



Mindfulness, Self-Efficacy, and Stress Among Final-Year Nursing Students

Ahmad Rayan, PhD

ABSTRACT

Stress is an inevitable part of nursing students' lives. To implement appropriate interventions to manage stress in nursing students, the roles of various factors associated with stress among these individuals must be identified. The purpose of the current study was to examine the relationship between stress, self-efficacy, and mindfulness among final-year nursing students, controlling for students' demographics. A descriptive correlational research design was used. A sample of 200 university students was recruited from four randomly selected universities in Jordan. Students provided information regarding their demographic characteristics and completed questionnaires regarding stress, self-efficacy, and mindfulness. Women and married participants had higher stress levels than other participants. Stress was negatively associated with self-efficacy and mindfulness. Mindfulness accounted for 13% of variance, demographics accounted for 10%, and self-efficacy accounted for 24%. Students who demonstrate high levels of stress may benefit from psychosocial interventions to increase mindfulness and self-efficacy. [*Journal of Psychosocial Nursing and Mental Health Services*, 57(4), 49-55.]

Nursing is one of the most stressful and challenging professions worldwide (Higazee, Rayan, & Khalil, 2016). Research has shown that nursing students report different levels of stress at various stages of their education (Edwards, Burnard, Bennett, & Hebden, 2010; Lekan, Ward, & Elliott, 2018; Lo, 2002). The educational process can impose stress on nursing students as they proceed through different levels of learning (Wolf, Stidham, & Ross, 2015). Zhao, Lei, He, Gu, and Li (2015) reported that workload and assignments are the most common stressors faced by nursing students. Additional stressors faced by nursing students include difficulty adjusting to change in sleeping or eating habits, social activities, and living environment (Shudifat & Al-Husban, 2015). For university nursing students, the

final year of education is accompanied by highly demanding tasks, and students face the challenge of transitioning from being a student to working as a RN who is held to a high degree of accountability and responsibility. Furthermore, nursing students in their final year might feel unprepared to work alone in the hospital without support from their clinical instructor. These factors could contribute to high stress levels among final-year nursing students. Exposure to a long period of high stress levels has various negative impacts on the physical and psychological well-being of nursing students, including restlessness, headaches, sleep disorders, irritability, memory impairment, forgetfulness, abnormal fatigue, and decreased learning and academic performance (Braga, Souza, Evangelista, & Pereira, 2012; Goff, 2011; Lewis et al., 2016). In a longitudinal study of nursing students' self-esteem, students in their final year had the lowest self-esteem levels (Randle, 2003).

In their transactional model of stress and coping, Lazarus and Folkman (1984) and Folkman (1997) highlighted the importance of coping responses to decrease the negative impacts of stress on individuals' well-being. In addition, self-efficacy was reported to

strategies, indicating that they may cope poorly with stressful situations. However, the higher the nursing students' self-efficacy, the higher the likelihood of their using positive coping strategies, such as problem-solving strategies (Zhao et al., 2015). Therefore, it is essential to improve self-efficacy and coping strategies among nursing students to enhance their ability to handle stress.

To date, there is inadequate evidence of what interventions work best to reduce stress levels among nursing students. Recent research suggests implementing specific interventions (e.g., mindfulness and stress management programs) to control stress among nursing students (van der Riet, Rossiter, Kirby, Dluzewska, & Harmon, 2015). *Mindfulness* is defined as awareness and acceptance of the present moment without judgment or reaction (Kabat-Zinn, 2013). Mindfulness has become increasingly used as a stress management intervention. In addition, it is considered a coping strategy that could improve the psychological well-being of various populations (Eberth & Sedlmeier, 2012; Gotink et al., 2015; Ott, 2004). However, its relationship with stress among nursing students has yet to be established. Researchers who wish to

efficacy. Identifying such relationships would provide data to help reduce stress among nursing students in the future. Therefore, the purpose of the current study was to examine the relationship of stress with self-efficacy and mindfulness among final-year nursing students, controlling for their demographics. The current study is distinguished from previous studies as it highlights the unique contribution of self-efficacy and mindfulness in reducing stress experienced by nursing students.

METHOD

A descriptive correlational research design was used. Using the G*Power program for sample size estimation, for hierarchical multiple regression analysis with an alpha of 0.05, a power of 0.95, and a medium effect size, the required sample size was 138. To avoid missing or incomplete data, the sample size was increased to 200. Therefore, a sample of 200 university students was recruited from four randomly selected universities in Jordan.

