

Mental Health Risks in Medical Students: A Cognitive–Behavioral Model of Distress

Ammar Al Maharmah^{*1}, Numan Al-Natsheh²
^{1,2}Al-Ahliyya Amman University

Abstract

Objectives: This study examines mental health risks among medical students through a cognitive–behavioral lens, focusing on the interplay between anxiety, depression, perfectionism (normal and neurotic), and occupational stress coping strategies. Given the demanding nature of medical education and the dual function of perfectionism—adaptive versus maladaptive—the research explores how these psychological constructs contribute to emotional distress.

Methodology: A descriptive, correlational design was adopted. The primary sample included 300 medical students from multiple Jordanian universities, preceded by a pilot sample of 123 participants to validate the psychometric properties of the instruments. Tools used included the Hamilton Anxiety Rating Scale (HARS), Beck Depression Inventory-II (BDI-II), Frost Multidimensional Perfectionism Scale (FMPS), and a researcher-developed Occupational Stress Coping Strategies Scale. All instruments demonstrated high internal consistency (Cronbach's $\alpha > .90$).

Findings: : Significant positive correlations were observed between neurotic perfectionism, anxiety, depression, and negative coping strategies. In contrast, normal perfectionism was positively associated with positive coping strategies and negatively correlated with psychological distress. Female students reported significantly higher anxiety levels than males. Regression analyses indicated that both anxiety and depression significantly predicted neurotic perfectionism and maladaptive coping strategies, with depression emerging as the stronger predictor across genders.

Implications: These findings highlight the importance of addressing maladaptive perfectionism and ineffective coping strategies in interventions targeting medical students' mental health. The results offer actionable insights for designing cognitive–behavioral programs that foster adaptive self-appraisal and stress resilience. The study also introduces a culturally validated coping strategies scale suitable for use in Arab medical education contexts.

Conclusions: Neurotic perfectionism and negative coping strategies substantially increase vulnerability to anxiety and depression in medical students. Addressing these cognitive-emotional patterns through structured interventions could enhance students' psychological flexibility and resilience throughout their medical training.

Key words

Mental Health, Risk Factors, Medical Students, Cognitive–Behavioral Model, Psychological Distress.

Introduction

Medical education is widely recognized as one of the most cognitively and emotionally demanding academic paths. Medical students are frequently exposed to sustained academic pressures, clinical challenges, high personal expectations, and performance-based evaluations. These stressors often contribute to elevated levels of psychological distress, particularly anxiety and depression (Liselotte et al., 2006; Rotenstein, Ramos, & Torre, 2016). Evidence from both international and Arab contexts confirms this vulnerability; for example (Mebratu, Worku, and Molla, 2019) reported high rates of anxiety and depression among Ethiopian medical students, while (Al-Shishtawi et al., 2018) found similar trends among Jordanian students.

The cognitive-behavioral model of emotional disorders offers a useful theoretical lens to interpret these psychological risks. This model posits that mental distress is shaped by the interaction between cognitive schemas (such as perfectionistic beliefs), emotional responses, and behavioral coping mechanisms (Beck, 1976; Lazarus & Folkman, 1984). Within this framework, maladaptive personality traits like neurotic perfectionism—characterized by rigid self-standards, fear of failure, and self-criticism—serve as cognitive vulnerabilities that heighten psychological reactivity to academic stressors (Frost et al., 1990; Hewitt, Flett, Mikail, Kealy, & Zhang, 2018). In contrast, normal perfectionism, which involves high achievement motivation without excessive anxiety, may function as a protective factor.

Additionally, the coping strategies adopted by students play a mediating role in either buffering or intensifying distress. Positive coping (e.g., planning, seeking support) is associated with resilience and psychological well-being, whereas negative coping (e.g., avoidance, denial, self-blame) is linked to higher levels of anxiety and depression (Dunkley et al., 2000;

Azad, 2015). According to the transactional stress theory (Lazarus & Folkman, 1984), students' appraisals of stress and their subsequent coping responses are central to their mental health outcomes.

Given this framework, understanding the interaction between perfectionism, coping strategies, and emotional outcomes is critical. While prior studies have examined these variables in isolation, few have integrated them into a unified cognitive-behavioral model tailored to medical students in the Arab world. This study, therefore, aims to investigate the cognitive and behavioral predictors of distress—namely anxiety and depression—among Jordanian medical students, by examining the roles of perfectionism (normal and neurotic) and occupational stress coping strategies.

This investigation contributes to the limited literature on culturally contextualized mental health risk models in Middle Eastern medical education. Furthermore, it introduces and validates a newly developed scale for measuring coping strategies with occupational stress, adding methodological value to both research and clinical application.

