The Relationship among Emotional Intelligence, Stress and Coping Strategies for Nursing Students

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Abstract. Emotional intelligence is a social skill that controls stress and influences one's ability to cope with the demands and environmental pressures. It can enhance professional skills in health care providers such as, nursing students. This study aimed to explore the levels of emotional intelligence and stress among nursing students of the faculty of nursing, Menoufia University, as well as their more frequent used coping strategies, and the possible association among emotional intelligence, stress and the different coping strategies. A descriptive correlational research design was used in this study. A simple random sample (409) of undergraduate nursing students at the Faculty of Nursing, Menoufia University participated in this study. Three instruments were applied, which are, Schutte Self-Report Emotional Intelligence Test", Perceived Stress Scale and Coping Strategy Inventory. The current study revealed that the majority of nursing students (73.4%) experienced moderate to high levels of stress in spite of having average and above average levels of emotional intelligence, and they tended to use engagement coping strategies than disengagement coping strategies. Likewise, students with low levels of emotional intelligence, that is, below average (24.6%) tended to utilize disengagement coping strategies. Moreover, the study discovered that emotional intelligence was higher among older students than younger students and among female students than male students.

Keywords: Emotional intelligence, stress, coping strategies, nursing students.

INTRODUCTION

Emotional intelligence (EI) is a social skill that controls stress and influences one's ability to cope with the demands and environmental pressures; therefore it can enhance professional skills in health care providers as nursing students (Kikanloo *et al*., 2019). Nursing is a profession which deals with people directly on a day to day basis. Preparing the nursing students to face future challenges is constantly a major concern of the nursing centers globally. Emotional intelligence (EI) is vital for both personal and professional spheres of life (Thomas and Natarajan, 2017).

EI has emerged across numerous disciplines and has gained attention in the nursing profession as it promotes

the well-being of nurses, which in turn influence patients and families (Raghubir, 2018). Despite numerous competing definitions and EI models, there is a general lack of understanding of EI and its overall meaning and importance. Unclear concepts can lead to a great deal of confusion and misconception when applied in practice (Raghubir, 2018). In general, EI allows nurses to create better decisions, manage their patients more effectively, improve relations, and positively influences the quality of care provided to patients and families (Renaud *et al*., 2012).

Emotional Intelligence is described as the capacity of an individual to "monitor one's own and others' feelings
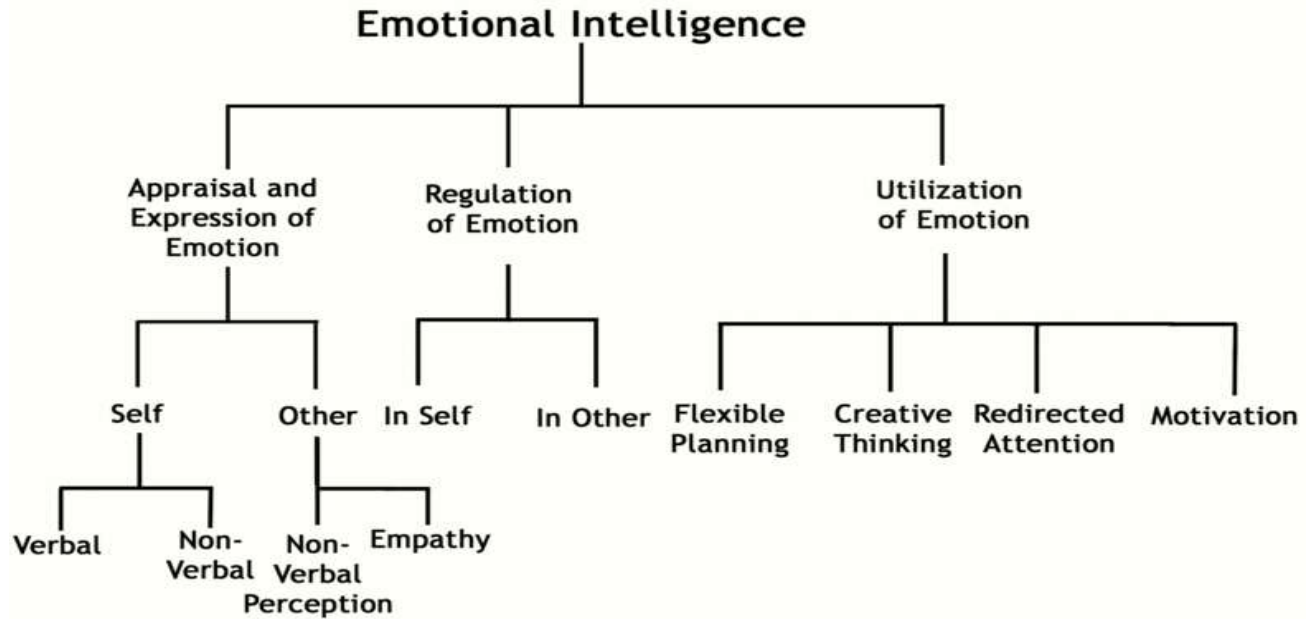
Emotional Intelligence

Figure 1. Conceptualization of emotional intelligence. Source: Salovey and Mayer (1990).

and emotion, to differentiate among them and to use the information to guide one's thinking and action" (Salovey and Mayer, 1990). EI focuses on the recognition of people's emotional state which can help in regulating behavior and solving problems. Individuals who can accurately express their emotions can easily identify and handle them properly, making it at ease to express emotions to others.

