

Emotional Intelligence among Baccalaureate Students at the Faculty of Nursing, Alexandria University, Egypt: A Cross-sectional Study

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Abstract

Emotional intelligence (EI) is seen as a necessity in health care practices, especially the nursing practice. Assessing levels of EI and ascertaining its progression among nursing students is essential for ensuring effective nursing education and competent professional nursing skills before graduation. This study aimed at assessing the level of emotional intelligence among baccalaureate students at the Faculty of Nursing, Alexandria University, and determining its development over the academic semesters. The study followed a cross-sectional descriptive design. It was conducted at the Faculty of Nursing, Alexandria University, on 450 randomly selected students who registered in four semesters. A Socio-demographic and Academic Data Questionnaire, and Emotional Intelligence Scale, were used to collect data. The results indicated that the majority of the studied students in the four semesters had moderate levels of EI. The mean score of EI of the eighth semester's students was slightly increased by the end of the same semester. It was recommended that the student's level of EI should be considered prior to entrance into the Faculty of Nursing, and EI concept should be incorporated into the nursing curriculum.

Keywords: Emotional intelligence, Nursing students, Nursing education.

1. Introduction

Emotions are complex psychological reaction patterns, involving behavioral and physiological elements, to personally significant events (Keltner & Lerner, 2009). They have a profound influence on one's thought, perception and behavior (Smith, Profetto-McGrath, & Cummings, 2009). The intelligent use of emotions can provide a balance needed for more healthy life (Goleman, 1997). It can guide thinking and behavior to enhance the outcomes in a given situation, and to make effective formally developed decisions (Radford, 2010; Sparrow & Knight, 2006). Through this intelligent interaction of emotion and thought, the concept of emotional intelligence is emerging (Ciarrochi & Mayer, 2007; Grewal & Salovey, 2005).

Emotional intelligence (EI) is a generic competence in perceiving emotions both in one and in others. This competence helps the individual to regulate his emotions and cope effectively with emotive situations (Faralli, 2009). EI refers to the ability to monitor one's own and others' feelings and emotions, discriminate among them and use information to guide one's thinking and action (Salovey & Mayer, 1990). Several models described and measured the notion of emotional intelligence (Goleman, 1995; Mayer, Salovey, & Caruso, 2000). However, the more practical model was introduced by Goleman (1995). It focuses on integrating an individual's cognitive abilities and personality competencies and applying the corresponding effects on the workplace performance and success (Goleman, 1995). Therefore, it is the most comprehensive and widely accepted model of EI (Culver, 1997; Goleman, 1997; Goleman, McKee, & Boyatzis, 2002). Goleman (1998) defined EI as the capacity for recognizing one's own feelings and those of others, motivating oneself and others, and managing emotions well in oneself and in relationships. He suggested that emotionally intelligent individuals excel in human relationships, exhibit marked leadership skills, and perform well at work. Consequently, success in the workplace is being determined more by EI than IQ (Goleman, 1995).

According to Goleman (1998), EI encompasses five main elements; *self-awareness*, *managing emotions*, *motivation*, *empathy*, and *social skills*. These five emotional elements or competencies are further defined as each level builds upon the previous one which gives the construct of EI. *Self-awareness* is the first element of emotional intelligence. It is the ongoing attention to one's internal states, including the emotions (Goleman, 1997). Self-awareness means knowing when feelings are present in the self and others, and being able to label feelings with specific feeling words. At its highest level, it means being able to predict feelings in advance (Hein,