Literature Review

Numerous systematic reviews and empirical studies consistently document a significant prevalence of psychological distress among individuals enrolled in medical education programs. Liselotte et al. (2006) conducted a comprehensive review of literature spanning from 1980 to 2005, revealing markedly elevated rates of depression, anxiety, and burnout among medical students in the United States and Canada when juxtaposed with the general populace, with exacerbated distress levels frequently observed among female students. In a similar vein, Rotenstein, Ramos, and Torre (2016) executed an extensive systematic review encompassing 167 cross-sectional and 16 longitudinal studies across 43 nations, estimating an alarming av-

erage prevalence of depression at 30.6% among medical students on a global scale. This review also illuminated an 18.4% escalation in depression prevalence between the years 2005 and 2015, with the Middle East registering a notably high rate of 31.8%. Yusoff (2019) further indicated that anxiety (41%-56.7%) and depression (12%-30%) are prevalent, in addition to general psychological stress (11.8%-19.9%). The persistent nature of this psychological stress may result in deleterious outcomes, encompassing disturbances in sleep, diminished academic performance, compromised concentration, and impaired clinical efficacy (Ahmed et al., 2009). These findings accentuate the pressing necessity for medical educational institutions to incorporate training in self-care and stress management (Ahmed et al., 2009).

Research consistently establishes a correlation between neurotic (maladaptive) perfectionism and a variety of psychological disorders. Empirical investigations have demonstrated a positive association between neurotic perfectionism and depression (Al-Desouky et al., 2016; Atallah et al., 2017), as well as anxiety and depression among gifted adolescents (Al-Harouni et al., 2019), elevated levels of burnout (Shelby & Al-Qasabi, 2018), and eating disorders (Riad, Abdel-Baqi, & Amin, 2015; Al-Zubairi, 2017). This particular variant of perfectionism is regarded as a significant risk factor, heightening susceptibility to psychological distress owing to the pursuit of unattainable standards (Hewitt, Flett, & Mikail, 2019). Lisa and Sigrid (2019) specifically examined the nexus between perfectionism and depression in the medical student population, noting that neurotic perfectionism exerts a negative influence on academic performance. Their research conducted in Germany revealed that accepted applicants to medical schools demonstrated significantly lower scores of depression and higher levels of openness in comparison to their rejected counterparts.

Investigations into professional stress and coping methodologies, particularly within the demanding context of healthcare professions, have unveiled a spectrum of approaches. Bella et al. (2020) identified elevated anxiety levels (moderate: 42.8%, severe: 13.1%) among nursing students in Palestine during the COVID-19 pandemic. Their findings indicated that variables such as gender, inadequate personal protective equipment, and apprehension regarding infection were correlated with heightened anxiety, while robust resilience and a sense of humor were linked to reduced anxiety levels. Conversely, mental disengagement was associated with increased anxiety. Sílvia et al. (2021) explored the role of resilience in maladaptive coping within Portuguese emergency medical teams, discovering high levels of resilience and diminished perceived stress among their participants, with self-acceptance contributing to lower stress levels. Huiling, Ruiling, and Huan (2022) investigated the interplay between occupational commitment, work-related stress, and burnout among pediatric nursing professionals, illustrating that work stress had an indirect effect on burnout, with substantial social support alleviating this impact. Alireza et al. (2022) established that both positive and negative spiritual coping mechanisms were significant determinants affecting occupational stress among Iranian emergency department nurses and medical emergency service personnel.

While these studies highlight various coping mechanisms, Arab literature specifically focusing on the negative coping strategies adopted by medical students in response to professional stressors remains limited (Nasrawi, 2015). Nasrawi (2015) found that Algerian physicians under night shifts often employed ineffective or even negative coping strategies for professional stress. Current research suggests that while resilience is a positive coping mechanism, a comprehensive understanding of a wider range of positive

and negative coping strategies is needed to fully explain and address the rising prevalence of anxiety and depression among medical students. This gap in the literature underscores the importance of the current study, which aims to provide a more holistic understanding of the interplay between anxiety, depression, perfectionism, and diverse stress coping strategies in Jordanian medical students.

Terminology

Mental health: is defined by the World Health Organization (WHO) as “a state of well-being in which the individual realizes their abilities, can cope with normal stresses of life, can work productively, and is able to contribute to their community” (World Health Organization, 2022). In this study, mental health is primarily assessed through indicators of psychological distress: anxiety and depression.

Cognitive–Behavioral Model of Distress: This theoretical model posits that psychological distress results from the interaction between maladaptive cognitive schemas (e.g., perfectionistic beliefs) and ineffective behavioral responses to stress (Beck, 1976; Dobson & Dozois, 2019). It serves as the primary conceptual framework of the current study.

Anxiety: Anxiety disorders are characterized by excessive fear, anxiety, and related behavioral disturbances (American Psychiatric Association, 2022, p. 216).

Depression: Depression can be defined as the presence of at least one major depressive episode, occurring in the absence of a history of manic or hypomanic episodes. The essential feature of a major depressive episode is a period of at least two weeks during which there is either depressed mood or loss of interest or pleasure in almost all activities, most of the day, nearly every day, in addition to the appearance of at least

four other depressive symptoms during the same period (American Psychiatric Association, 2022, p. 177).

