



## Speciality Preferences among Two Samples of Medical and Nursing Students and Its Relationship with Emotional Intelligence, and Self-Efficacy

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### Abstract :

#### Background:

*Our aim is to (dis)prove the association of emotional intelligence (EI) and/or Self- efficacy (SE) with specialties' 'preference (SP) among sample of medical and nursing students.*

#### Methods:

*A self- report questionnaire comprised of demographic data, trait Emotional Intelligence Questionnaire- Short Form (TEIQue-SF), the General Self- Efficacy Scale, and students SP was filled by 451 medical and nursing students at RAK MHSU and faculty of nursing ,Cairo University in 2016.*

#### Results:

*Both EI and SE were significantly higher among the medical than nursing students and positively correlated with each other in the whole sample . No sex or age differences for EI and SE was noticed. The variables predicted preferring surgical specialties and emergency medicine versus all other specialites among medical students in bivariate and multivariate analysis were male gender and high SE. The variables which predict preferring Medical/ Surgical and Pediatric nursing versus all other nursing specialites among the nursing students were older age and high SE. Emotional intelligence did not show any positive association with SP.*

#### Conclusion and Recommendations:

*EI and SE were positively correlated. SE is related with SP whereas EI did not. Improving both EI and SE among health professional undergraduates is recommended for many reason.*

## INTRODUCTION

The main aim of medical education is to furnish doctors and nurses with skills that enable them to provide patients with care in an empathetic, sound and scientific way. <sup>1</sup>. Each student in medical field tends to enter their undergraduate program with very strong opinions as to what speciality areas are the most desirable in their future employment. Emotional intelligence is a set of linked cognitive and emotional abilities. This cognitive structure has four components: emotional self-assessment, self-expression assessment, identification of others' emotions for emotional self-regulation, and the use of emotion to facilitate performance . Emotional intelligence had twice the power of cognitive intelligence to predict academic achievement explanation (9). Emotional intelligence (EI) is tied to work performance , satisfaction , lifelong practice ,solve emotional problems, capacity to accept reality, flexibility, ability to regulate and alter the affective reactions of stress and crisis..it has a positive impact on interpersonal and communication skills, the doctor-patient relationship, and the level of empathy; which is component of EI and In the same time, emotional intelligence is positively related to

self-efficacy (SE) and both play an important role in achieving academic success. <sup>3</sup> In general, EI could be a predictor in decisional issues in the career field. <sup>4</sup>.

Similar to EI, previous studies suggest that self-efficacy as a cognitive structure created by the cumulative learning experiences in a person's life that lead to development of belief or expectation that they can or cannot successfully perform a specific task or activity, and could shape students' aspirations and career choices. <sup>5,6,7</sup>A strong sense of self-efficacy helps students dealing with challenging situation without feeling overwhelmed and confused. It tends to help the student to facilitate goal setting, effort investment, persistence in face of barriers, recovery from setbacks, and emotional addictiveness<sup>8</sup>.others demonstrated that self-efficacy served as an antecedent of outcome expectations, interests and goals for career planning and career exploration among university students. Therefore, early identification of low self-efficacy gives time to review, develop and sustain strategies to help address it. <sup>9, 10</sup>

Student stress can lead to decreased performance and consequently decreased feeling of self-efficacy. Therefore, a student with high emotional intelligence can necessarily



control his emotions and deal with problems favorably (23). Accordingly, if we cannot consider self-efficacy as a component of emotional intelligence, we should not at least ignore its high overlap.

