Perceived social support** refers to an individual's subjective evaluation of the availability and adequacy of emotional and instrumental support from their social network, a widely cited definition comes from Zimet et al. (1988), who define it as: *"The perception that one is cared for, has assistance available from other people, and is part of a supportive social network."*

2. **Depression** (major depressive disorder) is a common and serious medical illness that negatively affects how you feel, the way you think and how you act. Fortunately, it is also treatable. Depression causes feelings of sadness and/or a loss of interest in activities once enjoyed. It can lead to a variety of emotional and physical problems and can decrease a person's ability to function at work and at home" American Psychiatric Association, (2017).

Study tool

Data was collected from this study population using a questionnaire, which is shown in the appendix 1.2, as the study tool. This questionnaire is composed from three parts:

- **Part 1:** Demographic data including sex, age, residency, academic year (4 Questions).
- **Part 2:** MSPSS scale (12 Questions).
- **Part 3:** PHQ-8 scale (8 Questions).

The scales used in this questionnaire (PHQ-8 and MSPSS) has been valid and reliable (Pavlov et al., 2022; Gómez-Gómez et al., 2023; Mercan & Tari Selcuk, 2021; Zimet et al., 1988; Song et al., 2023; Nakigudde et al., 2009; Wu et al., 2022).

After conducted a pilot study in which twenty students participated, Cronbach's alpha for the MSPSS scale was 0.966, indicating excellent internal consistency, while Cronbach's alpha for the PHQ-8 scale was 0.878, reflecting strong reliability (Alkhadim, 2022). Construct validity for MSPSS and PHQ-8 was supported, as both scales effectively measured their respective constructs of social support and depression symptoms ($P < 0.0001$).

Ethical approval

Official Institutional Review Board (IRB) approval was acquired prior to data collection. After the nature of the study and its objectives are explained, the informed consent of the participants was obtained. At the conclusion of the study, the researcher and research supervisor removed all personal information,

keeping participant identities secret and confidential. Participants were aware of their freedom to leave the study at any moment.

Data Analysis

Data were collected by a research group by sending a link of the questionnaire to the medical students. For this purpose, the 3-part structured questionnaire was complied. All the collected data were analyzed statistically by SPSS program. Study used Chi-square tests were used to examine the association between categorical variables such as depression level (PHQ-8 categories) and demographic variables. Descriptive statistics (frequencies and percentages) were used for categorical variables. Means and standard deviations were used only for scale scores where applicable.

Results

Table (1): General Descriptive Information (n= 322).

Parameters		N	%
Gender	Male	127	39.4
	Female	195	60.6
Age	20	7	2.2
	21	57	17.7
	22	85	26.4
	23	130	40.4
	24	32	9.9
	25	9	2.8
	26	2	0.6
Residency	Jenin	44	13.7
	Hebron	8	2.5
	Jerusalem	19	5.9
	Arab 48	59	18.3
	Tubas	11	3.4
	Tulkarm	30	9.3
	Nablus	74	23.0
	Qalqilya	27	8.4
	Salfit	16	5.0
	Ramallah & Al-bireh	27	8.4
	Jericho	2	0.6
	Bethlehem	5	1.6
Academic Year	4 th year	90	28.0
	5 th year	95	29.5
	6 th year	137	42.5

Data were based on frequencies and percentages.

Table 1 shows general descriptive information comparing individuals who participated in the study (322) across various parameters. In terms of gender, a higher

percentage of females participated (60.6%) compared to males (39.4%). Regarding residency, the majority of the participants are from NABLUS (23%), and most of the rest are mainly from the northern residency (closer to An-Najah University). Talking about age, most of the participants were 23 years old (40.4%). Most participants were in their final (6th) academic year (42.5%) while 4th & 5th are similar.

Table (2): General Descriptive Information - scales, (n= 322).