Perfectionism: Perfectionism is defined as the individual's continuous desire to achieve the highest levels of performance, driven by their need for others' approval and avoidance of their criticism due to obsessive-compulsive ideas within them. Perfectionism includes two parts, one adaptive and the other maladaptive (Al-Shimi, 2020).

Normal Perfectionism: Normal perfectionism is when the individual feels real happiness through undertaking difficult efforts and work, feels satisfied with their performance according to its quality and level, values themselves, is happy with their performance and skills, and admires their brilliance, and sets levels for themselves that are commensurate with their abilities and potential (Al-Saffar, 2022).

Neurotic Perfectionism: Neurotic perfectionism is when the individual sees that their work and efforts are not good despite the quality of their performance, and believes that they must always be better, accompanied by a feeling of dissatisfaction, and sets levels for themselves that they cannot reach with their abilities and potential, and they also have a constant fear of failure (Al-Saffar, 2022).

Occupational Stress: The Dictionary of Psychology and Psychoanalysis states that stress: “is a set of external and internal factors that pressure the individual to a degree that creates a feeling of tension or distortion in the integrity of their personality, and if its intensity increases, they lose their balance.” Stress is an abstract word that we infer through the individual's reactions under the influence of stress (Al-Hamlawi, 2019).

Stress Coping Strategies: Stress coping strategies are defined as strategies for dealing with stressful situ-

ations and events, or the methods that the individual uses to manage stress in order to achieve adaptation, or they are the emotional, behavioral, and cognitive efforts that the individual makes to manage the stresses they are exposed to and represent a burden on their capabilities and abilities (Azad, 2015).

Occupational Stress Coping Strategies: Occupational stress coping strategies are defined as a set of behavioral, cognitive, and emotional responses that workers use to deal with stressful situations and events in the workplace to achieve adaptation and psychological balance, or to mitigate their effects (Afra, 2021).

Study Problem

Medical education is intrinsically rigorous, frequently subjecting students to extended periods of academic, emotional, and clinical pressures, which render them particularly susceptible to psychological distress. Empirical studies indicate that the incidence of anxiety, stress, and depression among medical students varies between 21.6% and exceeds 50% in certain demographic groups (Yusoff, 2019), thereby suggesting a pervasive issue within the milieu of medical education. Such enduring psychological challenges not only impair students' academic performance and cognitive capabilities but may also jeopardize their future proficiency as practitioners (Ahmed, Banu, Al-Fageer, & Al-Suwaidi, 2009).

Within a cognitive-behavioral paradigm, these adverse outcomes are conceptualized as arising from the interplay of maladaptive cognitive frameworks and suboptimal behavioral reactions to stress. In particular, perfectionism is identified as a prominent personality characteristic that significantly impacts psychological susceptibility. While adaptive (normative) perfectionism may facilitate achievement and organizational skills, maladaptive (neurotic) perfectionism—characterized by heightened self-criticism and a

pronounced fear of failure—is consistently correlated with elevated levels of anxiety and depressive symptoms (Hewitt, Flett, & Mikail, 2019; Hamachek, 1978).

Coping mechanisms further influence the mental health outcomes of students by modulating their responses to stressors. Positive (active) coping strategies, such as strategic planning and problem-solving, have been associated with increased resilience, while negative (avoidant) strategies, including withdrawal or denial, may intensify emotional suffering. Notwithstanding the increasing acknowledgment of these dynamics, there exists a dearth of comprehensive models that explore how cognitive and behavioral elements collectively contribute to psychological distress within Arab medical student populations. Consequently, the current study seeks to fill this void by examining the interrelationship between perfectionism (both normal and neurotic), coping strategies for stress, and mental health outcomes (anxiety and depression) among medical students at Jordanian universities. The objective is to cultivate a theoretically informed understanding that can guide the development of culturally pertinent interventions and support initiatives.

Study Objectives

- a) Examine gender differences across the study variables: anxiety, depression, normal/neurotic perfectionism, and professional stress coping strategies.
- b) Investigate the relationships between all study variables across both genders.
- c) Determine the predictability of normal and neurotic perfectionism based on levels of anxiety and depression.
- d) Assess the predictability of professional stress coping strategies based on levels of anxiety and depression.

e) Evaluate the psychometric properties of the research instruments.

f) Develop a new scale for assessing professional stress coping strategies.

Study Questions

a) Are there significant gender differences in age, anxiety, depression, perfectionism (normal and neurotic), and coping strategies (positive and negative) among participants?

b) Are there significant correlational relationships among anxiety, depression, perfectionism (normal and neurotic), and coping strategies (positive and negative) in the study sample?

c) To what extent do anxiety and depression predict normal and neurotic perfectionism among participants?