Current nursing practice includes undertaking complex procedures not only requiring technical skills, but also demands holistic care that involves the emotional, social and spiritual needs of the patient. Adequate understanding of one's own emotions and others' emotions and the ability to manage stress needs high priority while working in the health care sector (Thomas and Natarajan, 2017). EI assists nursing students to become aware of their expressed emotion and aids them in working harmoniously through their thoughts and feelings. It also helps nurses and nursing students by reducing their stress and/or burnout, and improving health while positively impacts on the patients' outcome (Birks *et al.*, 2009; Karim, 2009). EI has been found to help in coping by focusing on the recognition of people's emotional state which can assist in regulating behavior and solving problems (Asturias, 2017).

Emotion is critical to nursing practice as it influences decision-making concerning patient care and interpersonal relations with co-workers. EI theorists demand that once emotion is used while thinking or arriving at a decision, it is deemed intelligence (Smith *et al.*, 2009). Moreover, when cognition and emotion are utilized together, this can aid in handling negative emotions, simplifying rational decision making and improving relationships (Asturias, 2017).

Salovey and Mayer (1990) developed a model (Figure 1): differentiate among three wider components of EI. The first component, 'appraisal and expression of emotion' denotes to the accurate identification of own and others' emotions. The second division 'regulation of emotion' refers to "a willingness and ability to monitor, evaluate and regulate emotions" in the self, and others. Lastly, 'utilization of emotion' denotes to a set of competencies. In general, the utilization of emotion points out to an individual's ability to use emotions, and emotional knowledge (Holling, 2019).

Similar to EI, there is no agreement for the definition of the concept of stress. It has a diversity of meanings for different people under very diverse situations. The first attempt to define the concept of stress was done by Selye (1957) as cited by Fink (2016) and Rua and Perez (2019) who described it as "the non-specific response of the body to any demand". Nursing students experience a significant amount of stress related to their study or personal life. There were numerous reasons that contributed to stress for undergraduate nursing students including: academic loads; balancing work; college and home demands; unpreparedness for clinical practice and interpersonal and health issues (Gibbons, 2010). In a quantitative study, Singh *et al.* (2011) assessed the stress level and application of coping strategies of 44 undergraduate nursing students in India. The study illustrated that 63.3% of the research participants were experiencing a moderate amount of stress.

Moreover, EI has been linked to coping. Coping strategies points out to the particular efforts, both behavioral and psychological, that people use to overcome, tolerate, reduce, or minimize stressful events. These processes are thought to be important psychological

resources for adaptive intrapersonal and interpersonal emotional functioning (Moradi *et al.*, 2011). The main methods toward the process of coping discriminates three major styles: the problem-focused coping which its difference is direct function to lessen pressures or increase stress management skills; emotional-focused coping which its difference is cognitive strategies that delay solving or eliminating stress factor by giving a new name and meaning; and avoidant-focused coping style which its main characteristic is to confront stress factor (Noorbakhsh *et al.*, 2010).

In the past two decades there have been a growing number of studies focusing on the relationship of EI to perceived stress, subjective wellbeing, coping strategies, nursing competency and academic performance (Thomas and Natarajan, 2017). One-hundred and thirty Undergraduate Nursing Students (UGNS) from different nursing programs in one higher education institute in the UK contributed in the study. The authors found that UGNS with higher EI were less stressed and more able to manage emotions that emerged from the course demands. UGNS with great levels of EI were also discovered to have fewer symptoms of burnout, could simply identify anxiety and/or anger, and could trace an effective solution to a problem. In addition, they found that the most commonly used problem-focused strategy by individuals with high EI scores was efficient planning (Por *et al.*, 2011).

EI improves through time and this has been shown in a study made by Foster *et al.* (2017) including 111 nursing students registered in an Australian university. The aim of this study was to assess the EI of the applicants as they advanced through the course by employing a longitudinal repeated measure design. The results of the study showed a significant increase of 3.50 in the total EI score from Time 1 to Time 3. An increase in the score of one of the subscales of EI, managing others' emotion, was also seen to have a positive effect on the participant's weighted academic mark.