2012). *Managing emotions, also called self-regulation*, is the second element of EI. It refers to the ability to change one's mood through handling the emotions that facilitate rather than interfere with actions, and recovering well from emotional stress occurs (Goleman, 1998). Managing emotions is also concerned with understanding interpersonal feelings as an essential tool for successful and fulfilling life, and for supportive and collaborative relationships (Culver, 1997; Goleman, 1997). The third element of EI is *motivation* which defined as using one's deepest performance to move toward achieving goals and to strive to improve and grow (Culver, 1997; Goleman, 1998). Motivation fosters the emotional tendencies that guide or facilitate reaching goals and keeping the person striving to improve or meet a standard of excellence, aligning with the goals of the group, readiness to act on opportunities and persistence in pursuing goals despite obstacles and setbacks (Cherniss et al., 1998; Ghoniem et al., 2011). *Empathy*, the fourth element of EI, refers to the ability to understand the emotional make-up of other people and the skills in treating people according to their emotional reactions. Empathy requires examination of one's own feelings and those of others in a circular reaction that results in experiencing the feelings of another by recognizing them through behavioral cues (Ghoniem et al., 2011; Ioannidou & Konstantikaki, 2008). Expressing the feelings is a key social competence, and *social skills* are the last element and a fundamental part of emotional intelligence. It includes the abilities to handle emotions in relationships well and accurately manage social interactions, work with others toward shared goals, and built positive interpersonal relationships (Culver, 1997). These five elements of EI are applied in different areas of life where individuals need effective communication with self and others, and knowing when, to whom and how to express emotions (Larin et al, 2011). More specifically, EI is more vital in health care practices, especially the nursing practice. In nursing, EI was defined as a nurse's constructive ability to use self-awareness, empathy, and emotional regulation that facilitates and hallmarks the essence of proficient caring and nursing. In order to deliver effective nursing interventions, meet the caring needs of patients, and deal with different clinical issues and job stressors, modern health care systems need professional nurses who are emotionally intelligent (Ball, 2009).

Emotional intelligence can assist nurses in managing their own and their patients' emotions, showing genuine emotional responses, being empathetic and communicate emotions without introducing conflict and managing instinctive emotions, such as disgust, annoyance and frustration, in nurse-patient interactions. By trying to view the situation from patients' perspectives and empathizing with their emotions, nurses can manage many clinical situations (Pence, 2010). When patients are cared for by a nurse who demonstrates EI skills, they feel that the nurse is actually concerned about their welfare and health, which is the essence of nursing and caring (Antony et al., 2011; Kooker, Shultz, & Codier, 2007). In this respect, McQueen (2004) pointed out that the modern demands of nursing depend on the nurse's skills of emotional intelligence to achieve a better patient-centered care.

In order to adequately prepare professional graduate nurses, nursing students should have the ability to understand the views and needs of a wide variety of people, remain sensitive and empathic to patient concerns, be able to keep personal emotional reactions in perspective, handle stress, and promote social responsibility. All these concepts encompassed within the framework of emotional intelligence (Ball, 2009; Beauvais, Brady, & O'Shea, 2011; McQueen, 2004). Nursing students are required to manage numerous clinical situations, adapt to the different teaching styles and expectations of instructors, work independently toward objectives, and manage conflicts. In addition, some aspects of academic work may be considered highly stressful, such as taking exams and practicing nursing procedures in health care settings. These situations require high levels of emotional management (Beauvais, Brady, & O'Shea, 2011; Ergur, 2009; Pence, 2010).

Emotional intelligence skills can prepare students for delivering emotionally competent nursing practice, facilitating communication and decision making (Duygulu, Hicdurmaz, & Akyar, 2011; Smith, Profetto-McGrath, & Cummings, 2009). It also helps them adapt to their changing clinical environment, feel valued, and be satisfied and motivated (McQueen, 2004). While nursing programs at the Faculty of Nursing, Alexandria University may not provide a formal course in EI, different courses across the eight semesters of nursing study emphasize the emotional aspects of providing nursing care. Nursing students are often expected to understand the patients' emotions, and use cognitive information to assess patients' needs, and then display emotional interventions that convey caring, and empathy toward patients and their families (Hein, 2012). Accordingly, this study aimed to assess the level of emotional intelligence among baccalaureate students at the Faculty of Nursing, Alexandria University, and determine its development over the academic semesters.

2. Research Questions:

- What are the levels of emotional intelligence among baccalaureate students at the Faculty of Nursing, Alexandria University?

- Does the emotional intelligence of these students progress along different academic semesters?

3. Methodology

3.1 Research Design:

A cross-sectional descriptive design was used for the current study.

3.2 Setting:

The study was conducted at the Faculty of Nursing, Alexandria University. The Faculty of Nursing follows the credit hours system in which the curriculums were distributed along eight semesters and at the same time the admission to the Faculty is yearly. The academic year encompasses two terms; the first term constitutes the first, third, fifth and seventh semesters, and the second term constitutes the second, fourth, sixth and eighth semesters.

3.3 Subjects:

The present study was held at the second term of the academic year 2011-2012. The total number of the students enrolled at the Faculty during this academic year amounted to 899 registered students. A representative sample (50%) of the registered students was randomly selected using simple random sampling method. It amounted to 450 students registered in the second, fourth, sixth, and eighth semesters.