Method

a. Design

The researcher used a descriptive, correlational, and comparative approach to investigate the relationship between anxiety, depression, perfectionism, and coping strategies, and to compare differences in demographic variables.

b. Study Population

Students of human medicine colleges in Jordanian universities (bachelor's, internship, residency).

c. Study Sample

The study sample consisted of 423 students, 123 for the psychometric properties verification sample, and 300 for the main sample.

d. Sampling Procedure

We used a systematic random sampling technique

to select (423) students who were included in the study. Table (1) presents the descriptive statistics for the psychometric properties verification sample and the main study sample

Table (1): Statistical Indicators for the Sample to Verify the Psychometric Properties of the Study Tools.

University Name	Psychometric Properties Verification Sample			Main Sample		
	Female	Male	Total (Male and Female)	Female	Male	Total (Male and Female)
Jordan University of Science and Technology	11	13	24	26	21	47
The Hashemite University	11	6	17	16	27	43
Yarmouk University	3	7	10	23	12	35
The University of Jordan	26	13	39	63	50	113
Mutah University	9	16	25	22	23	45
Balqa Applied University	4	4	8	10	7	17
Total	64	59	123	160	140	300
Mean Age	23.42	27.74	25.69	24.30	26.68	25.41
Standard Deviation of Age	2.84	6.84	5.50	3.83	4.33	4.23

Study Instruments

Hamilton Anxiety Rating Scale (HARS):

The Hamilton Anxiety Rating Scale (HARS), conceptualized by Max Hamilton in 1959, serves as a clinician-administered instrument aimed at quantifying anxiety levels among patients with a formal diagnosis. Comprising 14 distinct items, the scale evaluates both psychological and physiological manifestations of anxiety, with cumulative scores spanning from 0 to 56. Elevated scores are indicative of increased anxiety (Fatim, 1988, as referenced in Nator, 2020). The effective utilization of this scale is contingent upon the clinician's proficiency in patient interviewing

and their ability to accurately assess symptom severity based on the patients' subjective accounts. In the current investigation ($N = 123$), a confirmatory factor analysis evidenced factor loadings ranging from .664 to .867, elucidating 59.13% of the variance. The internal consistency, as determined by Cronbach's Alpha, was remarkably high at .944. Furthermore, split-half reliability coefficients (Spearman-Brown = .901, Guttman = .898) corroborated the scale's robust reliability and validity within the Jordanian context.

Beck Depression Inventory-II (BDI-II):

The Beck Depression Inventory-II (BDI-II) represents an amended iteration of the original Beck Depression Inventory, which has been adapted into Arabic by Ghareeb (2000). This self-administered 21-item questionnaire evaluates the severity of depressive symptoms, with each item assigned scores ranging from 0 to 3. Cumulative scores extend from 0 to 63, with a score of 10 typically serving as the threshold for diagnosing depression in the original version. Factor analysis conducted in this study substantiated the scale's substantial construct validity, with factor loadings varying from .554 to .791 on a singular factor. The overall Cronbach's Alpha for internal consistency was exceptionally high at .945 for the entire sample. Additionally, split-half reliability coefficients, which ranged from .902 to .906, further illustrated the scale's elevated consistency and stability.

Frost Multidimensional Perfectionism Scale (FMPS):

The Frost Multidimensional Perfectionism Scale (FMPS), formulated by Frost et al. (1990), is an extensively utilized assessment of perfectionism, encompassing 35 items across six dimensions. The scale has been translated into Arabic by Elsayed (2021). An exploratory factor analysis indicated that all item

loadings surpassed .4, thereby affirming its strong construct validity. The Cronbach's Alpha for the subscales ranged from .788 to .912, while the overall scale alpha was .912, signifying high internal consistency. Moreover, split-half reliability assessments yielded high coefficients, reinforcing the scale's validity for application among university students in the Jordanian context.

Coping strategies with occupational stress Scale (Al-Maharmeh, 2024):

This scale, formulated by the researcher, comprises 47 items categorized into six principal dimensions. Three dimensions assess positive coping strategies: "Confrontation and Challenge" (9 items), "Positive Reappraisal of the Problem" (9 items), and "Seeking Help from Others" (5 items). The remaining three dimensions evaluate negative coping strategies: "Escape and Avoidance" (12 items), "Self and Other Blame" (4 items), and "Rumination" (8 items). An exploratory factor analysis conducted on the final iteration of the scale demonstrated that all factor loadings exceeded .60. The total variance accounted for was 87.62%, indicating a strong construct validity. The overall Cronbach's Alpha for the scale was .926, with subscale coefficients ranging from .764 to .914, thereby demonstrating a high degree of reliability for both positive and negative coping dimensions.

Results

This section delineates the outcomes of statistical examinations pertinent to the primary inquiries of the study. The analyses investigate the disparities across genders concerning the study variables (anxiety, depression, perfectionism, and professional stress coping strategies), as well as the interrelationships among these variables and their predictive capabilities.

A. Gender Differences in Study Variables

An independent samples t-test was conducted to assess gender differences in the primary variables. The results are presented in Table (2).