Measures

Demographic Survey. A demographic survey was developed by the author of the study to collect data regarding basic demographic characteristics of study participants, such as age, gender, marital status, and employment.

General Self-Efficacy Scale. The General Self-Efficacy Scale (GSES) is a widely used instrument for assessment of self-efficacy (Schwarzer & Jerusalem, 1995). The GSES is available in 27 different languages. It has 10 items rated on a 4-point Likert scale. The total score of the GSES ranges from 10 to 40, with higher scores indicating greater self-efficacy. The GSES has excellent internal consistency reliability (Cronbach's alpha = 0.87) (Wang, Hu, & Liu, 2001). It has been frequently used in research involving nursing students (Zhao et al., 2015). The Arabic version of the GSES has a unidimensional factor structure and excellent psychometric properties (Crandall, Rahim, & Yount, 2015).

Exposure to a long period of high stress levels has various negative impacts on the physical and psychological well-being of nursing students...

have an important role in determining how individuals would respond to stress (Lo, 2002). Previous research found a relationship between self-efficacy and the well-being of nursing students (Gibbons, 2010). Zhao et al. (2015) reported that nursing students usually use emotionally focused coping

implement mindfulness-based interventions to support nursing students should first establish the relationship between mindfulness and stress among these students. To date, no studies have linked mindfulness to stress, controlling for demographic characteristics of nursing students and their self-

Academic Self-Efficacy Scale. The Academic Self-Efficacy Scale (ASES) is a rapid assessment tool used to measure students' self-efficacy regarding various skills associated with academic achievement, such as general academic ability and time management, test-taking, and note-taking skills. The ASES was developed by Chemers, Hu, and Garcia in 2001. The Arabic version of the ASES includes nine items and has a Cronbach's alpha reliability of 0.93 and acceptable construct validity (Almohazie, 2018). Respondents are asked to rate items of the ASES on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*very strongly agree*), with higher scores indicating greater academic self-efficacy. Scores on the ASES have been reported to be associated with academic achievement (Khan, 2013).

Perceived Stress Scale. The Perceived Stress Scale (PSS) comprises 10 items rated on a 5-point Likert scale and is used to assess stress levels (Cohen, Kamarck, & Mermelstein, 1983). It is one of the most widely used psychological instruments for measuring stress. Cronbach's alpha for the scale is 0.78 (Cohen & Williamson, 1988). The total score ranges from 0 to 40, with higher scores indicating higher stress levels (Cohen et al., 1983). The PSS was previously used among nursing students (Zhao et al., 2015). The Arabic version of the PSS was reported to have excellent psychometric properties (Almadi, Cathers, Hamdan Mansour, & Chow, 2012).

Mindful Attention Awareness Scale. The Mindful Attention Awareness Scale (MAAS) was developed by Brown and Ryan (2003) to assess mindfulness. It is a 15-item scale used to measure a core characteristic of mindfulness related to attention or awareness in the present moment (Brown & Ryan, 2003). It has a 7-point Likert scale ranging from 0 to 6, with higher scores indicating greater mindfulness. The MAAS has a Cronbach's alpha ≥ 0.80 and adequate discriminant and convergent validity (Morgan, Masuda, & Anderson, 2013). In

addition, it has been validated for use with college students (Brown & Ryan, 2003). Previous research has reported excellent reliability and validity of the Arabic version of the MAAS that supports a one-factor structure of the measure (Rayan & Ahmad, 2018).

Data Collection and Ethical Considerations

Institutional Review Board approval was obtained from the respective committee at Zarqa University. Before data were collected, all participants signed the consent form. Study participants were provided with written information about the study purpose and the data collection procedure. All participants provided information regarding their demographic characteristics and completed self-reported measures about stress, self-efficacy, and mindfulness. Confidentiality of data was assured. Data were collected by the primary researcher (A.R.). Participants were informed that completing study questionnaires would not take longer than 20 minutes. Participation in the study was voluntary and participants had a right to withdraw from the study at any time without penalty.