3.4 Data Collection Tools:

Two tools were used to collect data for this research:

- Tool 1: A Socio-demographic and Academic Data Questionnaire: This tool was developed by the researchers to elicit information about the socio-demographic and academic characteristics of the studied subjects such as student's age, sex, residence, and the current academic semester.
 - Tool 2: Emotional Intelligence Scale (EIS): The Emotional Intelligence Scale (EIS) was originally developed by Hunsaker (2001) to assess emotional intelligence in workplace. Then, it was adapted by Vanderpol (2011) to assess the degree of emotional intelligence of different populations. The scale consists of 25 items, which are rated on a five-point Likert scale that ranges from 1 (very slight ability) to 5 (extreme ability). The EIS includes five components which are *self-awareness*, *managing emotions*, *motivation*, *empathy*, and *social skills*. The total score of EIS is ranging from 25 to 125, with a score ranging from 101 to 125 indicating high, from 50 to 100 indicating moderate, and below 50 indicating low emotional intelligence.
- Official permissions were obtained from the responsible authorities of the Faculty of Nursing, Alexandria University.
 - The Socio-demographic and Academic Data Questionnaire (tool 1) was developed by the researcher. Then, the Emotional Intelligence Scale (tool 2) was translated into Arabic language. After that, a jury composed of five experts in the psychiatric nursing field examined the content validity of tool (1), and the translated tool 2 (EIS).
 - The internal consistency and reliability of the second tool (EIS) was done on 25 registered students in the fourth academic semester who were not included in the study subjects using Cronbach's Alpha coefficient test. Tool (2) proved to be reliable ($\alpha = 0.929$).
 - Before embarking on the actual study, a pilot study was carried out on 20 registered students in sixth semester who were not included in the study subjects.
 - Half (450 students) of the total number of registered students in each semester was randomly included in the study. They were met on a group basis in their classes at the beginning of the second, fourth, sixth and eighth semesters, during the theoretical parts (lectures) of nursing courses, to explain the purpose of the study, reassure them about anonymity and confidentiality of their responses, and then instructions regarding answering the study tools were given.
 - The tool (1) and (2) were administered to the students. The students' answering of the study tools was attended by one of the researchers to ensure that all information pertaining the sheets was completed.
 - By the end of the eighth (last) semester, the students registered in this semester were met again on a group basis in their classes for the second time to reassess their emotional intelligence using tool 2 (EIS).

3.5 Ethical considerations:

- Informed oral consent was obtained from the nursing students after explanation of the purpose and importance of the study, and reassuring them that these responses would no affect their grades.
- Confidentiality of any obtained information was ensured.
- Anonymity of the study subjects was assured.

3.6 Statistical Analysis:

- The Statistical Package for Social Sciences (SPSS) program, version 18.0 was used for data analysis. Descriptive statistics, correlation coefficients and multiple analyses of variance were used to answer the research questions.
- Descriptive statistics (frequency, percentage, minimum, maximum, arithmetic mean and standard deviation) were used to describe characteristics of the subjects, including socio-demographic and academic characteristics and the levels of emotional intelligence among baccalaureate students at the Faculty of Nursing, Alexandria University.
- T-test and F- test were used to compare two means.
- Chi-square test was used to test for the association between the categories of two independent samples (row and column variables).
- Monte Carlo test was used to as an alternative for chi-square test if there were many small expected values.
- The statistical significant level in this study was (p) less than 0.001 and 0.05.

4. Results

Table (1) describes socio-demographic and academic characteristics of the studied students. More than three-quarters (76.7%) of the studied students were females, with a mean age of 20.26 ± 1.46 years, and 65.3 % of the studied students were living in urban areas. Around one third of the studied students registered in the eighth, and sixth semesters (38 % and 32.2% respectively), while the rest of studied students registered in second and fourth semesters (20% and 9.8% respectively). Concerning studied students' last obtained Grade Point Average (GPA), more than one quarter (27.3% and 25.6%) of the studied students obtained grade B and C+ respectively.

Table (1): Socio-demographic and academic characteristics of the studied students:

Variables	No	%
Sex		
Male	105	23.3
Female	345	76.7
Age		
18-20 years	267	59.3
>20 years	183	40.7
Min. – Max.	<i>18.0 – 35.0</i>	
Mean ± SD	<i>20.26 ± 1.46</i>	
Residence		
Urban	294	65.3
Rural	156	34.7
Current academic semester*		
Second semester	90	20.0
Fourth semester	44	9.8
Sixth semester	145	32.2
Eighth semester	171	38.0
Student's last obtained GPA		
A	6	1.3
A-	16	3.6
B+	41	9.1
B	123	27.3
B-	80	17.8
C+	115	25.6
C	45	10.0
C-	18	4.0
D	6	1.3

*No students registered in the first, third, fifth and seventh semesters.