Significance of the study

It had been noticed that Undergraduate Nursing Students (UGNS) were experiencing stress and psychological distress when undertaking theoretical study and during clinical practice (Alyousef, 2019; Latif and Nor, 2019). It was also known that pressures from within the students' social context, for example, work and family commitments, had the capacity to negatively impact on their ability to succeed in their studies. Inability to cope with these competing demands may lead to stress, which can adversely affect academic performance and may result in withdrawal or delay in studies. Having a good level of EI is important in the nursing practice as well as the individual wellbeing of UGNS. Additionally, it can also assist in improving the students' capacity to deal with

stress, which may improve their academic and clinical performance (Asturias, 2017).

In Egypt, there are few published studies that examine the relationship between EI, perceived stress, and utilization of coping strategies. There is a clear gap in this area of study that can be filled by the results of this research. Besides, the finding of this study will donate to an enhanced understanding of the degree of stress that nursing students are experiencing. Hence, this study aimed at exploring the relationship among emotional intelligence, stress and coping strategies for undergraduate nursing students.

Aim of the research

This study aimed to explore the levels of emotional intelligence and stress among nursing students of the faculty of nursing, Menoufia University, as well as their more frequent used coping strategies, and the possible association among emotional intelligence, stress and the different coping strategies.

Research questions

1. What are nursing students' emotional intelligence levels at the Faculty of Nursing, Menoufia University?
2. What are nursing students' stress levels at the Faculty of Nursing, Menoufia University?
3. What are nursing students' frequent used coping strategies at the Faculty of Nursing, Menoufia University?
4. Is there a statistically significant correlation among emotional intelligence levels, stress levels, and utilization of coping strategies for undergraduate nursing students?

SUBJECTS AND METHODS

Research design, setting and sample

A descriptive correlational research design was used in the conduction of this study. The present research was implemented at the Faculty of Nursing, Menoufia University, which is affiliated to Ministry of Higher Education, Egypt. A simple random sample (409) of undergraduate nursing students enrolled in the first semester academic year 2019/2020 at the previously stated setting participated in this study. The participation was voluntary and anonymous. The students were selected from different academic years including, the first, second, third and fourth year.

Once, participant students sign the designed consent form, after presenting the aim of the study. Self-reported questionnaires were distributed to each nursing student for filling it out, each nursing student was spent 20 to 30 minutes to complete the questionnaire. The researchers

told the nursing students that all information gathered will be used only for the purpose of research, and results of the study will be published in aggregates. Voluntary participation in the study was assured to all participants as well. The data collection phase of the study was carried out in three months from 1/3/2019 to 30/5/2019. The totally distributed questionnaires were (500), and eligible questionnaires were (409). The response rate was (81.8%).

Measurement

Three tools were applied in this research in addition to the socio- demographic data. These were "The Schutte Self-Report Emotional Intelligence Test" (SSEIT), The Perceived Stress Scale (PSS) and Coping Strategy Inventory – Short Form.

Instrument I

It consisted of two portions as the following:

Part I: Socio- demographic data

This instrument was designed by the researchers to gather the socio- demographic data of the study participants (such as; age, sex, academic year, mother's level of education and work, father's level of education and work, order in the family and living with the family).

Part II: Schutte Self-Report Emotional Intelligence Test (SSEIT)

The Schutte Self-Report Emotional Intelligence Test (SSEIT) was used to assess the nursing students' general emotional intelligence. The tool was developed based on the first pattern of emotional intelligence (Salovey and Mayer 1990). It is a self-administered scale formed of 33 descriptive sentences. Each item is rated on a five-point Likert scale ranging from '1' (Strongly Disagree) to '5' (Strongly Agree). The 33 items represented the conceptual model of emotional intelligence (EI) namely: "appraisal and expression of emotion (13 items)", "regulation of emotion (10 items)" and "utilization of emotion (10 items)".

The total EI score ranges from (33 to 165), which is the sum of all responses in this scale. Scores below 110 are usually considered lower than average EI, scores from 110 to 138 denotes average EI level and scores higher than 138 are usually considered above average EI (Malouff, 2014). The reliability of this scale has been ascertained in several studies showing a Cronbach's alpha of 0.90 (Ciarrochi *et al.*, 2001; Jonker and Vosloo,

2008; Schutte *et al.*, 1998).

Instrument II: The Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) was used to examine the participants' level of perceived stress. It is a 10-item scale that is planned to explore the extent to which the participants found their lives uncontrollable, overloaded or unpredictable over the past 30 days (Cohen *et al.*, 1983). Each item is rated on a five-point Likert-type scale, from '1' (Never) to '5' (Very Often), to indicate how many times the participant had encountered a stressful situation. The total score is achieved by adding the score for each question, which range from (10-50). Scores from 10 to 29 denotes low stress level, scores from 30 to 37 indicates moderate stress level and score from 38 to 50 means high stress level. The reliability of this scale has been verified in three diverse studies showing reliability with a Cronbach's alpha coefficient of .84, .85, and .86 (Cohen *et al.*, 1983).