Data Analysis

Data analysis was conducted using SPSS version 21. Descriptive statistics were used to present the study variables. An independent sample *t* test was performed to examine mean differences in stress and self-efficacy according to sample demographics. Pearson product-moment correlation was used to identify the relationship between stress and age, mindfulness, and self-efficacy among study participants. Hierarchical multiple regression analysis was used to examine the relationship of stress with mindfulness and self-efficacy among final-year nursing students, controlling for their demographics.

RESULTS

Sample Characteristics

A sample of 200 nursing students completed the study, including 154 (77%) female and 46 (23%) male

TABLE 1
SAMPLE CHARACTERISTICS
(N = 200)

Demographic	n (%)
Gender	
Female	154 (77)
Male	46 (23)
Marital status	
Single	172 (86)
Married	28 (14)
University type	
Public	100 (50)
Private	100 (50)
Employed	
No	140 (70)
Yes	60 (30)

participants. Students' ages ranged from 20 to 35, with a mean age of 23.35 years. Among participants, 28 (14%) were married and 172 (86%) were single; 100 (50%) students were from private universities, and 60 (30%) students were employed. The main sample characteristics are presented in **Table 1**.

Differences in Stress and Self-Efficacy According to Sample Characteristics

An independent sample *t* test was performed to examine the mean differences in stress, general self-efficacy (GSE), and academic self-efficacy (ASE) according to participants' gender, marital status, employment, and type of university. Analysis revealed that participants had statistically significant differences in stress according to their gender ($p < 0.01$), with female students having higher mean PSS scores (mean = 22.51) than male students (mean = 18.57). In addition, married students had higher stress levels (mean = 23.92) than students who were single (mean = 21.17, $p < 0.05$), and married students had lower ASES scores (mean = 4.37) than students who were single (mean = 5.04, $p < 0.01$) (**Table 2**).

TABLE 2

DIFFERENCES IN STRESS AND SELF-EFFICACY ACCORDING TO SAMPLE CHARACTERISTICS

Variable	Mean (SD)		
	PSS Scores ^a	GSES Scores ^b	ASES Scores ^c
Gender			
Female	22.51 (5.84)**	29.30 (4.80)	4.97 (0.90)
Male	18.57 (5.95)	28.83 (4.60)	4.95 (1.39)
Marital status			
Married	23.92 (3.11)*	27.58 (5.03)	4.37 (0.86)**
Single	21.17 (6.35)	29.34 (4.69)	5.04 (1.03)
Employed			
Yes	22.87 (5.64)	28.80 (4.28)	4.87 (0.84)
No	21.06 (6.20)	29.36 (4.94)	5.01 (1.10)
University type			
Public	20.79 (9.99)	29.68 (4.88)	4.87 (1.14)
Private	21.92 (5.69)	29.0 (4.69)	5.0 (0.98)

Note. PSS = Perceived Stress Scale; GSES = General Self-Efficacy Scale; ASES = Academic Self-Efficacy Scale.

^a Total score ranges from 0 to 40, with higher scores indicating higher stress levels.

^b Total score ranges from 10 to 40, with higher scores indicating greater self-efficacy.

^c Mean score ranges from 1 to 7, with higher scores indicating greater academic self-efficacy.

* $p < 0.05$; ** $p < 0.01$.

TABLE 3

RELATIONSHIP OF STRESS WITH AGE, MINDFULNESS, AND SELF-EFFICACY AMONG PARTICIPANTS

Variable	Age	Mindfulness	GSE	ASE
Stress	0.09	-0.45**	-0.43**	-0.41**

Note. GSE = general self-efficacy; ASE = academic self-efficacy.

* $p < 0.05$; ** $p < 0.01$.

The Relationship of Stress With Age, Mindfulness, and Self-Efficacy

Table 3 presents the relationship of stress with age, mindfulness, and self-efficacy among study participants. Stress was significantly and negatively associated with mindfulness ($r = -0.45$, $p < 0.01$), GSE ($r = -0.43$, $p < 0.01$), and ASE ($r = -0.41$, $p < 0.01$). However, no significant relationship was found between stress and age of participants ($r = 0.09$, $p > 0.05$).

Relationship of Stress With Mindfulness

To examine the relationship between stress and mindfulness, controlling for demographic characteristics and self-efficacy, hierarchical multiple regressions were used. Sociodemographic variables that were significantly associated with stress have been included in the subsequent regression analyses. Gender and marital status of participants were entered in the first step of the regression analysis (Table 4).

