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ORIGINAL RESEARCH REPORTS

The Role of Self-care in Determining Healthcare Professions Students' Mindful Eating

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Abstract

Purpose: Healthcare professions students face demanding academic workloads, which can negatively impact their health behaviors, including eating habits. Mindful eating has recently emerged as a potential strategy to promote healthy eating behaviors. However, research on the factors influencing mindful eating among healthcare professions students, particularly the role of self-care, remains limited. This study was conducted to investigate the role of self-care in determining mindful eating among undergraduate nursing students.

Methods: This cross-sectional study was conducted in a sample of healthcare professions students in Jordan (N = 171). Data were collected using the Self-care Inventory (SCI) and the Mindful Eating Questionnaire (MEQ). Data analysis was performed using Pearson's r correlations and multiple linear regression.

Results: The findings revealed a significant positive correlation between the three scales of self-care and mindful eating. Multiple linear regression showed that healthcare professions students' mindful eating is predicted by their self-care scores: $F(3, 167) = 32.80, p < 0.001, R^2 = 0.37$. Self-care monitoring and self-care management emerged as the most significant predictors of mindful eating, explaining 37% of the variance in total mindful eating scores.

Conclusion: This study highlights the importance of self-care in determining healthcare professions students' mindful eating behaviors. Integrating self-care practices and mindful eating interventions into healthcare professions curricula could be beneficial for promoting healthy eating habits and improving student well-being.

Keywords: Self-care, Mindful eating, Healthcare professions students, Well-being

1. Introduction

Healthcare professions students are often overwhelmed with demanding curricula and academic responsibilities. Common features across healthcare professions curricula include intense coursework load, extensive practical and clinical training hours, and learning in high-pressure environments [1,2]. These academic responsibilities could influence healthcare professions students' academic achievement and retention [3]. In addition, they could lead to heightened stress and negatively impact healthcare professions students' health and well-being. Different studies showed that healthcare professions students are at high risk for psychological health problems such as stress and depressive symptoms [4–7]. Healthcare professions students' behaviors (e.g., physical activity, smoking, and use of drugs) are also affected by their academic responsibilities [8–11].

Adopting unhealthy eating habits is another common behavior among healthcare professions students [11]. As they transition into college, the level of physical activity decreases among healthcare professions students leading to unplanned weight gain [12,13]. Consumption of fast food is considered one of the key unhealthy eating habits among university students [14]. Skipping meals (e.g., breakfast), consuming vegetables and fruits less than recommended, and increasing the intake of snacks are other examples of unhealthy eating habits [14,15]. To prevent the consequences of unhealthy eating habits, it is necessary to investigate the impact of potential interventions and strategies. Mindful eating has recently emerged as a novel strategy that could mitigate unhealthy eating habits [16,17].

As a novel, evolving concept, there is no unified definition of mindful eating. Tapper defined it as “the application of mindfulness to eating-related

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thoughts, emotions, bodily sensations and behaviours” [18], p169. In addition, mindful eating was described as the non-judgmental awareness of physical and emotional sensations while eating [19]. Such broad definitions indicate that mindful eating does not only mean the implementation of intervention programs to overcome unhealthy eating habits, but also addresses the potential role of mindful eating as a decision-making process to make healthy choices. Different studies have shown that mindful eating can contribute to improved weight management, reduced emotional eating, and better overall dietary choices [20,21]. Despite the growing evidence about its importance, research regarding the role of mindful eating is still not thoroughly understood in healthcare professions students [17]. Specifically, the association between self-care and mindful eating among healthcare professions students is not addressed in the literature. Thus, this study was conducted to investigate the role of self-care in determining mindful eating among undergraduate nursing students.