Unfortunately, the majority of studies investigated the association of personality traits with medical speciality preference focused mainly on other scales rather than EI.<sup>11</sup> Few years later, Borges et al in 2009 examined the findings from three empirical studies investigating the association of EI and medical speciality choice. The authors investigated studies that used the Mayer- Salvoney- Cruso- Emotional Intelligence (MSEIE), the Trait Meta Mood Scale (TMMS), and Bar-On Emotional Quotient Inventory (EQ-I). It was found that no significant differences in EI were found between students entering primary care or non primary care specialties.<sup>12</sup>

However, in current study the classification of specialty preferences would be different, and we used the Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF)<sup>13,2</sup> to measure EI. Besides, individual and contextual factors in every study differ in its number and interaction when choosing a residency program. Let mention the country based constraints associated with the number of residency places available in each specialty<sup>14</sup>

Literatures support the role of career self-efficacy and professional commitment in medical and nursing careers and demonstrated the role of professional competency to improve the quality of medical and nursing care.<sup>10</sup>

Several studies have reported that factors could influence career choice were Solidarity, better income expectations, professional and personal recognition, early life experience and family models. Moreover personal time free of practice requirements for leisure, family, and non-vocational pursuits and control of total weekly hours spent on professional responsibilities. For female physicians the prospect of combining their professional career with family responsibilities is a key issue in the process of speciality choice or changing the speciality to which they initially aspired to. Other researchers added a motivation as a factor females, motives related to work-family balance were more important, while male respondents preferred motives related to the external factors of work life, such as career, professional appreciation and salary. For females, flexibility and quality of life seem to be important factors when choosing their medical career, even when it means compromising professional achievements<sup>15;16</sup>

#### Significance

Little research addresses how students at medical field develop their choice of specialty, and if there are certain predictors could affect their choices. So, The aim of our work is to study how EI, and SE influence speciality preference (SP) among medical and nursing students controlled for other independent variables as age and sex.

#### **PARTICIPANTS & METHODS:**

A cross sectional study design was applied on 299 medical students of the RAK Medical and Health Sciences University ( RAK MHSU) and 152 nursing students of **Cairo University**. Due to the expected poor response rate of students, a convenient non- random sample of students who are willing to fill the questionnaires was adopted in the academic year 2015/2016. Participants who opted to share were informed that the study hasn't any risk for them, briefed on the study objectives, encouraged to actively participate, and verbal consent was taken from each of them.

#### **STUDY TOOLS**

A self- report questionnaire comprising of the following parts was used:

**Socio demographic data** developed by the researchers, including students' age sex, college, level or class.

**Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF).**

This is a 30-item questionnaire designed to measure global trait emotional intelligence (trait EI). It is based on the long form of the TEIQue.<sup>12</sup> Items were responded to on a 7-point Likert scale where 1= completely disagree and 7= completely agree. Fifteen of the 30 items were reversed. The TEIQue has been constructed with the aim of providing comprehensive coverage of the trait EI domain<sup>2</sup>. **The Global Score of the questionnaire** (all the 30 items, ranging from 30 to 210 after managing the reversed items) gives a snapshot of the general emotional functioning. It is important to note that the global score is very broad, but it is made up of more focused factor scores. These factors are:

**Well-being factor** (selected 6 items of the 30) that suggests the likelihood to be more upbeat and fulfilled than most



people.

**Self-control factor** (selected 6 items of the 30) describes how far people think they can control their impulses or are controlled by them. It comprises three different traits: Impulse Control, Stress Management and Emotional Regulation.

**Emotionality factor** (selected 8 items of the 30) comprises four different traits: Empathy, Emotion Perception, Emotion Expression and Relationships. Together they indicate how aware you may be of your own emotions and feelings, as well as those of other people.

**Sociability factor score** (selected 6 items of the 30) suggests that one feels comfortable in social contexts than most people. This may mean you particularly enjoy jobs which require concentration on process details and little social contact. Cronbach's Alpha for test reliability was 0.771.