Table (2) reveals that the majority of the studied students in the second, fourth, sixth and eighth semesters had moderate levels of the total score of emotional intelligence (90.0%, 86.4%, 87.6% and 92.4% respectively). No statistically significant difference was found between studied students in the four semesters regarding their total score of EI ($p=0.477$). No statistically significant differences were noted between the studied students in the second, fourth, sixth and eighth semesters in relation to their mean scores of emotional intelligence ($F= 0.212$ and $p= 0.888$).

Table (2): The levels and total mean scores of emotional intelligence of the studied students at the beginning of their academic semesters.

Levels and total mean score of EI	Students at the beginning of academic semesters								Test of significance
	Second semester (n = 90)		Fourth semester (n = 44)		Sixth semester (n = 145)		Eighth semester (n = 171)		
	No.	%	No.	%	No.	%	No.	%	
Low	0	0.0	0	0.0	2	1.4	0	0.0	*MCp=0.477
Moderate	81	90.0	38	86.4	127	87.6	158	92.4	
High	9	10.0	6	13.6	16	11.0	13	7.6	
<i>Min. – Max.</i>	50.0 – 121.0		54.0 – 117.0		43.0 – 124.0		53.0 – 119.0		**F= 0.212 p= 0.888
<i>Mean ± SD</i>	84.54 ± 13.35		84.75 ± 14.25		83.94 ± 13.82		83.93 ± 13.30		

*MCp= p value of Monte Carlo test.

** F= ANOVA test.

Table (3) illustrates that most of students across the four academic semesters obtained moderate levels of the five elements of emotional intelligence. No statistically significant difference was found between the studied students in the second, fourth, sixth and eighth semesters in relation to their levels of five elements of EI ($p =0.138, 0.429, 0.459, 0.408$ and 0.957 respectively), and also when comparing the mean scores of the five elements of EI across the different semesters ($p=0.888, 0.624, 0.646, 0.488$ and 0.885 respectively).

Table (3): The levels and mean scores of emotional intelligence elements of the studied students at the beginning of their academic semesters.

Levels and mean scores of EI elements	Students at the beginning of academic semesters								Test of significance
	Second semester (n = 90)		Fourth semester (n = 44)		Sixth semester (n = 145)		Eighth semester (n = 171)		
	No.	%	No.	%	No.	%	No.	%	
Self-awareness									
Low	0	0.0	0	0.0	6	4.1	4	1.2	*MCP= 0.138
Moderate	71	78.9	32	72.7	112	77.3	141	83.6	
High	19	21.1	12	27.3	27	18.6	26	15.2	
<i>Min. – Max.</i>	11.0 – 25.0		10.0 – 24.0		5.0 – 25.0		9.0 – 25.0		**F= 0.212 p= 0.888
<i>Mean ± SD</i>	16.77±3.12		16.80±3.43		16.48±3.38		16.65±2.92		
Managing emotions									
Low	5	5.6	1	2.3	3	2.1	6	3.5	*** χ^2 = 5.947 P= 0.429
Moderate	72	80.0	32	72.7	122	84.1	141	82.5	
High	13	14.4	11	25.0	20	13.8	24	14.0	
<i>Min. – Max.</i>	8.0 – 25.0		9.0 – 23.0		8.0 – 25.0		6.0 – 24.0		F= 0.578 p= 0.624
<i>Mean ± SD</i>	15.89 ± 3.48		16.70 ± 3.48		16.10 ± 3.29		16.06 ± 3.43		
Motivation									
Low	0	0.0	0	0.0	6	4.1	4	1.8	MCP= 0.459
Moderate	76	84.4	37	84.1	115	79.3	144	84.8	
High	14	15.6	7	15.9	24	16.6	23	13.4	
<i>Min. – Max.</i>	10.0 – 23.0		11.0 – 24.0		7.0 – 25.0		8.0 – 24.0		F = 0.553 p= 0.646
<i>Mean ± SD</i>	16.51 ± 3.12		16.82 ± 3.22		16.26 ± 3.64		16.16 ± 3.40		
Empathy									
Low	0	0.0	2	4.5	3	2.1	3	1.8	MCP= 0.408
Moderate	59	65.6	29	65.9	97	66.9	124	72.5	
High	31	34.4	13	29.6	45	31.0	44	25.7	
<i>Min. – Max.</i>	1.0 – 25.0		7.0 – 25.0		5.0 – 25.0		8.0 – 25.0		F= 0.812 p= 0.488
<i>Mean ± SD</i>	18.08 ± 3.37		17.34 ± 3.98		17.70 ± 3.70		17.41 ± 3.40		
Social skills									
Low	2	2.2	0	0.0	3	2.1	2	1.2	MCP= 0.957
Moderate	63	70.0	32	72.7	99	68.3	124	72.5	
High	25	27.8	12	27.3	43	29.6	45	26.3	
<i>Min. – Max.</i>	9.0 – 25.0		11.0 – 23.0		5.0 – 25.0		7.0 – 25.0		F= 0.216 p= 0.885
<i>Mean ± SD</i>	17.30 ± 3.57		17.09 ± 3.58		17.41 ± 3.68		17.12 ± 3.47		