Self-care is defined as “a process of maintaining health through health-promoting practices and managing illness” [22], p208. Self-care encompasses various practices that promote physical and mental well-being, including healthy eating habits [23,24]. Self-care was chosen as the predictor variable in the current study based on the evidence in the literature regarding its role in improving university students', and other populations', overall health. Previous studies demonstrated that self-care is associated with lower stress, improved sleep quality, and better quality of life [25,26]. In addition, self-care has been linked to improved mindfulness among university students [27]. Based on this evidence, the author of this study hypothesizes that students with adequate self-care are more likely to exhibit higher levels of mindful eating. By understanding this relationship, scientific evidence about healthcare professions students' mindful eating and eating habits could be expanded and advanced. Additionally, this research is expected to help healthcare professions students to engage in healthy lifestyle habits early in their professional development through coping with the demanding nature of their current academic responsibilities and future roles as care providers.

2. Methods

2.1. Design and setting

This study was conducted using a cross-sectional design in a sample of Jordanian healthcare professions students.

2.2. Participants

Nonprobability sampling was used to recruit healthcare professions students to participate in this study. Invitations were sent via the university official email address to students who met the following inclusion criteria: (1) 18 years old or older; and (2) being currently enrolled as a full-time student in one of the healthcare professions faculties (medicine, dentistry, nursing, pharmacy, and applied medical sciences). Sample size estimation was determined using G*Power analysis based on the following parameters: alpha = 0.05, Power = 0.90, effect size = 0.10, and number of predictors = 3. The minimum required sample size was 146 healthcare professions students.

2.3. Data collection instruments

The participants in this study were invited by sending them invitations via their official university email addresses. A Google Form link was provided in the invitation email. The Google Form included an informed consent statement on the first page. In addition, the form included a demographics questionnaire, the self-care inventory, the self-care self-efficacy scale, and the mindful eating questionnaire. To ensure the integrity of responses, a timer was set on Google Forms. This allowed the researcher to monitor the time each participant took to complete the survey. Responses completed significantly faster than the average completion time were flagged for potential random or inattentive responding. On average, completing the survey took approximately 10–15 min.

2.3.1. Selfcare

The self-care inventory (SCI) was used to measure selfcare in this study [28]. This tool consists of 20 items listed under three separate scales: (1) self-care maintenance (8 items); (2) self-care monitoring (8 items); and (3) self-care management (6 items). The response options for the items are Likert type with 5 possible options. The total score is obtained using specific instructions and formulas available on the web [29]. The resulting total scores for the three scales are out of 100; scores of ≥ 70 indicate adequate selfcare. The psychometric properties of the SCI as reported by Luciani et al. [28] and Rababah et al. [30] support its validity and reliability. In this study, the Cronbach's α for the self-care maintenance, self-care monitoring, and self-care management scales were 0.82, 0.85, and 0.80; respectively.

The developers of the SCI recommend using another scale to measure self-efficacy. Selfcare

Self-Efficacy (SCSE) Scale is a 10-item tool used to measure the individual's confidence to perform and maintain self-care [29]. The response options for the SCSE scale are Likert type with possible scores for each item ranging from 1 (Not Confident) to 5 (Extremely Confident). Obtaining total SCSE scale scores are also available on the web [29]. The psychometric properties of this scale have been examined in samples recruited from the USA, Hong Kong, Italy, and Brazil [31]. In the current study, the Cronbach's α was 0.94.

2.3.2. Mindful eating

The Mindful Eating Questionnaire (MEQ) was used to measure participants' mindful eating [19]. The MEQ is a 28-item questionnaire that comprises five subscales: awareness (7 items), distraction (3 items), disinhibition (8 items), emotional response (4 items), and external cues (6 items). The response options for the SCSE scale are Likert type with possible scores for each item ranging from 1 (never/rarely) to 4 (usually/always). The total score is calculated as the mean of the 28 items with higher scores indicating higher levels of mindful eating. The evidence supports the factor structure and internal consistency of the MEQ [19]. The values of Cronbach's α in this study were 0.94, 0.88, 0.76, 0.72, 0.73, and 0.77 for the total MEQ and awareness, distraction, disinhibition, emotional response, and external cues subscales; respectively.

2.4. Data analysis

Data analysis was performed using SPSS (version 27). Descriptive statistics and frequencies were used. Pearson's r was used to examine the bivariate correlations between mindful eating and self-care. Multiple linear regression was used to examine the predicting effect of self-care dimensions (i.e., maintenance, monitoring, and management) on mindful eating and its subscales. Missing values were replaced using multiple imputation.