#### The General Self-Efficacy Scale (GSE)

The GSE was used to measure self-efficacy. This scale was created by Schwarzer, and Jerusalem, 1995 to construct general belief of perceived self-efficacy by an adult including adolescents. The scale uses a comprehensive questionnaire consisting of ten items designed to construct perception of self-efficacy. The GSE scale responses to the ten questions made on a 4-point scale (1 = Not at all true, 2 = Hardly true, 3 = Moderately true 4 = Exactly true) with final composite score ranging from 10 to 40. Reliability of the scale on Cronbach's Alpha: ranged from .76 to .90, with the majority in the high .80s in previous study.<sup>14</sup> Cronbach's Alpha for test reliability was 0.799

#### SPECIALITY PREFERENCES

The questionnaire asked the medical students "What speciality would you like to end up doing?" and to select a single specialty from a list of 15 choices namely:

Anaesthesia, Emergency speciality, Surgical specialities (General- Special orthopaedics and urology- ENT- Ophthalmology), Family medicine, Medical Specialities (Internal Medicine and all its subspecialties e.g. dermatology, chest, cardiology, endocrinology, sport medicine), Psychiatry, Neurology, Obstetrics and Gynaecology, Paediatrics, Public Health/ Epidemiology, Diagnostics (pathology- microbiology- Radiology- Oncology), basic sciences, staying as a GP, other specified, and I don't know. If a student gave more than one answer, we categorized this under 'I don't know'.

For nursing students, they were also asked "What speciality would you like to end up doing?" and to select a single specialty from a list of 8 choices namely: Surgical & Medical nursing, Critical care nursing, Pediatric nursing, Obstetrics and Gynaecology nursing; Community nursing, Psychiatry nursing, Nursing Administration, and I don't know.

Because of the differences in specialities in medical and nursing fields, and after many statistical tests were done to examine the relationship between EI, SE, and speciality preferences, the specialities were clubbed in two big categories. For Medical students, surgical specialities and emergency speciality for medical students (=1) versus all other specialities (=2). For nursing students, Surgical & Medical and Pediatric nursing specialties (=1) versus all other nursing specialties (=2).

#### ETHICAL CONSIDERATION

For RAK MHSU, an approval from the Research Committee was obtained before the commencement of the study. For Cairo university, a primary approval from the vice dean of education and students affairs of nursing faculty, at Cairo University was obtained to conduct the study. Then, an official permission was obtained from the head of each department to fill questionnaires by the students.



All students from both universities were assured that the data is confidential and will be used only for research purposes. The researchers arranged time with each head of department to meet participants on planned time for each level. Researchers make full description of the study aim and procedures, verbal informed consent was provided by the participants who agree to participate. Confidentiality and privacy were assured. Researchers assured students that they will never be exposed to any harm.

## RESULTS

The current study sample comprised of 451 medical students, 66% of them were from RAK MHSU and the rest were from the faculty of nursing, Cairo university. Around 38% of the sample were males with less male percentage in the RAK MHSU subsample compared to Cairo University (31.6%, 48.7% respectively- data not shown in tables). The mean (SD) age of the sample was 19.82(1.67), with slightly significant younger age of the RAK MHSU subsample compared to Cairo University (mean age 19.3, 20.7 respectively- data not shown in tables). Around 38% of the sample aged 21 years and above (the higher age group) while the rest were younger.

**Table 1** showed that Statistically significant differences were detected between medical and nursing students regarding the Emotional Intelligence (EI)- Global score, as well as its 4 subscales and self- efficacy which medical students had higher mean scores in all constructs more than nursing students .

**Table 2** revealed that, EI and its subscales were positively correlated with each other and with the SE scores.

**Table 3** demonstrated the percentages distributions of specialty preferences (SP) for the two subsample before and after clubbing it into binary variable . The highest preferred specialties for medical students were medical and its subspecialties and surgical specialties (28.1%, &25.8%)

respectively , while nursing students preferred critical care nursing and obs and gyne specialties (23.7%& ,18.4%)respectively .