Parameters		N	%
MSPSS	Low perceived support	43	13.4
	Medium perceived support	97	30.1
	High perceived support	182	56.5
PHQ-8	No depression	91	28.3
	Mild depression	115	35.7
	Moderate depression	73	22.7
	Moderately severe depression	31	9.6
	Severe depression	12	3.7

Data were based on frequencies and percentages.

Table 2 shows general descriptive information comparing the scores of the 2

Table (3): Associated factors among depression scale.

Parameters		No depression		Mild depression		Moderate depression		Moderately severe depression		Severe depression		P-Value
		N	%	N	%	N	%	N	%	N	%	
Gender	Male	36	28.3	47	37	29	22.8	11	8.7	4	3.1	0.632
	Female	55	28.2	68	34.9	44	22.6	20	10.3	8	4.1	
Age	20	4	57.1	2	28.6	0	0	0	0	1	14.3	0.3
	21	9	15.8	22	38.6	19	33.3	5	8.8	2	3.5	
	22	26	30.6	33	38.6	18	21.2	5	5.9	3	3.5	
	23	35	26.9	48	36.9	25	19.2	16	12.3	6	4.6	
	24	11	34.4	8	25	9	28.1	4	12.5	0	0	
	25	5	55.6	2	22.2	2	22.2	0	0	0	0	
Residency	26	1	50	0	0	0	0	1	50	0	0	0.761
	Jenin	9	20.5	21	47.4	9	20.5	2	4.5	3	6.8	
	Hebron	2	25	2	25	2	25	0	0	2	25	
	Jerusalem	6	31.6	6	31.6	7	36.8	0	0	0	0	
	Arab 48	20	33.9	20	33.9	9	15.3	8	13.6	2	3.4	
	Tubas	4	36.4	2	18.2	3	27.3	1	9.1	1	9.1	
	Tulkarm	8	26.7	10	33.3	9	30	2	6.7	1	3.3	
	Nablus	20	27	27	36.5	15	20.3	10	13.5	2	2.7	
	Qalqilya	8	29.6	6	22.2	7	25.9	5	18.5	1	3.7	

scales for the individuals who participated in our study (322). In terms of **MSPSS**, the majority of the participants reported High perceived social support (56.5%), then the Medium (30.1%), then the Low (13.4%). Talking about

PHQ-8, most of the participants reported just Mild depression (35.7%), while No depression (28.3%), Moderate depression (22.7%), Moderately severe depression (9.6%) and finally, Severe depression (3.7%).

Categorization of Depression Levels (PHQ-8) & Support Levels (MSPSS)

Depression levels (PHQ-8) were categorized based on standard score ranges:

- 0–4: No depression
- 5–9: Mild
- 10–14: Moderate
- 15–19: Moderately severe
- 20–24: Severe

Support levels (MSPSS) are typically categorized by score averages:

- 1.0–2.9: Low support
- 3.0–5.0: Moderate support
- 5.1–7.0: High support

Parameters		No depression		Mild depression		Moderate depression		Moderately severe depression		Severe depression		P-Value
		N	%	N	%	N	%	N	%	N	%	
	Salfit	7	43.8	7	43.8	1	6.3	1	6.3	0	0	
	Ramallah & Al-bireh	5	18.5	11	40.7	9	33.3	2	7.4	0	0	
	Jericho	1	50	0	0	1	50	0	0	0	0	
	Bethlehem	1	20	3	60	1	20	0	0	0	0	
Academic Year	4 th year	18	20	36	40	25	27.8	7	7.8	4	4.4	0.44
	5 th year	29	30.5	36	37.9	18	18.9	9	9.5	3	3.2	
	6 th year	44	32.1	43	31.4	30	21.9	15	10.9	5	3.6	
MSPSS	Low perceived social support	7	16.3	14	32.6	11	25.6	7	16.3	4	9.3	0.00
	Medium perceived social support	17	17.5	34	35.1	26	26.8	14	14.4	6	6.2	
	High perceived social support	67	36.8	67	36.8	36	19.8	10	5.5	2	1.1	

Table 3 shows the relationship between demographic factors (gender, age, residency and academic year) in addition to perceived social support level and depression levels (no depression, mild, moderate, moderately severe, and severe), along with statistical significance (P-Value). The results show no statistically

significant differences in depression levels based on gender (P=0.632), age (P=0.3), residency location (P=0.761), or academic year (P=0.44). However, perceived social support (MSPSS) demonstrates a significant relationship with depression levels (P=0.00), where lower levels of perceived social support are associated with higher levels of depression

Table (4): Associated factors among perceived social support.