In this step, gender and marital status were significantly correlated with stress ($F = 10.10$, $p < 0.01$). Together, gender and marital status accounted for 10% of the variance in stress among students. The regression examining the relationship between self-efficacy (ASE and GSE) and stress, after controlling for participants' gender and marital status, was also found to be significant ($F = 23.98$, $p < 0.01$). Self-efficacy accounted for 24% variance beyond the 10% accounted for by gender and marital status. In the regression examining the relationship between self-efficacy and stress, gender, ASE, and GSE had significant contributions to the model. Finally, the regression examining the relationship between mindfulness and stress, after controlling for gender, marital status, ASE, and GSE, was also found to be significant ($F = 32.16$, $p < 0.01$). Mindfulness accounted for 13% additional variance above and beyond the 34% accounted for by all other variables. In this step, gender, marital status, ASE, GSE, and mindfulness had unique contributions to the model.

DISCUSSION

The purpose of the current study was to examine the relationship of stress with self-efficacy and mindfulness among final-year nursing students, controlling for their demographics. Recently, stress has been a topic of concern for nursing students, as most nursing students are studying while working, raising children, and maintaining other responsibilities (Spadaro & Hunker, 2016). In addition, nursing students might face various challenges during their journey to becoming RNs due to clinical training, theory-practice gap, and the faculty member-student relationship (Bagcivan, Cinar, Tosun, & Korkmaz, 2015; Monaghan, 2015).

Female and married participants had higher stress levels than other participants. This outcome is consistent with the fact that female and married individuals have various social roles and responsibilities associated with having a family and other household duties.

TABLE 4

HIERARCHICAL MULTIPLE REGRESSION OF MARITAL STATUS, GENDER, SELF-EFFICACY, AND MINDFULNESS AS PREDICTORS OF STRESS

Model	<i>b</i>	<i>SE b</i>	β	ΔR^2
Step 1				0.10**
Constant	27.696	2.440		
Marital status	-2.810	1.273	-0.151*	
Gender	-3.877	0.985	-0.270**	
Step 2				0.24**
Constant	44.213	2.929		
Marital status	-1.083	1.123	-0.058	
Gender	-4.042	0.849	-0.281**	
ASE	-1.452	0.398	-0.246**	
GSE	-0.430	0.085	-0.335**	
Step 3				0.13**
Constant	49.016	2.747		
Marital status	-0.753	1.017	-0.041	
Gender	-4.293	0.769	-0.299**	
ASE	-1.073	0.364	-0.182**	
GSE	-0.348	0.078	-0.271**	
Mindfulness	-2.611	0.396	-0.371**	

Note. *SE* = standard error; *ASE* = academic self-efficacy; *GSE* = general self-efficacy.

* $p < 0.05$; ** $p < 0.01$.

These social roles and responsibilities might increase stress levels (Cheung et al., 2016). In the current study, age was not associated with stress levels. This outcome could suggest that the demands and responsibilities imposed on undergraduate nursing students might be associated with stress regardless of students' age.

Stress was negatively associated with GSE and ASE. Bandura (1997) defined *perceived self-efficacy* as individuals' expectations regarding their ability to overcome difficulties associated with specific tasks in personal life. ASE concerns students' expectations regarding their ability to master academic requirements. Considering the role of GSE and ASE in reducing stress, there is a need to strengthen students' self-efficacy. Self-efficacy is not considered an innate trait; instead, it can be developed by effort, experi-

ences, and mindfulness, resulting in an outgrowth of personal ability and psychological well-being (Thompson, Arnkoff, & Glass, 2011).

In the current study, stress was negatively associated with mindfulness. Previous research has shown that mindfulness has a positive impact on nursing students' stress. However, this outcome might not be generalizable because it was reported by small-scale localized studies (van der Riet, Levett-Jones, & Aquino-Russell, 2018). The current study suggests that self-efficacy and mindfulness could reduce stress among nursing students, regardless of their demographics. Thus, nursing students who demonstrate high levels of stress might benefit from psychosocial interventions that strengthen mindfulness and self-efficacy. Mindfulness levels can be increased through mindfulness-based interventions, such

as mindfulness-based stress reduction (MBSR) and mindfulness-based cognitive therapy (MBCT) (Germer, Siegel, & Fulton, 2016), whereas self-efficacy can be strengthened through verbal persuasion (i.e., positive feedback that motivates or guides students) and providing positive feedback during the performance of nursing skills or tasks (Bandura, 1997).