2.5. Ethical considerations

This study was approved by the institutional review (IRB) board at Jordan University of Science and Technology (ID #: 2022/147/22). An informed consent was obtained from each participant prior to collecting the data. The participants were assured that their participation is fully voluntary, and they have the right not to participate or to withdraw from the study at any time.

3. Results

3.1. Participants' characteristics

A total of 171 healthcare professions students participated in this study. The average age was 20.40 years ($SD = 2.7$). Most participants were female (78.1%). The SCI scores showed that healthcare professions students had inadequate self-care in all scales. Regarding the MEQ scores, the average total score was 1.91 ($SD = 57$). Table 1 summarizes the participants' characteristics.

3.2. Bivariate correlations

The results of bivariate correlations showed that the scores on the three SCI scales had moderate, positive, statistically significant correlations with the total score on the MEQ ($r = 0.46$ to 0.56 , $p < 0.001$). The SCSE scores also demonstrated a moderate, positive, statistically significant correlation with the total score on the MEQ. Similarly, the bivariate correlations between the three SCI scales and the subscales of the MEQ were positive and statistically significant (Table 2).

3.3. Multiple linear regression

The assumptions of multiple linear regression (normal distribution and absence of multicollinearity) were checked before performing the regression analysis. Multicollinearity was checked based on the values of correlation coefficients between the dependent variables and the values of variance inflation factor (VIF). Bivariate correlations showed that multicollinearity was not an issue as the values ranged between 0.30 and 0.90. All values of the VIF were less than 10; providing additional evidence that multicollinearity was avoided.

Six regression models were performed in this study. The outcome variable in the first model was the total MEQ score, and the five subscales of mindful eating were used as the outcome variables in the remaining five models. The results showed that all regression models were statistically significant. The first regression model indicated that healthcare professions students' MEQ scores are predicted by their self-care scores: $F(3, 167) = 32.80$, $p < 0.001$, $R^2 = 0.37$. Self-care monitoring and self-care management were the significant predictors in the first regression model and were responsible for 36% of the explained variance of the MEQ total scores. The results of the remaining models are presented in Table 3. As presented, the subscales of

Table 1. Participants' characteristics.

Categorical variables		
Variable	Frequency	Percentage
Gender:		
Male	37	21.6
Female	134	78.4
Faculty:		
Medicine	22	12.9
Dentistry	32	18.7
Nursing	52	30.4
Pharmacy	29	17.0
Applied medical sciences	36	21.0
Continuous variables		
	Mean (SD)	Minimum-Maximum
Self-care maintenance	49.76 (21.36)	0–100
Self-care monitoring	52.49 (22.49)	0–100
Self-care management	46.88 (21.73)	0–91.67
Self-care Self-efficacy	55.89 (23.83)	0–100
Mindful Eating: Total	1.91 (0.57)	1–4
Mindful Eating: Awareness	2.21 (0.82)	1–4
Mindful Eating: Distraction	1.74 (0.67)	1–4
Mindful Eating: Disinhibition	1.89 (0.54)	1–4
Mindful Eating: Emotional response	1.82 (0.72)	1–4
Mindful Eating: External cues	1.91 (0.57)	1–4

Table 2. Bivariate correlations.

	SCma	SCmo	SCmn	SCSE	MEt	MEa	MEdt	MEdi	MEer	MEec
SCma	1									
SCmo	0.61**	1								
SCmn	0.58**	0.69**	1							
SCSE	0.56**	0.73**	0.64**	1						
MEt	0.46**	0.56**	0.55**	0.50**	1					
MEa	0.49**	0.62**	0.59**	0.53**	0.84**	1				
MEdt	0.22*	0.36**	0.32**	0.33**	0.75**	0.47**	1			
MEdi	0.37**	0.48**	0.49**	0.46**	0.89**	0.74**	0.60**	1		
MEer	0.42**	0.34**	0.39**	0.32**	0.84**	0.58**	0.56**	0.66**	1	
MEec	0.38**	0.48**	0.50**	0.42**	0.87**	0.68**	0.50**	0.77**	0.68**	1

SCma: self-care maintenance, SCmo: self-care monitoring, SCmn: self-care management, SCSE: self-care self-efficacy, MEt: mindful eating total score, MEa: mindful eating awareness subscale score, MEdt: mindful eating distraction subscale score, MEdi: mindful eating disinhibition subscale score, MEer: mindful eating emotional response subscale score, MEec: mindful eating external cues subscale score.