Table (2): Gender Differences in Age, Anxiety, Depression, Perfectionism, and Coping Strategies: Results from Independent Samples t-tests

Variable	Male (n = 160)		Female (n = 160)		t	p	Significant?
	Mean (sd)	Mean (sd)	Mean (sd)	Mean (sd)			
Anxiety (HARS)	31.06 (13.9)	(13.9) 35.9	2.99	< .01			Yes
Depression (BDI-II)	20.8 (14.2)	(13.9) 23.3	1.53	0.126			No
Normal Perfectionism	68.2 (13.1)	(15.3) 67.8	0.24	0.813			No
Neurotic Perfectionism	53.7 (13.3)	(12.8) 53.2	0.35	0.729			No
Positive Coping Strategies	75.8 (16.2)	(18.8) 75.8	0.01	0.991			No
Negative Coping Strategies	74.5 (17.6)	(15.5) 75.2	0.39	0.963			No

Note: Values are presented as M (SD). HARS = Hamilton Anxiety Rating Scale; BDI-II = Beck Depression Inventory-II

The analysis showed a significant difference in anxiety levels, with females reporting higher levels than males. However, no significant gender differences were found in depression scores, normal or neurotic perfectionism, or in the use of positive and negative coping strategies.

B. Correlational Relationships Between Study Variables

Pearson correlation analyses were conducted to explore inter-variable relationships. A summary is presented in Table (3).

Table (3): Pearson Correlations Among Anxiety, Depression, Perfectionism, and Coping Strategies

Variable	1	2	3	4	5	6
1. Anxiety	—					
2. Depression	0.60**	—				
3. Normal Perfectionism	0.13	0.09	—			
4. Neurotic Perfectionism	0.45**	0.52**	0.37**	—		
5. Positive Coping Strategies	-0.09	-0.17*	0.28**	-0.22*	—	
6. Negative Coping Strategies	0.47**	0.54**	0.11	0.49**	-0.16*	—

*p < .05, **p < .01.

The result show that Anxiety and depression were positively correlated, and both showed strong positive associations with neurotic perfectionism and negative coping strategies. Additionally, depression was negatively correlated with positive coping strategies. Neurotic perfectionism was positively associated with normal perfectionism and negatively related to positive coping. Normal perfectionism was positively linked to positive coping but showed no significant relationship with anxiety or depression.

C. Predictive Power of Anxiety and Depression on Perfectionism

Multiple linear regression was employed to examine whether anxiety and depression significantly predict normal and neurotic perfectionism Table (4).

Table (4): Regression Models Predicting Normal and Neurotic Perfectionism from Anxiety and Depression.

Dependent Variable	Predictor	β	t	p	R^2
Normal Perfectionism	Anxiety	-0.105	-1.02	0.311	0.031
Neurotic Perfectionism	Anxiety	0.428	4.73	0.000**	0.183
	Depression	0.322	3.46	0.001**	

The results indicated that anxiety did not significantly predict normal perfectionism, suggesting no meaningful association between them. In contrast, the regression model for neurotic perfectionism was statistically significant. Both anxiety and depression were found to be significant predictors of neurotic perfectionism, with anxiety emerging as the stronger predictor ($R^2 = .183$).

Discussion

This investigation is anchored in the cognitive-behavioral framework of psychological distress, which underscores the notion that distorted cognitive frameworks—such as extreme perfectionism and dysfunctional coping mechanisms—constitute fundamental factors contributing to anxiety and depression. According to Beck's theoretical model (Beck, 1976), individuals who perceive stressors through inflexible, perfectionistic lenses exhibit heightened susceptibility to negative emotional states.

A plethora of international and Arab scholarly investigations have explored the incidence of anxiety and depression within the medical student demographic. For instance, Liselotte et al. (2006), Yusoff (2013), and Mebratu et al. (2019) documented that medical students display heightened levels of psychological distress, particularly during the phases of their clinical training. In the Arab scholarly context, Al-Shishtawi et al. (2020) reported that 44% of Jordanian medical students manifested symptoms of anxiety, while 34%

exhibited depressive symptoms, findings that corroborate the data presented in the current study.

Furthermore, Frost et al. (1990) and Hewitt & Flett (1991) established a significant correlation between neurotic perfectionism and enhanced psychological vulnerability. In a similar vein, research conducted by Dunkley et al. (2000) validated that maladaptive coping mechanisms serve as mediators in the relationship between perfectionism and depression. Nevertheless, within the Arabic academic literature, a limited number of studies have synthesized all four variables—perfectionism (both normal and neurotic), coping strategies (positive and negative), anxiety, and depression—into a cohesive model, particularly employing validated instruments specifically designed for the medical student cohort.

The findings revealed that female students reported markedly elevated levels of anxiety in comparison to their male counterparts, which is consistent with prior research indicating that female students are more susceptible to emotional distress throughout medical training (Liselotte et al., 2006). However, no statistically significant disparities were observed in relation to depression, perfectionism, or coping strategies, suggesting that these psychological constructs may function similarly across genders within this specific context.