*MCP = p value of Monte Carlo test.

** F= ANOVA test.

*** χ^2 = Chi-square test.

Table (4) shows that the percentage of students (7.6%) who obtained high level of the total score of emotional intelligence at the beginning of the eighth semester was increased to 9.9 % by the end of the semester. No significant difference was proved between the studied students at the beginning and at the end of the eighth semester in relation to their levels of emotional intelligence ($\chi^2= 0.585$, $p= 0.444$). By the end of eight semester, the total mean score of emotional intelligence of the studied students was slightly increased from 83.93 ± 13.30 to 84.41 ± 14.03 , with no statistically significant difference ($t= 0.4719$, $p= 0.6376$).

Table (4): Comparison between the levels and total mean score of emotional intelligence of the studied students at the beginning and at the end of the eighth (last) semester.

Levels and total mean score of EI	Students at the beginning of the eighth semester (n=171)		Students at the end of the eighth semester (n = 171)		Test of significance
	No.	%	No.	%	
Low	0	0.0	0	0.0	* $\chi^2 = 0.585$ p= 0.444
Moderate	158	92.4	154	90.1	
High	13	7.6	17	9.9	
<i>Min. – Max.</i>	53.0 – 119.0		55.0 – 120.0		**t= 0.4719 p= 0.6376
<i>Mean ± SD</i>	83.93 ± 13.30		84.41 ± 14.03		

* χ^2 = Chi-square test. ** t= t-test.

Tables (5) compares between the levels and mean scores of the five emotional intelligence elements of the studied students at the beginning and at the end of the eighth (last) semester. As for self-awareness, it was noted that at the beginning of the eighth semester 1.2 % of students obtained low level of score of self- awareness and by the end of the eighth semester there were no students with low self- awareness. On the other hand, the percentage of students (15.2%) who obtained high level of self-awareness at the beginning of the eighth semester was increased to 18.7% by the end of it. No statistically significant difference was proved between students at the beginning and at the end of the eighth semester ($\chi^2=2.677$, p= 0.262).

In relation to managing emotions, the percentage of the students (14.0%) who obtained high score of managing emotions at the beginning of the eighth semester was increased to 24.6 % at the end of the eighth semester. A statistically significant difference was detected between students at the beginning and at the end of the eighth semester ($\chi^2= 6.722$, p= 0.034).

As regards motivation, at the beginning of the eighth semester 1.8 % of students had low motivation and by the end of this semester there were no students with low motivation. On the other hand, the percentage of students (84.8%) with moderate level of motivation at the beginning of the eighth semester was increased to 88.9% by the end of this semester. No statistically significant difference was found between students at the beginning and at the end of eighth semester ($\chi^2=3.546$, p=0.169).

Concerning empathy, the percentage of students who had high level of empathy at the beginning of the eighth semester was 25.7%. This percentage increased to 36.5% by the end of this semester. However, no statistically significant difference was noted between students at the beginning and at the end of the eighth semester ($\chi^2=5.16$, p=0.075).