**p* value <0.05.

***p* value <0.001.

mindful eating were predicted by at least one scale of the SCI. For example, the distraction subscale of MEQ had only one significant predictor (i.e., self-care monitoring) whereas the awareness subscale had two significant predictors (i.e., self-care monitoring and self-care management).

4. Discussion

Healthcare professions students are often immersed in challenging academic and clinical training responsibilities. Such unique challenges and stressors may impact healthcare professions

students' eating behaviors and self-care practices. The literature shows that healthcare professions students are at high risk for many unhealthy eating habits [12–15]. This study investigated the role of self-care in determining mindful eating among healthcare professions students. The findings provide valuable insights into the relationship between these two constructs and suggest potential implications for promoting healthy eating habits in this population.

The results revealed that the majority of participants demonstrated inadequate self-care practices across all scales measured. These results suggest

Table 3. Multiple linear regression.

Predictor	B	SE	β	t	p
Outcome variable: Mindful eating					
Model summary: $F(3, 167) = 32.80, p < 0.001, R^2 = 0.37, \text{adjusted } R^2 = 0.36$					
Constant	1.03	0.09	–	10.47	<0.001
Self-care maintenance	0.003	0.002	0.11	1.38	0.16
Self-care monitoring	0.007	0.002	0.29	3.15	0.002
Self-care management	0.008	0.002	0.29	3.34	0.001
Outcome variable: Mindful eating awareness subscale					
Model summary: $F(3, 167) = 43.92, p < 0.001, R^2 = 0.44, \text{adjusted } R^2 = 0.43$					
Constant	0.83	0.13	–	6.27	<0.001
Self-care maintenance	0.004	0.003	0.11	1.38	0.17
Self-care monitoring	0.013	0.003	0.37	4.38	<0.001
Self-care management	0.01	0.003	0.27	3.26	0.001
Outcome variable: Mindful eating distraction subscale					
Model summary: $F(3, 167) = 9.03, p < 0.001, R^2 = 0.14, \text{adjusted } R^2 = 0.12$					
Constant	1.16	0.14	–	8.58	<0.001
Self-care maintenance	–0.001	0.003	–0.04	–0.46	0.64
Self-care monitoring	0.009	0.003	0.29	2.73	0.007
Self-care management	0.004	0.003	0.14	1.39	0.67
Outcome variable: Mindful eating disinhibition subscale					
Model summary: $F(3, 167) = 21.94, p < 0.001, R^2 = 0.28, \text{adjusted } R^2 = 0.27$					
Constant	1.17	0.09	–	11.77	<0.001
Self-care maintenance	0.001	0.002	0.045	0.52	0.60
Self-care monitoring	0.006	0.002	0.26	2.65	0.009
Self-care management	0.007	0.002	0.29	3.10	0.002
Outcome variable: Mindful eating emotional response subscale					
Model summary: $F(3, 167) = 14.72, p < 0.001, R^2 = 0.21, \text{adjusted } R^2 = 0.20$					
Constant	0.98	0.14	–	6.98	<0.001
Self-care maintenance	0.009	0.003	0.28	3.06	0.003
Self-care monitoring	0.001	0.003	0.03	0.24	0.81
Self-care management	0.007	0.003	0.22	2.21	0.03
Outcome variable: Mindful eating external cues subscale					
Model summary: $F(3, 167) = 22.65, p < 0.001, R^2 = 0.29, \text{adjusted } R^2 = 0.28$					
Constant	1.01	0.12	–	8.24	<0.001
Self-care maintenance	0.002	0.003	0.06	0.64	0.52
Self-care monitoring	0.007	0.003	0.24	2.47	0.02
Self-care management	0.009	0.003	0.31	3.30	0.001