Statistically significant correlations were identified between neurotic perfectionism and both anxiety and depression, signifying that students who maintain excessively critical self-standards are predisposed to experiencing emotional distress. Similarly, the employment of negative coping strategies, such as avoidance and emotional suppression, was positively correlated with increased levels of anxiety and depression. These findings align with the theoretical models posited by Dunkley et al. (2003) and Lazarus & Folkman (1984),

which highlight the detrimental impact of maladaptive cognitive-emotional processes.

Multiple regression analysis indicated that anxiety and depression serve as significant predictors of neurotic perfectionism and negative coping strategies. These findings imply that individuals with higher levels of anxiety and depression are more likely to exhibit neurotic perfectionism, while normal perfectionism appears unaffected by these emotional factors.

The newly established scale for assessing professional stress coping strategies exhibited robust psychometric properties, characterized by high internal consistency ($\alpha > .90$) and significant factor loadings, thereby affirming its reliability as a tool for future research concerning occupational stress within the medical student population.

Conclusion

This investigation emphasizes the cognitive-behavioral underpinnings of psychological distress experienced by medical students, presenting a theoretically informed model that synthesizes both normal and neurotic perfectionism, coping mechanisms, and emotional health outcomes. The results substantiate that neurotic perfectionism and maladaptive coping mechanisms function as significant cognitive-behavioral predictors of anxiety and depression within this demographic.

By employing a cognitive-behavioral framework, this study enhances the comprehension of how internal cognitive frameworks and external behavioral reactions interact to influence mental health risks in high-pressure academic contexts. Furthermore, the creation and validation of the Occupational Stress Coping Strategies Scale offer a culturally pertinent instrument that improves assessment accuracy within Arab clinical and academic environments. The

research underscores the critical need for the implementation of systematic psychological evaluations and targeted cognitive-behavioral interventions within medical faculties, with the objective of fostering psychological resilience and mitigating susceptibility to emotional distress throughout professional training.

References

- Abd al-Aziz, A. M., & al-Utayni, Kh. T. (2017). The prevalence and severity of physical symptoms, depression and anxiety among medical students at the Arabian Gulf University: A comparative study between second-year and sixth-year students. *The Arab Journal of Psychiatry*, 28(1), 69–75.
- Afra, Q. (2021). Strategies for coping with professional stress among workers in university libraries. [Master's thesis, University of Larbi Tebessi].
- Ahmed, A., Banu, A., Al-Fageer, M., & Al-Suwaidi, J. (2009). Anxiety and depression among medical students in the United Arab Emirates. *Eastern Mediterranean Health Journal*, 15(6), 1339–1345.
- Ahmed, I., Banu, H., Al-Fageer, R., & Al-Suwaidi, R. (2009). Cognitive emotions: Depression and anxiety in medical students and staff. *Journal of Critical Care*, 3(24), 1-7.
- Aisat, M. (2020). Strategies for coping with psychological stress and its relationship to psychological resilience – A field study on a sample of civil protection agents in Bouira. *The Jama'a Journal in Psychological Studies and Educational Sciences*, 1(5), 425–435.
- Al-Kanani, A. D. (2019). The degree of depression and its relationship to the tendency to perfectionism among gifted students in Jeddah City. *Journal of the College of Education, Assiut University*, 35(5), 1–53.
- Al-Maharmeh, A. (2024). Anxiety and depression and their relationship to “normal/neurotic” perfectionism and coping strategies with occupational stress among a sample of medical students in Jordanian Universities (Doctoral dissertation, Alexandria University).
- Al-Saqqar, K. B. F. (2022). Perfectionism (adaptive – maladaptive), psychological hardiness and neuroticism as predictors of satisfaction with life among female students at Prince Sattam bin Abdulaziz University. *Journal of the Islamic University of Educational and Psychological Studies*, 4(30), 448.
- Al-Umariyyin, R. N., & Al-Najadat, H. M. (2022). Perfectionism and its relationship to social anxiety among distinguished students in the southern region of Jordan. *Journal of Amman Arab University for Research*, 7(3), 410–434.
- American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed., text rev.). American Psychiatric Association.
- Andrews, D., Burns, R., & Dueling, K. (2014). Positive perfectionism: Seeking the healthy “Should”, or “Should we”? *Journal of Social Sciences*, 2(10), 27-34.
- Azad, S. (2015). The relationship between psychological hardiness and coping strategies during pregnancy. *Journal of Midwifery*, 3(3), 409-411.
- Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. International Universities Press.
- Bella, F., Al-Busaidi, A. S., Al-Farsi, Y. A., Al-Nabhani, A., Al-Mawali, A., & Al-Kindi, S. G. (2020). Anxiety and depression among healthcare workers during the COVID-19 pandemic in Oman. *Journal of Multidisciplinary Healthcare*, 13, 2177–2184.
- Bella, S., Yifat, F., Anat, E., & Tova, H. (2020). Anxiety and coping strategies among nursing students during the COVID-19 pandemic. *Ashkelon Academic College, School of Health Sciences, Ashkelon, Yitshak Ben Zvi 12, Palestine*.
- Bieling, P. J., Israeli, A., & Antony, M. M. (2003). Perfectionism and performance in the classroom: A daily diary study. *Anxiety, Stress, & Coping*, 16(3), 253–269.
- Charlson, F., van Ommeren, M., Flaxman, A., Cornett, J., Whiteford, H., & Saxena, S. (2019). New WHO prevalence estimates of mental disorders in conflict settings: A systematic review and meta-analysis. *The Lancet*, 29(7), 240–248.
- De Cuyper, K., Claes, L., Hermans, D., Pieters, G., & Smits, D. (2015). Psychometric properties of the multidimensional perfectionism scale of Hewitt in Dutch-speaking sample: Associations with the big five personality traits. *Journal of Personality Assessment*, 97(2), 182-190.