IMPLICATIONS AND RECOMMENDATIONS

The current study has important implications and recommendations for nursing education and practice. Policymakers should add requirements for nursing schools and practice settings to help nursing students learn in an optimal environment in which students are able to cope with negative stress. Another important recommendation is to incorporate mindfulness

into nursing curriculum to ensure that nursing students have a specific coping strategy to handle stress experienced during their journey to becoming RNs. Nursing students may want to practice mindfulness in classrooms to reduce stress levels and control negative thoughts throughout university life. It is impossible to force students to engage in mindfulness practice. However, introducing mindfulness as a stress management strategy that enhances students' learning ability will increase the potential for students engaging in mindfulness practice. Nursing students and graduate nurses employed in various clinical settings should be informed that mindfulness is a viable strategy to cope with stress from professional and personal life. In addition, nursing students can use mindfulness-based interventions not only throughout university life, but also when employed in hospitals and other clinical settings.

One unique aspect of the current study is that it introduces the concept of mindfulness and examines its role in reducing stress in a sample of Arab nursing students. Mindfulness is still a new concept in the Arab culture and was recently introduced into Arab research with a sample of parents of children with autism (Rayan & Ahmad, 2017, 2018). Mindfulness is an emerging concept in nursing education and practice as well (White, 2014). However, in Western countries, mindfulness has become a popular way of coping with stress. Many Arab nurses are employed in Western hospitals and should be aware of this stress reduction modality. Policymakers may want to encourage implementing mindfulness-based interventions, including MBSR and MBCT, as psychological interventions in various Arab settings. Considering the role of self-efficacy in reducing stress levels, faculty members and mentors should consider factors that can contribute to increased self-efficacy among students, including providing positive reinforcement for students and improving students' knowledge and skills. Avoid-

ing negative feedback is also recommended, as negative feedback has a negative effect on self-efficacy (Kim, 2018).

LIMITATIONS

Some limitations should be considered when interpreting the study outcomes. First, this study included only nursing students in their final year. Thus, individuals who completed the current study do not represent all levels of nursing students. Second, all instruments used in the study were based on self-report data, as these data were appropriate for meeting the study purpose. Self-report measures could be associated with social desirability bias, in which students may guess what the researcher is looking for and change their answers accordingly. However, the measures used in the current study may have been less susceptible to this type of bias due to their nature, as most responses to the questions are considered socially acceptable. Lastly, most students who completed the study were female and single. This study might underrepresent male and married students. However, study respondents had similar characteristics as most Jordanian nursing students in terms of gender and marital status.

CONCLUSION

Mindfulness and self-efficacy were found to be negatively associated with stress among final-year nursing students. Thus, nursing students who demonstrate high levels of stress might benefit from psychosocial interventions to strengthen mindfulness and self-efficacy. Further research should focus on developing a culturally adaptable intervention that could effectively strengthen mindfulness and self-efficacy among nursing students.

REFERENCES

- Almadi, T., Cathers, I., Hamdan Mansour, A.M., & Chow, C.M. (2012). An Arabic version of the Perceived Stress Scale: Translation and validation study. *International Journal of Nursing Studies*, 49, 84-89. doi:10.1016/j.ijnurstu.2011.07.012
- Almohazie, M.F. (2018). *Reliability and validity of*