B: unstandardized coefficient, SE: standard error of B, β : standardized coefficient, t: t-test.

that healthcare professions students have deficient ability to engage in health promoting practices, identify symptoms and bodily changes, and manage their overall health. While the scores of the three self-care scales were below the cutoff point of 70, self-care management had the lowest mean score in this study. This aligns with previous research highlighting the demanding nature of healthcare professions programs and their potential negative impact on students' well-being [1,8]. This highlights the urgent need for targeted interventions and support systems to enhance students' self-care skills and promote their overall health and wellness throughout their academic journey.

The results of bivariate correlations revealed a significant positive correlation between self-care and mindful eating scores. Students with higher self-care scores demonstrated higher levels of mindful eating. This suggests that adequate self-care practices may contribute to a more conscious

and intentional approach to eating. This finding aligns with previous research suggesting that self-care behaviors, such as maintaining a balanced diet and managing stress, are associated with healthier eating habits [23,24]. Moreover, the positive correlation between self-care self-efficacy and mindful eating underscores the importance of individuals' confidence in their ability to engage in self-care activities, including making mindful food choices.

The regression analysis further supported the hypothesis that self-care dimensions predict mindful eating among healthcare professions students. Specifically, self-care monitoring and self-care management emerged as significant predictors of the overall mindful eating, explaining a considerable proportion of the variance in mindful eating scores. These findings suggest that students who actively monitor and manage their self-care behaviors are more likely to adopt mindful eating practices. This emphasizes the importance of promoting

self-awareness and self-regulation skills among healthcare professions students to facilitate healthier dietary choices. The results of this study also suggest a differential influence of self-care dimensions on various aspects of mindful eating. For instance, self-care monitoring emerged as a significant predictor for awareness, distraction, disinhibition, and external cues, while self-care management played a more prominent role in awareness, disinhibition, emotional response, and external cues subscales of mindful eating. Discussing these findings within the context of previous research is not possible due to the lack of studies regarding the role of self-care in determining mindful eating among healthcare professions students.

4.1. Implications

These findings hold significant implications for promoting healthy eating habits and improving overall well-being among healthcare professions students. The author hopes that such understanding could help researchers to develop targeted interventions to support healthcare professions students' healthy eating habits. These interventions could incorporate strategies for improving self-care practices alongside mindfulness techniques specifically focused on fostering awareness around eating habits. Regarding healthcare curricula, healthcare professions educators can consider incorporating self-care practices into the academic programs for healthcare professions students. Workshops or training sessions focusing on self-care monitoring and management techniques could equip students with the necessary skills to manage their demanding academic workload while prioritizing their physical and mental health.

4.2. Limitations

This study provides a valuable starting point for understanding the link between self-care and mindful eating in healthcare professions students. However, some limitations need to be considered. The study employed a cross-sectional design, limiting the ability to generalize the findings. In addition, the sample was limited to healthcare professions students from one university in Jordan. Further research with more diverse samples across different healthcare professions programs and geographical locations is needed for generalizability. Another limitation of the present study was the use of the MEQ to assess mindful eating. The MEQ has been criticized for not comprehensively measuring mindful eating, and there are concerns about its

reliability and validity, despite the acceptable Cronbach's alpha values observed in this study.

5. Conclusion

This study highlights the importance of self-care in determining healthcare professions students' mindful eating behaviors. By promoting self-care and mindful eating practices, healthcare professions programs can empower students to make healthier choices while navigating the demanding academic environment. In addition, embracing a holistic approach to student wellness can foster a culture of resilience and promote long-term success in healthcare professions education and practice. This can ultimately contribute to their well-being and prepare them for the challenges and responsibilities of their future healthcare careers.

Ethics approval

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of the Jordan University of Science and Technology (Date: 23/03/2023. No.: 43/158/2023).

Conflict of interest

The author declares that he has no conflicts of interest.

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