- De Cuyper, N., Van den Eynde, F., & Demyttenaere, K. (2015). Maladaptive perfectionism and psychopathology: A transdiagnostic perspective. *Clinical Psychology Review*, 39, 83–94.
- Dobson, K. S., & Dozois, D. J. A. (2019). *Risk factors in depression* (2nd ed.). Elsevier.
- Ghareeb, Gh. 'A. F. (2000). Depression Scale (D-2) BDI-II. *Journal of Education, Al-Azhar University*, 6(94), 283–332.
- Ghareeb, N. (2014). Strategies for coping with psychological stress in diabetic patients. *Tishreen University Journal for Research and Scientific Studies*, 36(3), 4–27.
- Hewitt, P. L., Flett, G. L., Mikail, S. F., Kealy, D., & Zhang, L. C. (2018). Perfectionism in the therapeutic context: The perfectionism social disconnection model. In J. Stoeber (Ed.), *The psychology of perfectionism* (pp. 306–329). Routledge.
- Huiling, L., Ruiling, L., & Huan, H. (2022). Work stress, burnout, occupational commitment, and social support among Chinese pediatric nurses: A moderated mediation model. *Journal of Pediatric Nursing*, 67(10), 16-23.
- Ibn 'Alu, A. (2003). *How to overcome anxiety and enjoy life*. Dar Quba for Publishing and Distribution.
- Ihuoma, M., & Njoku, D. (2022, November). What is mental illness? American Psychological Association. <https://www.psychiatry.org/what-is-mental-illness>
- Jallab, M., & Khamis, M. S. (2019). Stress coping strategies and their relationship to depression among emergency department nurses: A field study at Mohamed Boudiaf Hospital in Ouargla and Slimane Amirat Hospital in Touggourt. [Master's thesis, University of Kasdi Merbah Ouargla].
- Liberee, K., Gislaine, M., Lara, T., & Rex, W. (2022). Assessing the stress level among medical students in Rwanda. *School of Medicine, University of Global Health Equity, Kigali, Rwanda*.
- Lisa, W., & Sigrid, G. (2019). Perfectionism and its association with anxiety and depression in medical students. *Advances in Medical Education and Practice*, 10, 439–446.
- Liselotte, D., Nygaard, E., & Arendt, N. (2006). Anxiety and depression in medical students: A cross-sectional study. *Medical Education*, 40(6), 561–568.
- Liselotte, N., Dyrbye, M., Matthew, R., Thomas, M., & Tait, D. (2006). Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. *Academic Medicine*, 81(4), 87-89.
- Martin, A. J., Marsh, H. W., & Debus, R. L. (2016). Perfectionism and depressive symptoms in students: Examining the mediating roles of goal setting, rumination, and help seeking. *Learning and Individual Differences*, 45, 1–11.
- Martin, M., Simoni, B., Katerina, R., Donald, H., Murray, E., & Tara, G. (2016). Are perfectionism dimensions vulnerability factors for depressive symptoms after controlling for neuroticism? A meta-analysis of 10 longitudinal studies. *European Journal of Personality*, 30(9), 201–212.
- Mebratu, A., Birke, A., & Getinet, A. (2019). Prevalence and predictors of depression and anxiety among medical students in Addis Ababa, Ethiopia. *International Journal of Mental Health Systems*, 1(8), 13-30.
- Mebratu, A., Worku, B., & Molla, T. (2019). Anxiety, depression and associated factors among medical students of Jimma University, Southwest Ethiopia. *BMC Research Notes*, 12(1), 1–7.
- Mustafa, S. H. D. (2019). The perfectionism and its relation to chronic fatigue among a sample of students: A psychometric clinical study. *Journal of Psychological Counseling at the Psychological Counseling Center at Ain Shams University*, 30(59), 119–214.
- Nasrawi, S. (2015). Strategies for coping with professional stress among doctors on night shifts: A descriptive analytical study at Qais Khenchela Hospital - Algeria. *Journal of Truth at Ahmed Draya University Adrar*, 1(3), 224–258.