Parameters		low perceived support		Moderate perceived support		high perceived support		P-Value
		N	%	N	%	N	%	
Gender	Male	20	15.7	42	33.1	65	51.2	0.282
	Female	23	11.8	23	28.2	117	60	
Age	20	0	0	4	57.1	3	42.9	0.531
	21	5	8.8	18	31.6	34	59.6	
	22	11	12.9	32	37.6	42	49.4	
	23	24	18.5	31	23.8	75	57.7	
	24	1	3.1	11	34.4	20	62.5	
	25	1	11.1	1	11.1	7	77.8	
	26	1	50	0	0	1	50	
Residency	Jenin	8	18.2	18	40.9	18	40.9	0.207
	Hebron	1	12.5	5	62.5	2	25	
	Jerusalem	1	5.3	4	21.1	14	73.7	
	Arab 48	8	13.6	10	16.9	41	69.5	
	Tubas	1	9.1	6	54.5	4	36.4	
	Tulkarm	6	20	7	23.3	17	56.7	
	Nablus	10	13.5	23	31.1	41	55.4	
	Qalqilya	2	7.4	8	29.6	17	63	
	Salfit	1	6.3	8	50	7	43.8	

	Ramallah & Al-bireh	3	11.1	7	25.9	17	63	
	Jericho	0	0	0	0	2	100	
	Bethlehem	2	40	1	20	2	40	
Academic Year	4 th year	12	13.3	34	37.8	44	48.9	0.311
	5 th year	9	9.5	28	29.5	58	61.1	
	6 th year	22	16.1	35	25.5	80	58.4	
PHQ-8	No depression	7	7.7	17	18.7	67	73.6	0.00
	Mild depression	14	12.2	34	29.6	67	58.3	
	Moderate depression	11	15.1	26	35.6	36	49.3	
	Moderately severe depression	7	22.6	14	45.2	10	32.3	
	Severe depression	4	33.3	6	50	2	16.7	

Table 4 shows the relationship between demographic factors (gender, age, residency and academic year) in addition to PHQ-8 depression levels and perceived social support (low, medium, and high), alongside statistical significance (P-Value). The findings indicate no statistically significant association between perceived social support and gender ($P=0.262$), age ($P=0.541$), residency location ($P=0.207$), or academic year ($P=0.321$). However, there is a significant association between depression levels (PHQ-8) and perceived social support ($P=0.00$), with higher levels of depression linked to lower levels of perceived social support.

Table (5): Correlation between Perceived Social Support (MSPSS) and Depression Symptoms (PHQ-8) ($n = 322$).

Independent Variable	PHQ-8 (Depression Score)
MSPSS	$r = -0.279, p < 0.001$

Data were analyzed using Pearson correlation.

Table (6): Linear Regression Analysis Predicting Depression Symptoms (PHQ-8) from Perceived Social Support (MSPSS) ($n = 322$).

Predictor	B	Std. Error	Beta	t	p-value
MSPSS (Total Score)	-0.421	0.081	-0.279	-5.200	<0.001

$R^2 = 0.078$, $F(1, 320) = 27.037$, $p < 0.001$, Standard Error of Estimate = 1.041

Dependent Variable: PHQ-8 Depression Score

Table 5 shows the correlation analysis between MSPSS (perceived social support) and PHQ-8 (depression symptoms) reveals a weak negative correlation coefficient of -0.279. This indicates that higher levels of perceived social support are associated with lower levels of

depression symptoms in the sample. The statistical significance ($P\text{-value} = 0.000$) confirms that this relationship is unlikely to have occurred by chance, making it a meaningful finding.