After clubbing , 28.4% of medical students preferred surgical specialties and emergency medicine . while 33.6% of nursing students preffered medical surgical and pediatric nursing

**Table 4** compared between mean scores related to speciality preferences(group 1 and group 2) among medical and nursing students .There was statistically significant difference between with students self efficacy and their speciality preferences (group 1 and group 2)( $f=6.424$  at .012among medical students ,  $f=5.624$  at .019 among nursing students). Also nursing students whose age group was above 21 years preferred G 2 Specialities

**Table 5** clarified that, variables predicted preferening surgical specialities and emergency medicine versus all other specialites among medical students in both bivariate and multivariate analysis were male gender and high SE. self-efficacy where  $\text{Exp}(B)$  1.050 at .035. while age bine as a powerful predictor among nursing students where  $\text{Exp}(B)$  2.663 at .022



**Table 1: Comparison between mean scores of medical and nursing students regarding their Emotional Intelligence (EI)-scores and self-efficacy (n = 451)**

		N	Mean	SD	F	Sig.
EI_E	Medical Students	299	34.0736	8.22836	6.129	.014
	Nursing Students	152	32.2895	4.69131		
	Total	451	33.4723	7.27559		
EI_S	Medical Students	299	25.3712	5.40749	27.150	.000
	Nursing Students	152	22.7697	4.12145		
	Total	451	24.4945	5.15552		
EI_So	Medical Students	299	25.9833	5.66720	52.379	.000
	Nursing Students	152	22.0789	4.88073		
	Total	451	24.6674	5.71628		
EI_W	Medical Students	299	28.0000	6.38213	18.524	.000
	Nursing Students	152	25.5197	4.37326		
	Total	451	27.1641	5.89649		
Emotional	Medical Students	299	131.1873	22.20644	41.422	.000
	Nursing Students	152	118.8487	11.31942		
	Total	451	127.0288	20.09094		
SE	Medical Students	295	29.4407	6.20859	23.282	.000
	Nursing Students	152	26.8684	2.99378		
	Total	447	28.5660	5.47104		



**Table 2: Correlational Matrix for Self Efficacy, Emotional Intelligence and its subscales for medical and nursing students( n = 451)**

	SE	EI	EI_E	EI_S	EI_So	EI_W
<b>SE</b>	1	.346**	.126**	.267**	.308**	.304**
<b>Pearson Correlation</b>						
<b>N</b>	447	447	447	447	447	447
<b>EI</b>		1	.751**	.661**	.724**	.744**
<b>Pearson Correlation</b>						
<b>N</b>		451	451	451	451	451
<b>EI_E</b>			1	.270**	.392**	.416**
<b>Pearson Correlation</b>						
<b>N</b>				451	451	451
<b>EI_S</b>				1	.420**	.387**
<b>Pearson Correlation</b>						
<b>N</b>					451	451
<b>EI_So</b>						.383**
<b>Pearson Correlation</b>						
<b>N</b>					1	451
<b>EI_W</b>						1
<b>Pearson Correlation</b>						
<b>N</b>						451
<b>** correlation is significant at the 0.01level (2 tail)</b>						



**Table 3. Percentages distribution of Speciality preferences before and after clubbing among Medical and Nursing Students (( n = 451)**

Medical Students			Nursing Students		
Specialities	n	%	Specialities	n	%
Obs&Gyne	31	10.4	Medical/ Surgical nursing	23	15.1
Medicine and its subspecialities	84	28.1	Critical Care nursing	36	23.7
Surgical specialities	77	25.8	Pediatric nursing	15	9.9
Perdiatrics	28	9.4	Obs&Gyne	28	18.4
Emergency Medicine	8	2.7	Community nursing	11	7.2
Diagnostic specialities	9	3.0	Nursing psychaitry	5	3.3
Don't Know	62	20.7	Nursing Adminstration	23	15.1
or other specialities			Don't Know	11	7.2
<b>Clubbing specialities for Medical Students</b>			<b>Clubbing specialities for Nursing Students</b>		
<b><u>GROUP I Specilaities</u></b>					
All specialities EXCEPT	214	71.6	All specialities EXCEPT	101	66.4
<b><u>GROUP II Specilaities</u></b>					
Surgical specialities & Emergency Medicine	85	28.4	Medical/ Surgical and Pediatrics nursing	51	33.6
<b>Total</b>	<b>299</b>	<b>100.0</b>	<b>Total</b>	<b>152</b>	<b>100.0</b>



**Table 4. comparison between mean scores of the EI and its subscales with speciality preference among medical and nursing students (( n = 451)**