Instrument III: Coping Strategy Inventory – Short Form

The Coping Strategy Inventory – Short Form (CSI-SF) was utilized to examine the participants' chosen coping strategies and their behaviors during stressful situation. This scale adopted from Tobin *et al.* (1984). It has eight primary subscales which are: problem solving, cognitive restructuring, express emotions, social contact, problem avoidance, wishful thinking, self-criticism and social withdrawal; four secondary subscales: problem focused engagement, emotion focused engagement, problem focused disengagement and emotion focused disengagement; and two tertiary subscales: engagement and disengagement (Tobin *et al.*, 1984).

This instrument utilized five- point Likert scale ranging from 1 (Never), 2 (Rarely), 3 (Sometimes), 4 (Often) to 5 (Always) to indicate the degree that participants elicited a specific response. The reliability of this scale was tested by using Cronbach's alpha coefficient for the eight primary subscales of CSI-SF was determined as $\alpha = .70$, with a Cronbach's alpha of $\alpha = .80$ for the four secondary subscales, and $\alpha = .90$ for the two tertiary subscales (Tobin *et al.*, 1984). The tools were clear, comprehensive, and applicable.

Tool validity

The data collection tools were translated into Arabic and reviewed for content validity by 5 experts specialized in the field of nursing administration and mental health nursing to test content validity of the tools. Modification was carried out according to the panel' judgment on clarity of sentences and appropriateness of content.

Table 1. Socio-demographic characteristics of participant nursing students (N = 409).

Characters	N.	%
Age (years)		
18 - 20	251	61.4
21 – 23	158	38.6
Mean ± SD	20.0 ± 1.4 years	
Gender:		
Male	178	43.5
Female	231	56.5
Academic year		
First	109	26.8
Second	100	24.4
Third	100	24.4
Fourth	100	24.4
Father education		
University education	173	42.4
Secondary education	192	46.9
Basic education	41	10
Illiterate	3	0.7
Father work		
Yes	351	85.8
No	58	14.2
Mother education		
University education	143	35
Secondary education	232	56.7
Basic education	23	5.6
Illiterate	11	2.7
Mother work		
Yes	152	37.2
No	257	62.8
Order in the family		
First – Second	244	59.7
Third and more	165	40.3
Living with the family		
Yes	404	98.8
No	5	1.2
Total	409	100

Ethical approval

The study was approved by an ethical research committee of the Faculty of Nursing, Menoufia University. An agreement to conduct the study was obtained from Dean of the Faculty of Nursing, Menoufia University.

Data analysis

Data were reviewed, coded, entered, analyzed and tabulated using Statistical Package of Social Sciences (SPSS) version 25. Both descriptive statistics (frequency, percentage, mean and standard deviation) and inferential statistics (Pearson correlation test, chi-square test and independent t test were used appropriately according to the type of variables. The level of statistical significance was established in 0.05.

RESULTS

Participants

Results showed that the majority of studied nursing students (56.5%) were females. Nearly about two thirds of them (61.4%) were younger age group from 18 to 20 years with a mean of 20 ± 1.4 years. More than a quarter of them (26.8%) were in first academic year (Table 1).

Emotional intelligence levels, stress levels and coping strategies

Answering current study' first research question revealed that the majority of nursing students (61.6%) had average level of emotional intelligence. Approximately, one quarter of them (24.7%) had below average level of emotional intelligence, and only (13.7%) of them had above average level of EI. The mean total EI score was (1201 ± 17.7) (Figure 2).

Table 2 demonstrated that the majority of nursing students (57%) perceived moderate stress level, and the minority of them perceived high level of stress (16.4%), with a mean of 32.5 ± 6.5.

Table 3 illustrated descriptive statistics for coping strategies among nursing students. Regarding, engagement coping strategies dimensions, the highest mean scores (14.5 ± 3.3 and 13.4 ± 3.6 respectively) were for cognitive restructuring and problem solving. While, the total engagement coping strategies' mean score and SD were 53.8 ± 10.3. Concerning, disengagement coping strategies dimensions, the highest mean score (14.3 ± 3.5) was for wishful thinking. Whereas, the total disengagement coping strategies' mean score and SD were 50.9 ±10.6. This result means that nursing students use engagement coping strategies than disengagement coping strategies (Table 3).