Table 6 shows the regression analysis indicated that perceived social support significantly predicted depression symptoms ($B = -0.421$, $p < 0.001$), but the R^2 value was only 0.078. This suggests that perceived social support explains just 7.8% of the variance in depression symptoms, indicating that other factors contribute more substantially to depression in this population.

In summary, the results suggest a statistically significant, weak negative relationship between social support and depression symptoms. As perceived social support increases, depression symptoms tend to decrease slightly, supporting the hypothesis that social support may play a protective role against depression.

Discussion

This study examined the relationship between perceived social support (measured by MSPSS) and symptoms of depression (measured by PHQ-8) among medical students at An-Najah National University. The findings revealed a significant negative correlation between perceived social support and depression symptoms ($r = -0.279$, $p < 0.001$), indicating that higher levels of social support are associated with lower depression symptoms. This aligns with previous studies, such as one conducted in China, which also

found significant associations between social support and lower symptoms of depression and anxiety among students.(Shao et al., 2020)

Regarding demographic variables, no significant differences in depression symptoms were observed based on gender ($P = 0.632$), age ($P = 0.3$), residency location ($P = 0.761$), or academic year ($P = 0.44$). However, gender differences showed some variation, with females reporting slightly higher PHQ-8 scores compared to males, though further analysis is needed to determine the significance of this relationship. These findings are consistent with prior research that suggests females are more likely to experience depression symptoms compared to males in similar academic contexts (Broks et al., 2022; Dyrbye et al., 2006).

The regression analysis demonstrated that perceived social support significantly predicted depression symptoms ($B = -0.421$, $p < 0.001$), suggests that for each one-unit increase in MSPSS (social support), the PHQ-8 score (depression symptoms) decreases by 0.421 points, with perceived social support accounting for 7.8% of the variance in depression symptoms ($R^2 = 0.078$). This is a relatively small percentage, indicating that MSPSS is only a modest predictor of depression symptoms, and there may be other variables influencing depression that are not included in this model. This result supports the stress-buffering model, which posits that individuals with higher social support are better equipped to cope with stressful events, thus experiencing fewer negative psychological outcomes (Broks et al., 2022; Cohen, 2004).

Comparative analysis of other variables, such as academic year and city, did not show significant differences in depression symptoms, suggesting that these factors may not play a major role in the mental health outcomes of this particular population. This is

consistent with studies that emphasize the centrality of social support in mitigating mental health challenges rather than external demographic factors (Richardson et al., 2022).

The findings of this study underscore the importance of fostering robust social support networks among medical students. Social support not only plays a crucial role in alleviating depression symptoms but is also linked to improved overall mental health, higher quality of life, and better coping mechanisms, as highlighted in prior literature (Kever et al., 2021).

Interestingly, while this study aligns with other international research, such as the study conducted in Malaysia that found perceived social support significantly enhances creativity (Tan et al., 2022), it also highlights cultural and contextual differences in how medical students perceive and utilize social support resources. These differences warrant further exploration to better understand how cultural factors influence social support and mental health outcomes. Two examples for that; **1. Mental Health Stigma:** Some cultures view mental health issues as stigmatized, making students less likely to seek help, while in others, it's more accepted to seek support and **2. Gender Roles:** Gender expectations can influence how students seek support, with some cultures encouraging women to seek support from women and men from male peers or family.

The relatively small R^2 value (0.078) suggests that while perceived social support is a significant predictor of depression symptoms, other factors may also contribute to the psychological well-being of medical students. Future research should explore additional variables, such as academic workload, financial stress, and coping strategies, to gain a more comprehensive understanding of the mental health challenges faced by medical students.