Regarding social skills, the percentage of students (26.3%) who had high level of social skills at the beginning of the eighth semester was increased to 28.1% at the end of this semester. No statistically significant difference was found between students at the beginning and at the end of the eighth semester ($\chi^2=0.134$, p= 0.935)

Comparing the mean scores of the five emotional intelligence elements of students at the beginning and at the end of the eighth semester, it was observed that at the beginning of the eighth semester the mean scores of self-awareness (16.65±2.92), managing emotions (16.06±3.43), motivation (16.16±3.40), empathy (17.41±3.40) and social skills (17.12±3.47) were increased to 16.98±2.89, 16.41±4.03, 16.18±3.56, 17.45±3.76, 17.39±3.74 respectively by the end of the same semester. No statistically significant differences were observed (p> 0.05).

Table (5): Comparison between the levels and mean scores of emotional intelligence elements of the studied students at the beginning and at the end of the eighth (last) semester.

Levels and mean scores of the five elements of EI	Students at the beginning of the eighth semester (n =171)		Students at the end of the eighth semester (n = 171)		Test of significance
	No.	%	No.	%	
Self-awareness					
Low	4	1.2	0	0.0	$\chi^2= 2.677$ p= 0.262
Moderate	141	83.6	139	81.3	
High	26	15.2	32	18.7	
<i>Min. – Max.</i>	9.0 – 25.0		12.0 – 25.0		<i>t</i> = 1.477
<i>Mean ± SD</i>	16.65±2.92		16.98 ± 2.99		<i>p</i> = 0.1413
Managing emotions					
Low	6	3.5	8	4.7	$\chi^2= 6.722^*$ p= 0.034
Moderate	141	82.5	121	70.7	
High	24	14.0	42	24.6	
<i>Min. – Max.</i>	6.0 – 24.0		9.0 – 24.0		<i>t</i> = 1.334
<i>Mean ± SD</i>	16.06 ± 3.43		16.41 ± 4.03		<i>p</i> = 0.184
Motivation					
Low	4	1.8	0	0.0	$\chi^2= 3.546$ p= 0.169
Moderate	144	84.8	152	88.9	
High	23	13.4	19	11.1	
<i>Min. – Max.</i>	8.0 – 24.0		10.0 – 24.0		<i>t</i> = 0.0769
<i>Mean ± SD</i>	16.16 ± 3.40		16.18 ± 3.56		<i>p</i> = 0.9388
Empathy					
Low	3	1.8	1	0.6	$\chi^2= 5.16$ p= 0.075
Moderate	124	72.5	108	63.2	
High	44	25.7	62	36.2	
<i>Min. – Max.</i>	8.0 – 25.0		9.0 – 25.0		<i>t</i> = 0.1538
<i>Mean ± SD</i>	17.41 ±3.40		17.45 ± 3.76		<i>p</i> = 0.8779
Social skills					
Low	2	1.2	2	1.2	$\chi^2= 0.134$ p= 0.935
Moderate	124	72.5	121	70.7	
High	45	26.3	48	28.1	
<i>Min. – Max.</i>	7.0 – 25.0		9.0 – 25.0		<i>t</i> = 1.0175
<i>Mean ± SD</i>	17.12 ± 3.47		17.39 ± 3.74		<i>p</i> = 0.3104

*Significant value at p <0.05

Table (6) represents that male students had slightly increased mean scores of self-awareness (16.86±3.24), managing emotions (17.15 ±3.29), motivation (16.42±3.38), empathy (17.88 ±3.40), social skills (17.65 ±3.65) and total mean score of EI (85.95 ±13.28) than female students (16.56 ± 3.13, 15.78± 3.37, 16.30± 3.42, 17.55± 3.59, 17.12± 3.53 and 83.32± 13.27 respectively). A statistically significant difference was noticed between male and female students regarding managing emotions (t=3.667, p= <0.001).

Table (6): Relationship between the mean scores of the five elements and the total mean score of emotional intelligence, and sex of the studied students.

Mean scores of the five elements and total mean score of EI	Sex		Test of significance
	Male (n = 105)	Female (n = 345)	
Self-awareness			
Min. – Max.	7.0 – 25.0	5.0 – 25.0	t= 0.837
Mean ± SD	16.86 ± 3.24	16.56 ± 3.13	p= 0.403
Managing emotions			
Min. – Max.	9.0 – 25.0	6.0 – 25.0	t= 3.667
Mean ± SD	17.15 ± 3.29	15.78 ± 3.37	p= <0.001 *
Motivation			
Min. – Max.	9.0 – 24.0	7.0 – 25.0	t= 0.325
Mean ± SD	16.42 ± 3.38	16.30 ± 3.42	p= 0.745
Empathy			
Min. – Max.	6.0 – 25.0	5.0 – 25.0	t= 0.816
Mean ± SD	17.88 ± 3.40	17.55 ± 3.59	p= 0.415
Social skills			
Min. – Max.	9.0 – 25.0	5.0 – 25.0	t= 1.319
Mean ± SD	17.65 ± 3.65	17.12 ± 3.53	p= 0.188
Total mean score of EI			
Min. – Max.	47.0 – 124.0	43.0 – 121.0	t= 1.781
Mean ± SD	85.95 ± 13.28	83.32 ± 13.27	p= 0.076