Relationship among emotional intelligence, stress and coping strategies

Table 4 showed the effect of emotional intelligence from nursing students' perspective on their perceived stress. Approximately, more than one third of nursing students
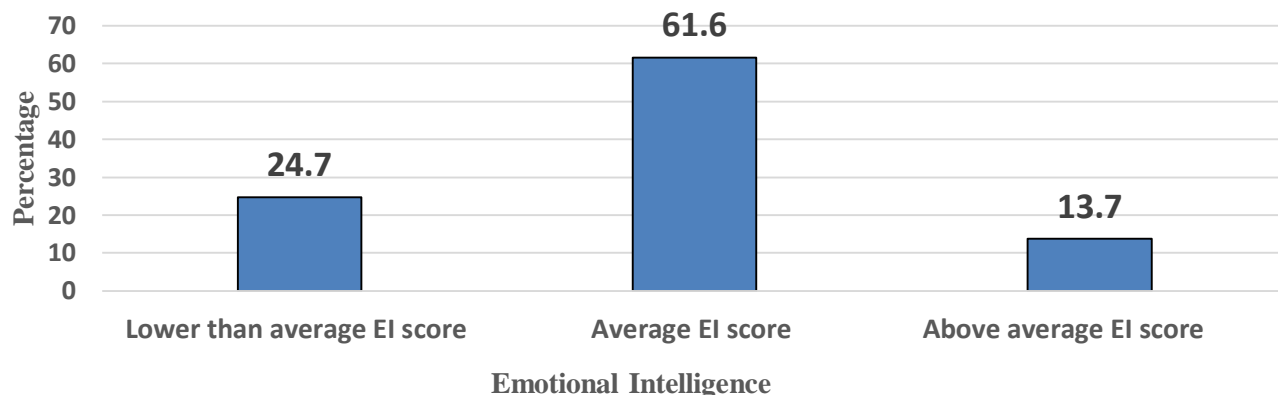
Figure 2. Levels of emotional intelligence among nursing students at Faculty of Nursing, Menoufia University (N = 409). * X ± SD = 120.1 ± 17.7.

Table 2. Levels of perceived stress among nursing students at the Faculty of Nursing, Menoufia University (N = 409).

Levels of stress	N.	%
Low stress (10-29)	109	26.6
Moderate stress (30-37)	233	57
High stress (38-50)	67	16.4
Total	409	100
X ± SD (Total Perceived Stress)* =	32.5 ± 6.5	

Table 3. Descriptive statistics for engagement and disengagement coping strategies subscale among nursing students (N = 409).

Variables	Mean	SD
Coping strategies		
Engagement coping strategies subscale		
Problem solving	13.4	3.6
Cognitive restructuring	14.5	3.3
Express emotion	12.3	3.1
Social contact	13.5	3.9
Total engagement coping strategies	53.8	10.3
Disengagement coping strategies subscale		
Problem avoidance	12.5	3.6
Wishful thinking	14.3	3.5
Self-criticism	12.3	3.5
Social withdrawal	11.8	4.0
Total disengagement coping strategies	50.9	10.6
Total coping strategies	104	17.7

(38.8%) who had an average emotional intelligence levels were moderately stressed in their life. In addition, only (**7.57** %) of nursing students with above average EI were also moderately stressed in their life. Moreover, nearly one tenth of nursing students (10.5%) with lower than average EI score were moderately stressed, too. There was a highly significant difference between different EI levels and perceived stress levels among studied nursing students (P = 0.003) (Table 4).

Table 5 demonstrated the relation between emotional intelligence and coping strategies (engagement and disengagement) among nursing students. Students with above average, as well as average, EI levels had higher mean of engagement coping strategies than disengagement

Table 4. Relation between emotional intelligence and perceived stress among nursing students (N = 409).

Total emotional intelligence score	Perceived Stress						Total		P value
	Low stress (10-29)		Moderate stress (30-37)		High stress (38-50)				
	N.	%	N.	%	N.	%	N.	%	
Lower than average EI score(33-109)	41	10.2	43	10.5	17	4.2	101	24.6	X^2=16.3, P=0.003 HS
Average EI score(110-138)	55	13.4	159	38.8	38	9.3	252	61.6	
Above average EI score (139-165)	13	3.17	31	7.57	12	2.9	56	13.6	
Total	109	26.6	233	57	67	16.4	409	100	

Table 5. The relation between emotional intelligence and coping strategies (engagement and disengagement) among nursing students (N = 409).

Total emotional intelligence score	Coping strategies			
	Engagement coping strategies		Disengagement coping strategies	
	Mean ± SD	P value	Mean ± SD	P value
Lower than average EI score (33-109)	45.8 ± 9.2	F = 90.27,	48.8 ± 10.9	F = 4.39,
Average EI score (110-138)	54.6 ± 8.4	P=0.000	51.1 ± 9.6	P=0.01
Above average EI score (139-165)	64.8 ± 8.3	HS	53.9 ± 10.6	Sig.
Total	53.8 ± 10.3	t=3.68, P = 0.012	50.9 ± 10.6	

coping strategies which represented by mean and SD (64.8 ± 8.3 and 53.9 ± 10.6, as well as 54.6 ± 8.4 and 51.1 ± 9.6, respectively). This means that nursing students with higher emotional intelligence levels utilized engagement coping strategies than disengagement coping strategies. Unfortunately, nursing students with lower than average emotional intelligence score utilized disengagement coping strategies than engagement coping strategies (48.8 ± 10.9 and 45.8 ± 9.2, respectively) (Table 5).