Setting		Medical students			Nursing students		
Variables		Mean score	F	Sig.	Mean score	F	Sig.
EI_E	G I- Specialities	33.7056	1.508	.220	32.1485	.270	.604
	G II- Specialities	35.0000			32.5686		
EI_S	G I- Specialities	25.1729	1.013	.315	22.7129	.057	.812
	G II- Specialities	25.8706			22.8824		
EI_So	G I- Specialities	25.8925	.193	.661	22.1188	.020	.888
	G II- Specialities	26.2118			22.0000		
EI_W	G I- Specialities	27.6168	2.729	.100	25.5842	.065	.799
	G II- Specialities	28.9647			25.3922		
EI	G I- Specialities	129.8505	2.744	.099	118.7624	.017	.895
	G II- Specialities	134.5529			119.0196		
SE	G I- Specialities	<b>28.8726</b>	<b>6.424</b>	<b>.012</b>	<b>26.4653</b>	<b>5.624</b>	<b>.019</b>
	G II- Specialities	<b>30.8916</b>			<b>27.6667</b>		
Age	G I- Specialities	19.27	.146	.703	<b>20.73</b>	<b>4.456</b>	<b>.036</b>
	G II- Specialities	19.35			<b>21.12</b>		





**Table 5: Significant Variables in the Logistic regression Equation predicting preferring Group II Specialities**

Setting		B	S.E.	Wald	df	Sig.	Exp(B)
Medical Students	Step 7 <sup>a</sup> Sex	-.524	.281	3.476	1	.062	.592
	SE	.049	.023	4.441	1	.035	1.050
Nursing Students	Step 7 <sup>a</sup> SE	.112	.062	3.226	1	.072	1.119
	agebin	.979	.429	5.214	1	.022	2.663

a. Variable(s) entered on step 1: Sex, agebin, SE, Emotional, EI\_E, EI\_S, EI\_W, EI\_So.

## DISCUSSION

In recent years there has been a growing appreciation of the issues of career preference in medical field as it may affect student learning and academic performance .so,Knowingspecilaity preferences could help students selecting socially committed undergraduate medical and nursing students. <sup>15</sup>. Medical students' characteristics influence career preference. However, little is known about the differential association of these characteristics with preference for certain specialties at different years of medical school.<sup>16</sup>

The most popular medical specialty were, Surgical specialities & Emergency Medicine( 28.4%) as the most preferable among medical students and Medical/ Surgical and Pediatrics nursing as among nursing students ( table 3) . these results may be related to preconceived ideas that these specialities have great manipulation of technology with the aim of curing illness and saving life ,so they feel satisfied and empowered with their skills . These results

are in the same line with other researchers who confined that Surgery is predominantly preferred by male medical students and gynaecology, paediatrics and general practice by females. Internal medicine was pursued by both genders. <sup>21</sup>. Mariolis found that the most popular medical specialty for medical students was General Surgery. <sup>22</sup>. Khader et al also found that the most preferred specialty among male students was surgery, and among female students was obstetrics and gynaecology followed by pediatrics. <sup>23</sup>. Male gender was positively associated with a preference for a career in surgery. <sup>16</sup>. Therefore no wonder to find male sex is a predictor of surgical specilaities preferences in our logistic regression model. Also nursing students tend to favour medical surgical nursing ,padiatric nursing , operating theater and intensive care for the reason of technology, advanced skills and competency while less favour specialty were psychiatry, gerontology and community mental health nursing as patients spend less time nursed at the hospital , then continue their care within their



community so , professional nursing skills and their roles beomes less obvious with patients.