- an Arabic translation of academic self-efficacy scale (ASE) on students at King Faisal University* (Doctoral dissertation). Retrieved from https://digitalcommons.wayne.edu/cgi/viewcontent.cgi?article=2909&context=oa_dissertations
- Bagcivan, G., Cinar, F.I., Tosun, N., & Korkmaz, R. (2015). Determination of nursing students' expectations for faculty members and the perceived stressors during their education. *Contemporary Nurse*, 50, 58-71. doi:10.1080/10376178.2015.1010259
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W.H. Freeman.
- Braga, P.C., Souza, L.A., Evangelista, R.A., & Pereira, L.V. (2012). The occurrence of headaches and their effect upon nursing undergraduate students [article in Portuguese]. *Revista da Escola de Enfermagem da USP*, 46, 138-144.
- Brown, K.W., & Ryan, R.M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84, 822-848.
- Chemers, M.M., Hu, L.T., & Garcia, B.F. (2001). Academic self-efficacy and first year college student performance and adjustment. *Journal of Educational Psychology*, 93, 55-64. doi:10.1037//0022-0663.93.1.55
- Cheung, T., Wong, S.Y., Wong, K.Y., Law, L.Y., Ng, K., Tong, M.T.,...Yip, P.S. (2016). Depression, anxiety and symptoms of stress among baccalaureate nursing students in Hong Kong: A cross-sectional study. *International Journal of Environmental Research and Public Health*, 13, E779. doi:10.3390/ijerph13080779
- Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 386-396. doi:10.2307/2136404
- Cohen, S., & Williamson, G. (1988). Perceived stress in a probability sample of the U.S. In S. Spacapan & S. Oskamp (Eds.), *The social psychology of health: Claremont symposium on applied social psychology* (pp. 31-67). Newbury Park, CA: Sage.
- Crandall, A., Rahim, H.F., & Yount, K.M. (2015). Validation of the General Self-Efficacy Scale among Qatari young women. *Eastern Mediterranean Health Journal*, 21, 891-896.
- Eberth, J., & Sedlmeier, P. (2012). The effects of mindfulness meditation: A meta-analysis. *Mindfulness*, 3, 174-189.
- Edwards, D., Burnard, P., Bennett, K., & Hebden, U. (2010). A longitudinal study of stress and self-esteem in student nurses. *Nurse Education Today*, 30, 78-84. doi:10.1016/j.nedt.2009.06.008
- Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science & Medicine*, 45, 1207-1221.
- Germer, C., Siegel, R.D., & Fulton, P.R. (Eds.). (2016). *Mindfulness and psychotherapy*. New York, NY: Guilford.
- Gibbons, C. (2010). Stress, coping and burn-out in nursing students. *International Journal of*