Table 6 revealed that female students of older age group (21 to 23 years) in third academic year had higher mean of total EI score (124.2 ± 13.2, 123.4 ± 12.4 and 123.9 ± 15.9 respectively), compared to male, younger age group, and first academic year. This difference was high significant statistically (p < 0.001 for each). On the other hand, female students had higher significant mean total score of both perceived stress and coping strategies (33.1 ± 4.8 and 107.8 ± 13.9 respectively) (Table 6).

Table 7 revealed that there were positive highly significant associations between EI as an independent variable, perceived stress score (r = 0.316, p ≤ 0.001), and each of the engagement coping strategies (p < 0.001 for each) as well as total engagement strategies score (r = 587, p < 0.001), as dependent variables. Cognitive restructuring was the highest engagement strategy association (r = 0.520, p ≤ 0.001), followed by problem solving (r = 0.484, p < 0.001), while express emotion was the least associated strategy with EI (r = 0.286). Regarding disengagement coping strategies, the correlations were lower, with wishful thinking was the highest significant statistically association (0.292, p < 0.001), followed by problem avoidance strategy (r = 0.151, p = 0.002). There

were no association between EI and both self-criticism and social withdrawal strategies (r = 0.075, p = 0.132), and (r = -0.006, p=0.902) (Table7).

DISCUSSION

Emotional intelligence skills can help nursing students' coping with the emotional demands of the healthcare environment which can be stressful and exhausting and may possibly result in burnout easily. In recognizing the importance of EI as a prerequisite for effective nursing leadership, competent nursing performance and quality clinical outcomes, the results of the reviewed researches provide support that "undergraduate nursing education must deliver a learning environment that emphasizes the importance of emotional intelligence by fostering and facilitating the improvement of these qualities" (Thomas and Natarajan, 2017).

Emotional intelligence levels among nursing students

The findings of the present study revealed that the majority of participant nursing students (75.3%) had either an average or above average levels of emotional intelligence. These results were consistent with Asturias (2017) who mentioned that 89.7% of participants students had an average and above average level of EI. Furthermore, this finding was congruent with Mohamed (2019) who stated that the majority of nursing students had average levels of emotional intelligence. Additionally, the level of EI presented by the participants in this study

Table 6. Relation among socio-demographic characteristics, emotional intelligence, perceived stress, and coping strategies for participant nursing students (N = 409).

Characters	N.	Emotional Intelligence		Perceived Stress		Coping Strategies	
		X ± SD	p	X ± SD	p	X ± SD	p
Age (years)			t=3.8,		t=3.1,		t=3.7,
18 - 20	251	117.5 ± 19.6	P=0.000	31.7 ± 7.1	P=0.000	102.2 ± 18.8	P=0.000
21 – 23	158	124.2 ± 13.2	HS	33.8 ± 5.2	HS	108.7 ± 14.8	HS
Gender			t=4.4,		t=2.0,		t=4.0,
Male	178	115.7 ± 22.1	P=0.000	31.8 ± 8.2	P=0.02	100.8 ± 21	P=0.000
Female	231	123.4 ± 12.4	HS	33.1 ± 4.8	Sig.	107.8 ± 13.9	HS
Academic year							
First	109	116.4 ± 21.2		31.5 ± 7.8	F=2.4,	102.9 ± 19.5	F=1.9,
Second	100	117 ± 18.9	F=5.3,	32.3 ± 6.5	P=0.07	104.2 ± 14.9	P=0.13
Third	100	123.9 ± 15.8	P=0.001	32.4 ± 5.5	NS	103.7 ± 19.7	NS
Fourth	100	123.3 ± 11.9	HS	33.9 ± 5.7		108.8 ± 15.6	
Mother work			t=2.03,		t=1.4,		t=0.26,
Yes	152	117.8 ± 18.1	P=0.04	33.1 ± 6.2	P=0.15	105 ± 17.1	P=0.78
No	257	121.4 ± 17.3	Sig.	32.1 ± 6.7	NS	104.5 ± 18.1	NS
Order in Family			t=0.74,		t=1.4,		t=0.26,
First – Second	244	120.6 ± 16.6	P=0.45	33.1 ± 6.9	P=0.15	105 ± 17.1	P=0.45
Third and more	165	119.3 ± 19.3	NS	31.9 ± 5.9	NS	104.5 ± 18.1	NS
Total	409	100					

HS = High significant; NS = Not significant

Table 7. Correlation coefficient between students' emotional intelligence and their coping strategies categories, as well as perceived stress (N = 409).