* Statistically highly significant at $p \leq 0.001$

5. Discussion

In replying to the research questions, the present study revealed that the levels of emotional intelligence among the majority of baccalaureate students at the Faculty of Nursing, Alexandria University were moderate. However, there were no statistically significant differences found between the studied students in the different semesters in relation to their total score of emotional intelligence which may indicate that the students' levels of EI did not much progress along the academic semesters. This finding means that the students at the Faculty of Nursing are "generally emotional intelligent". These moderate levels of EI may be sufficient for practicing successful nursing as the nature of nursing profession obliges nurses to be emotionally intelligent. In the same direction, Benson et al., (2010) found that the majority of undergraduate nursing students across the four years

had average/moderate emotional intelligence. The researchers argued that this moderate level of EI can help nurses to be effective in dealing with daily work demands.

However, lack of variations in students' total mean score of EI across the different semesters may be due to the importance of behaving in an emotionally intelligent manner which is emphasized by the teaching staff across different nursing courses, so the nursing students became attuned to interact on an emotional level with different patients in various clinical areas which in turn may lead to less variations of EI levels among students in the progressive academic semesters. On the contrary, Benson et al., (2010) found that students in each year had higher total score of EI than students in the prior year with the highest scores occurring in the year four. Accordingly, they suggested that EI may develop over time and may progress along the years of studying nursing.

The subjects of the current study have also adequate emotional intelligence skills as the results revealed that at the beginning of the second, fourth, sixth and eighth semesters, students had moderate scores of the five elements (skills) of emotional intelligence which are identified in the Goleman's emotional intelligence model as self-awareness, managing emotions, motivation, empathy and social skills (Goleman, McKee, & Boyatzis, 2002). Concerning the first element of EI, self-awareness, the results of this study revealed that the majority of all students had moderate level of self-awareness. This students' moderate level of self-awareness across the different semesters may be due to the more information, practice of nursing and involvement with different types of patients which fuel the students with wide varieties of emotional experiences while most of teaching staff guide their emotions through providing more clarification and explanations of what is going on, clarifying strong and weak aspects of the student's personality, and helping students understand their feelings and behaviors, as well as their effect on others, in order to change and grow.

The findings of the present study indicated also that by the end of the eighth (last) semester, the students had either high or moderate level of self-awareness. It appears that the self-awareness skills of the nursing students grew and the number of the nursing students who had moderate self-awareness skills increased to the degree that there were no nursing students with low level of self-awareness by the end of the last semester. This result may be due to the fact that those students studied and passed through many courses, such as communication skills and human relations, and fundamentals of psychology, which are needed to prepare a professional nurse to perceive his/her emotional needs and understand his/her self properly. Additionally, nursing students in the eighth (last) semester study the course of psychiatric nursing and mental health. This course is emphasizing the importance of using self-understanding as a therapeutic tool while dealing with the most sensitive patients; patients with mental illnesses. Students are given chances to become more self-aware, go deeply inside the self and invade the dark side of personality. This process is facilitated through self-reflection, process recording and exchanging personal experiences with colleagues, all these with guidance and supervision of the experienced instructors. Being aware and understanding oneself helps also the student nurse to be aware of patient's feelings and understand his/her motives and behaviors, and intervene accordingly.

As for managing emotions, most of students in the present study had a moderate ability to manage their emotions. This result may be due to the help provided by the instructors in different clinical areas. They guide and prepare students in managing and regulating their emotions to deal and communicate effectively with the different individuals including patients, families and colleagues in the various clinical situations. These preparations provided by nurse educators empower students to deal with their own feelings as well as patients' feelings confidently, competently and safely. Freshwater and Stickley (2004) argued that these emotional management preparations enable nurse educators to produce students who are not only technically competent, but who can intuitively sense the needs and emotions of patients. This explanation may be the main reason for the statistically significant difference between students at the beginning and at the end of the eighth semester and the increased students' mean score of managing emotions by the end of the eighth semester, perhaps after studying the course of psychiatric nursing and mental health.