- Nursing Studies*, 47, 1299-1309. doi:10.1016/j.ijnurstu.2010.02.015
- Goff, A.M. (2011). Stressors, academic performance, and learned resourcefulness in baccalaureate nursing students. *International Journal of Nursing Education Scholarship*, 8, Article 1. doi:10.2202/1548-923X.2114
- Gotink, R.A., Chu, P., Busschbach, J.J., Benson, H., Fricchione, G.L., & Hunink, M.M. (2015). Standardised mindfulness-based interventions in healthcare: An overview of systematic reviews and meta-analyses of RCTs. *PLoS One*, 10(4), e0124344. doi:10.1371/journal.pone.0124344
- Higazee, M.Z.A., Rayan, A., & Khalil, M. (2016). Relationship between job stressors and organizational support among Jordanian nurses. *American Journal of Nursing Research*, 4(3), 51-55. doi:10.12691/ajnr-4-3-1
- Kabat-Zinn, J. (2013). *Full catastrophe living, revised edition: How to cope with stress, pain and illness using mindfulness meditation*. London, UK: Hachette.
- Khan, M. (2013). Academic self-efficacy, coping, and academic performance in college. *International Journal of Undergraduate Research and Creative Activities*, 5(4), 1-11. doi:10.7710/2168-0620.1006
- Kim, E.J. (2018). Effects of examiner's verbal feedback on nursing students' accuracy of self-assessment, emotional response, self-efficacy, and perceived quality of feedback in skill performance assessment. *Journal of Korean Academy of Fundamentals of Nursing*, 25, 146-154. doi:10.7739/jkafn.2018.25.2.146
- Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.
- Lekan, D.A., Ward, T.D., & Elliott, A.A. (2018). Resilience in baccalaureate nursing students: An exploration. *Journal of Psychosocial Nursing and Mental Health Services*, 56(7), 46-55. doi:10.3928/02793695-20180619-06
- Lewis, S.L., Bucher, L., Heitkemper, M.M., Harding, M.M., Kwong, J., & Roberts, D. (2016). *Stress and stress management. In Medical-surgical nursing: Assessment and management of clinical problems* (pp. 77-89). Philadelphia, PA: Elsevier.
- Lo, R. (2002). A longitudinal study of perceived level of stress, coping and self-esteem of undergraduate nursing students: An Australian case study. *Journal of Advanced Nursing*, 39, 119-126.
- Monaghan, T. (2015). A critical analysis of the literature and theoretical perspectives on theory-practice gap amongst newly qualified nurses within the United Kingdom. *Nurse Education Today*, 35(8), e1-e7. doi:10.1016/j.nedt.2015.03.006
- Morgan, J.R., Masuda, A., & Anderson, P.L. (2013). A preliminary analysis of the psychometric properties of the mindful attention awareness scale among African American college students. *Mindfulness*, 5, 639-645. doi:10.1007/s12671-013-0216-8
- Ott, M.J. (2004). Mindfulness meditation: A path of transformation and healing. *Journal of Psychosocial Nursing and Mental Health Services*, 42(7), 22-29.
- Randle, J. (2003). Changes in self-esteem during a 3 year pre-registration diploma in higher education (nursing) programme. *Journal of Clinical Nursing*, 12, 142-143.
- Rayan, A., & Ahmad, M. (2017). Effectiveness of mindfulness-based intervention on perceived stress, anxiety, and depression among parents of children with autism spectrum disorder. *Mindfulness*, 8, 677-690. doi:10.1007/s12671-016-0595-8
- Rayan, A., & Ahmad, M. (2018). The psychometric properties of the mindful attention awareness scale among Arab parents of children with autism spectrum disorder. *Archives of Psychiatric Nursing*, 32, 444-448. doi:10.1016/j.apnu.2018.01.001
- Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio* (pp. 35-37). Windsor, UK: NFER-Nelson.
- Shudifat, R.M., & Al-Husban, R.Y. (2015). Perceived sources of stress among first-year nursing students in Jordan. *Journal of Psychosocial Nursing and Mental Health Services*, 53(6), 37-43. doi:10.3928/02793695-20150522-01
- Spadaro, K.C., & Hunker, D.F. (2016). Exploring the effects of an online asynchronous mindfulness meditation intervention with nursing students on stress, mood, and cognition: A descriptive study. *Nurse Education Today*, 39, 163-169. doi:10.1016/j.nedt.2016.02.006
- Thompson, R.W., Arnkoff, D.B., & Glass, C.R. (2011). Conceptualizing mindfulness and acceptance as components of psychological resilience to trauma. *Trauma, Violence & Abuse*, 12, 220-235. doi: 10.1177/1524838011416375
- van der Riet, P., Levett-Jones, T., & Aquino-Russell, C. (2018). The effectiveness of mindfulness meditation for nurses and nursing students: An integrated literature review. *Nurse Education Today*, 65, 201-211. doi:10.1016/j.nedt.2018.03.018
- van der Riet, P., Rossiter, R., Kirby, D., Dluzewska, T., & Harmon, C. (2015). Piloting a stress management and mindfulness program for undergraduate nursing students: Student feedback and lessons learned. *Nurse Education Today*, 35, 44-49. doi:10.1016/j.nedt.2014.05.003
- Wang, C.K., Hu, Z.F., & Liu, Y. (2001). Evidence for reliability and validity of the Chinese version of the General Self-Efficacy Scale [article in Chinese]. *Chinese Journal of Applied Psychology*, 7, 37-40.
- White, L. (2014). Mindfulness in nursing: An evolutionary concept analysis. *Journal of Advanced Nursing*, 70, 282-294. doi:10.1111/jan.12182
- Wolf, L., Stidham, A.W., & Ross, R. (2015). Predictors of stress and coping strategies of US accelerated vs. generic baccalaureate nursing students: An embedded mixed methods study. *Nurse Education Today*, 35, 201-205. doi:10.1016/j.nedt.2014.07.005
- Zhao, F.F., Lei, X.L., He, W., Gu, Y.H., & Li, D.W. (2015). The study of perceived stress, coping strategy and self-efficacy of Chinese undergraduate nursing students in clinical practice. *International Journal of Nursing Practice*, 21, 401-409. doi:10.1111/ijn.12273

Dr. Rayan is Assistant Professor, Psychiatric and Mental Health Nursing, Zarqa University, Zarqa, Jordan.

The author has disclosed no potential conflicts of interest, financial or otherwise. This research was funded by the Deanship of Research and Graduate Studies, Zarqa University, Jordan.

Address correspondence to Ahmad Rayan, PhD, Assistant Professor, Psychiatric and Mental Health Nursing, Zarqa University, P.O. Box 132222, Zarqa 13132, Jordan; e-mail: arayan@zu.edu.jo.

Received: July 28, 2018

Accepted: September 10, 2018

doi:10.3928/02793695-20181031-01

Reproduced with permission of copyright owner. Further reproduction
prohibited without permission.