Coping strategies categories and perceived stress	Emotional intelligence	
	r	p
Engagement Coping Strategies		
Problem solving	0.484	0.000
Cognitive restructuring	0.520	0.000
Express emotion	0.286	0.000
Social contact	0.422	0.000
Total Engagement strategies score	0.587	0.000
Disengagement Coping Strategies		
Problem avoidance	0.151	0.002
Wishful thinking	0.292	0.000
Self-criticism	0.075	0.132
Social withdrawal	-0.006	0.902
Total Disengagement strategies	0.147	0.000
Total Perceived Stress Score	0.316	0.000

Note: r = Pearson correlation coefficient

were in line with previous studies (Talman *et al.*, 2020; Mahmoud *et al.*, 2013; Benson *et al.*, 2010; Ebstein *et al.*, 2018**;** Turan *et al.*, 2019).

Furthermore, Manjusha *et al.* (2017) depicted that 52.7% of nursing students had average emotional intelligence, 31% had poor and 15.6% of them had good

emotional intelligence. However, the result revealed that graduate nursing students lack emotional competencies that are essential for success and effective performance in present chaotic and challenging work environment.

Perceived stress levels among nursing students

The findings of the present study show that the majority of studied nursing students (57%) experienced moderate stress level. This finding may be related to increasing academic loads; school and home demands; unpreparedness for clinical practice; social issues and public' negative image about the nursing profession. This result was supported by Asturias (2017) who stated that the majority of nursing students (88.60%) were experiencing moderate to high levels of stress. Likewise, nursing students experienced moderate academic and practice stress (Tarsuslu *et al.*, 2020). Meanwhile, the moderate level of stress experienced by nursing students in this study were in the same line with previous studies (Yehia *et al.*, 2016; Shdaifat *et al.*, 2018; Madian *et al.*, 2019).

The findings of the current study revealed that only 16.4% of nursing students had high level of stress. These findings were consistent with Papazisis *et al.* (2008) and Yehia *et al.* (2016) who decaled that 12.4 and 12.2% respectively of nursing students reported high levels of stress. Though, this finding was contradicted with Amr *et al.* (2011) who stated that 40.2% of nursing students reported high stress level.

Coping strategies among nursing students

The findings of the current study illustrated that nursing students use engagement coping strategies than disengagement coping strategies. This finding was in the same line with Asturias (2017) who reported that most participants tended to utilize engagement coping strategies, in contrast to disengagement coping strategies. Though, this finding was contradicted with Hirsch *et al.* (2015) who mention that the coping strategy most used by nursing students was escape. This strategy focuses on emotions, solves little, and is not very effective in managing the stressor.

Association between emotional intelligence and perceived stress

The finding of this study depicted that there was a strong positive correlation between total score of EI and total score of perceived stress among nursing students. This unexpected result may be due to the difficulty of studying in the college, excessive academic loads and the merging between the theoretical and practical parts. In

addition to studying in English language, which is not a basic language for nursing students. This finding was in the same line with Asturias (2017) who declared that though a large percentage of nursing students had average to above average EI levels, many participants still have experienced high levels of stress and psychological distress.

However, this finding was contradicted with Rua and Perz (2019) who noted that they found evidence that EI and perceived stress are negatively related. In addition, higher EI was associated with lower perceived stress, and this relationship was partially mediated by both adaptive and maladaptive coping responses. Higher EI was associated with greater use of adaptive coping and lower use of maladaptive coping, and these, in turn, were negatively and positively (respectively) associated with perceived stress (Enns *et al.*, 2018). In the same context, a statistically significant negative correlation was found between EI and stress ($r = -.22$, $p = <.001$), and a statistically significant positive correlation was found for EI and psychological distress ($r = .25$, $p = <.001$) (Asturias, 2017).

Moreover, the finding was in contrast with Birks (2009) who noted that the relationship of EI with stress and how EI can help manage or lower stress levels. Nevertheless, because of the correlational nature of the study, they cannot conclude the direction of any causal connection. It may be that as people get more stressed, their EI scores decrease, or that as EI scores decrease for whatever reason, stress increases. Likewise, Klainin-Yobas *et al.* (2014) reported that participants were less likely to experience stress when they had average to high EI levels. This could be attributed to the connection between EI and coping strategies in dealing with stress.

Relationship between emotional intelligence and coping strategies

The finding of the present study discovered a statistically significant positive association between EI and the four engagement coping strategies. Moreover, nursing students with above average EI levels preferred to use engagement coping strategies than disengagement coping strategies. Among the four coping strategies, cognitive restructuring was found to have the strongest relationship with EI (r = 1.391, p = <0.001), followed by problem solving (r = 1.252, p ≤ 0.001). This finding was in agreement with Asturias (2017) who stated that the analysis showed a statistically significant positive association between EI and the four engagement coping strategies. Among the four coping strategies, cognitive restructuring was found to have the strongest correlation with EI ($r = .52$, $p ≤ .001$), followed by problem solving ($r = .47$, $p ≤ .001$).