Medical schools should implement structured peer mentorship programs, increase access to psychological counseling services, and create student-led support groups to strengthen social support networks. Additionally, integrating mental health education into the curriculum could empower students to recognize depression symptoms early and seek appropriate support.

Conclusion

In conclusion, this study highlights the critical role of perceived social support in reducing depression symptoms among medical students. Universities and policymakers should implement structured initiatives to enhance social support systems for medical students. Further research is needed to explore the long-term impact of social support on mental health outcomes and to identify other factors contributing to the psychological resilience of medical students, with exploring different mediating factors like: Optimism, self-esteem, sense of belonging and coping strategies.

Recommendations

This study indicates that there seems to be a clear requirement of strengthening support systems for medical students in order to cope with the emotional burdens they happen to carry, to begin with, the universities themselves must take proactive steps towards establishing positive interpersonal relationships between the students. Interventions such as mentor programs, peer helper networks, and community-building courses can help create a sense of belongingness and emotional unburdening during tense periods.

Even more important is awareness-raising in the field of mental health, not only make available facts concerning common mental illness like depression but also try and remove the stigma that would instill fear to approach a facility for help amongst students, public campaigns, and mental health literacy

programs can contribute to early detection and promote cultures of care and openness.

Psychological services must also be made more accessible, counseling centers must offer one-on-one and group therapy tailored to the nature of stress that medical students undergo, making these services part of the academic environment would make them less intimidating and more accessible.

In addition, integrating stress-reduction techniques into the academic curriculum itself—time management, mindfulness, and coping skills workshops—can prepare students with the tools to handle pressure better.

Families also have a significant role to play. By engaging them in the occasional university event or counseling them on how to support their children through difficult academic times, institutions can help to build a student's support network outside of school.

To continue to learn more about what affects students' mental health, future research must explore other variables beyond social support, including financial problems, course load at school, and sleep quality. Long-term studies may be especially helpful in discovering how those factors shift over time.

In addition, inter-institutional cooperation would enhance the establishment of mutual best practices. Inter-regional and national collaborations could result in identical mental health programs that serve students across multiple campuses.

Lastly, with advancements in digital technology, exploring AI-based and internet-based interventions for mental health may offer scalable, tailored treatment to students—especially those who may not feel at ease reaching out for face-to-face care. Such innovation may be at the heart of early intervention, stress management, and building psychological resilience.

Limitations

It should be acknowledged that this study, while offering valuable insights, has its limitations. One such limitation is in the use of a self-report data approach which may be compromised by participants' misperceptions or biases related to their mental health and overall social support. The current study nor did not address other possible stressors contributing to depression such as school pressures, financial difficulties or even previous mental illness, which may have offered more breadth of understanding the topic. The timing of data collection may have also influenced results, particularly if conducted during period of high-stress study times, e.g., exams. As the study only collected data in a single point of time, it was not able to capture change over time or even causal relationships. Conceptualization, cultural differences can also influence the way students view social support as well as have an impact on reporting, so it is inadvisable to generalize results to other groups of students in other regions or countries, and caution should be taken to generalize specifically methodological issues to culturally-relevant contexts as well. Additionally, while the PHQ-8 is useful in highlighting symptoms of depression, it does not confirm clinical depression. Sampling also can affect generalizability, particularly if students falling into one or two groups are more likely to respond, while students in other groups don't respond. Finally, data was only collected from students at An-Najah National University, and while, findings may only reflect levels of depression as experienced by National University students - no other students are easily generalized against.

Disclosure Statement

- **Ethical approval and consent to participate:** Ethical approval for this study was obtained from the Institutional Review

Board (IRB) of An-Najah National University prior to data collection. Informed consent was obtained from all participants after the study's objectives and procedures were explained. Participation was voluntary, and anonymity and confidentiality were ensured throughout the research process.

- **Availability of data and materials:** The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.
- **Author contribution:** All authors contributed significantly to the conception, design, data collection, statistical analysis, interpretation of results, and writing of the manuscript. All authors reviewed and approved the final version of the manuscript.
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