Students' age in the current study revealed statistically significant differences among nursing students regarding speciality preferences (Medical/ Surgical and Pediatrics nursing for students above 21 years)( table 4) , this result could be interpreted according students levels whose studied these fields so, they gain knowledge, experiences and skills regarding these speciality . Also students' self efficacy are affected by Depression and anxiety as the most common psychiatric disorder reported among medical and nursing students. Where depression and anxiety were highest in their first year and lowest in their fourth year of study.hence their self-efficacy may affect their choice .The current study is in the same line with others who reported that first-year students, with no clerkship experience, tend to prefer a career in medicine as they have less experience, not need more skill while old students with clerkship experience and final-year students the duration of study was positively associated with a preference for a career need more competency and self-efficacy and has skilful experience as surgical and paediatric wards Tsai,2015.

Present study revealed no gender differences and/or speciality preferences was associated with EI( table 5). This may be due to social behaviour of men and women is equal and not constraining. Similarly, and using the same tool we used, EI of three groups of specialities' residents, was not statistically different between specialties of the groups or genders of the residents. <sup>24</sup>. others researchers supported our results and clarified that Medical students of both genders are potentially interested in various specialities. Female students are as likely as male students to start their career prospect in surgery but this preference decreases at the end of training, possibly due to heavy workload and a desire to have children [7, 28, 37]. While other researchers results were not matched with current study results whose Gender-related differences in medical career choices were more obvious and could be explained through many factors .

Firstly, the cultural background might be an intrinsic influence on speciality choices. For example, women anticipate having a family and are thus probably more likely to choose a caring profession [8, 9]. Secondly, different choices in medical careers might be caused by gender bias. This might be the case in unequal treatment in educational opportunities and expectations or when negative experiences (gender discrimination or sexual harassment) in speciality orientation occur [5, 6].

Moreover, Pawelczyk et al. stated that few studies investigated the correlation between emotional intelligence and medical speciality preference . In their study they – similarly like ours- found that male medical students chose more frequently surgical speciality , as compared to females. However, they found that emotional intelligence does not differentiate the students preferring surgical and non-surgical specialties. <sup>25</sup>which is similar to our findings in the current study.The lack of association between EI and preferring surgical specialities in our study could be partly explained by what Borges et al mentioned( table 4). They stated that Students interested in technique-oriented specialties versus person-oriented specialties indicate differences in what influences their speciality choice. <sup>26</sup>. Surgical specialities are considered technique-oriented specialties and therefore its link with SE could be more likely than with EI as proved in our study. In the other hand, previous researchers disapproved that , considered emotional intelligence of medical students was a predictor of the interpersonal and communications skills which had a role in determining preferred speciality. <sup>9</sup>.

We noticed also that there was no gender differences in SE for the whole sample and for the two subscamples( table 5). This result is contradicted with previous studies who clarified that Gender differences has a role in academic self-efficacy and self-efficacy for employing self-regulatory strategies. It was indicated that females express greater self-efficacy in self-regulation and greater confidence in their ability to use specific learning strategies than males.



The choice of a medical student's speciality results from a complex set of factors.

Financial compensation, social and familial expectations, medical school experiences and personal factors have often been noted as major influences on students' speciality choices (e.g., Yang and Tsai [23]) More recently, Chang et al.'s [24] research noted speciality characteristics and the speciality training process as highly influential. Females were found to place more emphasis on future lifestyle.

### RECOMMENDATIONS

- it is important for medical educators to understand how students make decisions about their medical career.
- Medical educators should be aware of how medical faculties based experiences and interactions such as faculty, courses, and services impact students' specialty choices and decisions.
- Career counselling is a significant specialty area in the field of counselling and exemplifies the practice of focusing on a person's strengths, and identifying and assisting the client in reaching his or her career goals.
- teach emotional intelligence skills to students with low academic achievement through training workshops
- Equip students with self-regulating strategies of managing stress and depression. In this regard, educational intervention such as stress management training may be introduced into their curriculum.
- Promote intervention strategies that emphasize on self-efficacy among the students.
- Medical Educators and clinician should be aware and acknowledge of their roles towards students attitudes to various clinical practice, which is the first step toward revision not only curricula but in its implementations in all clinical practice

### LIMITATION :

Valuable though these findings have been, there are several inherent limitations in this study.

Firstly, the data was collected using self-report measures, thus, recall errors and social desirability bias may be present

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