In relation to the third element of EI, motivation, the result of the present study indicated that most of the studied nursing students had moderate levels of motivation. These results may be related to both students and educators. First, students at this age are usually fueled with energy to explore and study. They transfer from the secondary school to the higher education with the curiosity to know and identify new concepts they did not learn in previous educational levels. While progressing in their courses and by the end of their study, students may look forward toward their career and are fueled with motivation to lead as a responsible professional nurse. Leadership is another quality which can also be emphasized and developed through studying the course of nursing administration in the eighth semester; before graduation. Second, nurse educators also might be equipped to intervene with students who possess decreased motivation to develop and increase their motivational levels. They are encouraging students to achieve their goals, allowing them to show their creative skills, appreciating their success and achievements.

Regarding empathy, the fourth element of EI, it was identified by Rochester et al., (2005) as the highest ranked interpersonal aspect of emotional intelligence. However, acquired empathy can be taught as a skill and be developed with practice and experience, so through a human trait, a professional state, a communication process and a caring relationship, the concept of empathy develops and grows (Yu & Kirk, 2008). This point is illustrated when knowing that the findings of the current study indicated that more than two thirds of the studied nursing had moderate level of empathy. The results also showed the progress of the empathy across the semesters to be higher at the end of the last (eighth) semester. The same results were reported by a previous study which showed that nurses had developed moderate levels of empathy after completing their educational programs (Çınar et al., 2007). Perhaps by time through developing the students' abilities to be self-aware, manage emotions, and be empathetic were fostered and the ability to sense in the moment how others are reacting was increased. This student's ability to sense how another person is feeling in a given situation may be developed through the help of the clinical instructor who may act as a role model while showing acceptance and emotional understanding to patients and demonstrating higher levels of empathy within a caring professional nurse-patient relationship. Including the concept of empathy within the studied courses, such as communication skills and human relations, fundamentals of psychology, and psychiatric nursing and mental health may also enable students of the present study to acquire knowledge and skills needed to be empathized with patients with different health problems.

As regards social skills, the fifth and last element of EI, they play a significant role in the success or failure of the professional nurse. Cram (2007) convinced that the nurse who is prepared to form appropriate interpersonal relationships could potentially relate to the patient in a healthy manner. According to results of the current study, more than two thirds of the studied nursing students had moderate levels of social skills. It seems that mastering the abilities of self-awareness, emotional management, and motivation paves the way for more effective relationships, and encourages debatable and open discussions in the all sections of the nursing courses which may provide the students with opportunities to learn communication skills needed to communicate effectively, initiate successful resolution of conflict with others, build interpersonal relationships, provide advice and emotional support to others as needed, and accurately reflect people's feelings back to them.

While Goleman (1998) asserted that there were no sex differences in EI exist and males' and females' overall levels of EI are equivalent, the findings of the current study showed that male students had higher emotionally intelligence skills than females and an increased mean score of managing emotions than female students with a statistically significant difference was noted between them. These findings are in harmony with those of Namdar et al., (2008) which indicated that male nursing students were much better than female students in reading and managing emotional information of self and others.

Conversely, other researchers conducted in Western countries, have found that female subjects are more likely to deal with their feelings than male subjects. They argued that females tend to be more socially skilled, have more information about emotional world and express more about emotional aspects and therefore, they can regulate their feelings in different emotional situations (Brackett & Mayer, 2003; Schutte, Malouff, & Hall, 1998). These different results may be related to the cultural difference between Western and Eastern countries where females have been learnt to suppress their emotions.

6. Conclusion and Recommendations

Based on the results of this study, it could be concluded that baccalaureate students at the Faculty of Nursing, Alexandria University had moderate levels of emotional intelligence. Although these levels of emotional intelligence did not much progress along the academic semesters, the students' level of EI was slightly increased by the end of the last (eighth) semester. Thus, it was recommended that pre-selection measuring of the student's level of EI is needed prior to entrance into the Faculty of Nursing; emotional intelligence concept should be incorporated into the nursing curriculum in order to cultivate growth of the student' emotional intelligence abilities needed to work with patients in different clinical settings. Regular educational workshops and seminars should be also conducted for the nursing educators and clinical instructors to provide enough training on how to develop and improve their own and students' emotional intelligence skills. In addition, further research is required to study the effect of implementing intervention programs to develop and improve nursing students' emotional intelligence skills.

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