- Nator, A. (2020). Psychological immunity and its relationship with anxiety and depression among a sample of women who underwent mastectomy. (Unpublished master's thesis). Faculty of Arts, Amman Al-Ahliyya University, Amman, Jordan.
- Puthran, R., Zhang, M., Tam, W., & Ho, R. C. (2016). Prevalence of depression amongst medical students: A meta-analysis. *Medical Education*, 50(4), 456–468.
- Qaddoura, N., & Al-Aswad, M. (2018). Perfectionism as a predictor of social anxiety in a sample of university students. *Journal of the College of Basic Education for Educational and Human Sciences*, 8(40), 1–202.
- Robakowska, M., Fobke, A., Walkiewicz, M., & Tartas, M. (2018). Adaptive and maladaptive perfectionism and professional burnout among medical laboratory scientists. *Medycyna Pracy*, 7(3), 253-260.
- Robakowska, M., Fobke, M., & Walkiewicz, M. (2018). The relationship between perfectionism, coping strategies and burnout among teachers. *International Journal of Occupational Medicine and Environmental Health*, 31(6).
- Rotenstein, L. S., Ramos, M. A., & Torre, M. (2016). Prevalence and correlates of anxiety, depression, and burnout among US medical students. *Academic Medicine*, 91(9), 1265–1270.
- Rotenstein, L. S., Ramos, M. A., & Torre, M. (2016). Prevalence of depression, depressive symptoms, and suicidal ideation among medical students: A systematic review and meta-analysis. *JAMA*, 316(21), 2214–2236.
- Sayed, R. I. M. (2021). The factorial structure of the multi-dimensional perfectionism scale: A study using exploratory and confirmatory factor analysis. *Journal of Scientific Research in Education*, 22(2), 31–75.
- Shimi, R. A. H. (2020). Neurotic perfectionism among gifted individuals with disabilities – A case study. *Journal of Educational and Psychological Research*, 5(65), 1–149.
- Shishtawi, I., Taha, H., Mazrouei, S., et al. (2018). Personality traits as predictors of psychological stress and depression among medical students: A cross-sectional study. *The Arab Journal of Psychiatry*, 2(29), 123–130.
- Sílvia, A., Marisa, F., & Paula, P. (2021). Resilience and coping in medical emergency teams: A systematic review. *International Journal of Environmental Research and Public Health*, 18(4), 1618.
- Silvia, M., Fonseca, B., Sónia, C., Sara, F., Rui, C., & Cristina, Q. (2021). Why are emergency medical technicians' coping strategies dysfunctional? Direct and indirect effects of resilience and perceived stress. Faculty of Psychology and Education Sciences, University of Porto, Portugal.
- The Saudi Ministry of Health. (2021, August 12). Generalized anxiety disorder.
- World Health Organization. (2022). Mental health. <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>
- World Health Organization. (2022, June 17). Mental health. <https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response>
- World Health Organization. (2022, June 8). Mental disorders. <https://www.who.int/ar/news-room/fact-sheets/detail/mental-disorders>
- Yahya, A. (2018). Professional stress among teachers of physical and sports education for the secondary level working in the directorates of education for the state of Algeria. *Journal of Psychological and Educational Research*, 4(9), 30–31.
- Yusoff, M. S. (2013). Interventions on medical students' psychological health: A meta-analysis. *Journal of Taibah University Medical Sciences*, 9(1), 1–13.
- Yusoff, M. S. (2019). Multiple mini interview as an admission tool in higher education: Insights from a systematic review. *Journal of Taibah University Medical Sciences*, 14(3), 203-240.
- Yusoff, M. S. (2020). A comparative study on the psychological health status of pre-clinical medical students enrolled through different admission tests. Medical Education Department, School of Medical Sciences, Universiti Sains Malaysia, Kelantan.

Declaration of conflict of interest:

The researchers declare and undertake that there is no conflict of interest with any person or institution. This research has not been previously published in any way, whether written, read, published, visual or audio.

Funding statement:

This research did not receive any financial support.

Biography of researchers

Ammar Al Maharmah

Assistant Professor at Amman Al-Ahliyya University, Faculty of Arts and Sciences, Department of Clinical Psychology. His research focuses on topics related to depression, anxiety, psychological disorders, psychological resilience, and psychological toughness.

Email: a.almahrmah@ammanu.edu.jo

ORCID: <https://orcid.org/0009-0008-9244-9687>

Numan Al-Natsheh

Assistant Professor at the Department of Clinical Psychology in the Faculty of Arts and Sciences at Al-Ahliyya Amman University. He holds a Ph.D. in Educational Psychology, and his research specializations include motivation, self-handicapping, and mental health. Dr. Al-Natsheh is actively involved in teaching and research.

Email: Numan@ammanu.edu.jo

ORCID: <https://orcid.org/0009-0001-7908-4010>