In the same context, the result was conformed with Noorbakhsh *et al.* (2010) who reported that emotional

intelligence was positively associated with problem-focused and emotion-focused stress coping styles. Meanwhile, Moradi *et al.* (2011) mentioned that emotional intelligence had positive association with problem-solving coping strategies, social support, cognitive appraisal, and emotional inhibition of positive relationship. Engagement coping strategies are used by a person to actively manage problems in a stressful situation, while disengagement coping strategies enable an individual to actively move away and avoid the problem or stressful situation (Dijkstra and Homan, 2016).

Moreover, the current study shown that students with low level of EI tended to utilize disengagement coping strategies. This finding was supported with Por *et al.* (2011) who reported that participants with lower levels of EI often linked to the utilization of escape-avoidance coping strategies. Likewise, Asturias (2017) noted that participants who had a low level of EI were more likely to apply disengagement coping strategies.

In addition, Kim and Han (2015) stated that emotional intelligence had a positive relationship with problem-solving coping and social support seeking coping strategies. The positive relationship of emotional intelligence elements, such as problem-solving and social support seeking were in agreement with the findings of some studies. These results confirmed the findings of the present research and were consistent with the results and necessities of findings of former research in relation with EI (Moradi *et al.*, 2011; Por *et al.*, 2011; Kim and Han, 2015).

Furthermore, Rua and Perz (2019) revealed that the newly hired nurses were emotionally intelligent and used problem focused coping to deal with stress. However, reported stress levels were higher for their nurses (M 65.6, SD 15.7) than in related nursing studies by Escot *et al.* (2001) (M 39.8, SD 8.18), Isikhan *et al.* (2004) (M 31.00, SD not reported), and Le Sergent and Haney (2005) (M 48.70, SD 5.53). In the same track, Moradi *et al.* (2011) indicated that emotional intelligence had positive association with problem-solving coping strategies.

Relationship between emotional intelligence and socio-demographic characteristics

The results of the present study discovered that emotional intelligence was higher among older students than younger students. From researchers' point of view, the results can be explained by the fact that older students had more experiences, tasks, skills and responsibilities. In addition to that, nursing students in the third and fourth year learn new subjects like nursing administration, scientific research, community health nursing and psychiatric nursing which are associated with teaching scientific problem-solving, critical thinking, coping strategies, therapeutic communication skills and

social competencies. This result was in the same track with Goleman (2004) who indicated that the level of EI improves as one grows older. Moreover, the present finding was disagreed with Asturias (2017) who stated that the level of EI was not seen to be related to the age of the participants.

The present study's finding revealed that female students had higher level of emotional intelligence than male students. This finding was supported with Asturias (2017) who reported that female students scored a slightly higher level of EI than male students. However, no significant differences were found between males and females among professional groups for the EI measure (Birks, 2009).

Moreover, higher EI has been positively associated with increased work performance, social competencies, well-being, physical and mental health. Whereas, lower EI has been associated with impaired social skills and problems in interpersonal relationships (Pekaar *et al.*, 2018). Similarly, educating emotional intelligence skills has an effect on behavioral responses to stress in nursing students (Kikanloo *et al.*, 2019). Also, an emotional intelligence intervention may support improvements in perceived stress and communication skills among nursing students (Meng and Qi, 2018).

Relationship between perceived stress and socio-demographic characteristics

The results of current study revealed that fourth year students had a higher level of stress than first year students. This result can be explained by the fact that most nursing students in the last year of school are keen to graduate and get the highest marks to find a distinguished job or to have a travelling opportunity. This finding was in aligned with Alshutwi *et al.* (2020) who mentioned that when the students were in a higher year of study, their stress level increased. Conversely, this finding was not matching with the results of Eldeeb and Eldosoky (2016) who revealed that third level students had higher mean stress scores than eighth level students.

CONCLUSION

The current study revealed that the majority of nursing students (73.4%) experienced moderate to high level of stress in spite of having average and above average levels of EI. The nursing students with higher EI level tend to use engagement coping strategies than disengagement coping strategies. Likewise, students with low levels of emotional intelligence, that is, below average (24.6%) tended to utilize disengagement coping strategies. Moreover, the study discovered that emotional intelligence was higher among older students than

younger students and among female students than male students. In addition, fourth year students had higher levels of stress than first year students. Furthermore, there was a strong positive correlation between total score of emotional intelligence, total score of perceived stress and utilization of engagement coping strategies among nursing students. Further studies should consider mixed methods approach in order to achieve an in-depth understanding of the relationship between EI and stress among nursing students. Stress management program is required especially for students with low emotional intelligence levels and utilized disengagement coping strategies.

Limitations

The most notable limitation of the present study was that all data in this study was obtained through cross-sectional, self-reported surveys, which could lead to common method variance between predictor variable and outcome variables. Moreover, the sample was taken from one nursing collage only. Therefore, selecting sample from different nursing collages recommended for future studies to generalize the findings.

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