

## EMOTIONAL INTELLIGENCE, ACADEMIC PERFORMANCES AND ASSOCIATED FACTORS AMONG NURSING UNDERGRADUATES IN SELECTED GOVERNMENT UNIVERSITIES IN SRI LANKA

DMND Senevirathna<sup>1</sup> and MKDL Meegoda<sup>2</sup>

Department of Nursing & Midwifery, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka<sup>1</sup>

Department of Nursing & Midwifery, Faculty of Allied Health Sciences, University of Sri Jayewardenepura, Sri Lanka<sup>2</sup>

### ABSTRACT

**Background:** Emotional intelligence (EI) is considered as a main aspect that impacts the academic performance of students, particularly in the health field. The aim of this study was to assess the impact of EI on the academic achievement of the students and the socio-demographic factors affecting it.


**Methods:** A cross-sectional study was conducted in four selected government universities. The systematic random sampling method was used to select/recruit participants. EI was assessed using a validated self-administered Genos EI scale (a concise version consisting of 7 domains; 31 questions equally weighted; total score of 155). Socio-demographic data were obtained using a self-administered questionnaire and the academic performance was assessed by the year GPA of the students who had completed the semester examinations. Ethical clearance was obtained from the Ethical Review Committee of KAATSU International University. Analysis was done by using the Spearman rank correlation, Mann-Whitney U test, and the Kruskal Wallis test employed since the data were not normally distributed.

**Results:** Of 200 students; 80.0% were females (mean age  $24.2 \pm 2.59$  years). The median total EI score was 114.0 (females-113.0, males-125.0;  $p = 0.073$ ). Median score was highest for Emotional reasoning (male-21.00, Female-19.0;  $p=0.04$ ) and lowest for Emotional Self Control (male-15.0, Female-14.0;  $p=0.067$ ). A majority of 53.5% obtained 96-126 of total EI score. Demographic variables – gender, having siblings, family type, loss of parents, participation in extracurricular activities or parental education were not associated with the total EI score ( $p>0.05$ ) except socio economic status ( $p=0.028$ ) and study year ( $p=0.022$ ). Academic performances were assessed by the GPA, and there was a moderate positive correlation between GPA and Emotional Intelligence among all three batches, 2<sup>nd</sup> year ( $p=0.004$ ;  $r=0.435$ ), 3<sup>rd</sup> year ( $p=0.034$ ,  $r = 0.376$ ), 4<sup>th</sup> year ( $p=0.000$ ;  $r = 0.641$ ). A significant weak positive correlation was found with family relationships ( $p=0.003$ ;  $r=0.214$ ) and satisfaction with study of nursing ( $p=0.000$ ;  $r=0.316$ ).

**Conclusions:** Emotional intelligence was associated with the factors such as study year, income level, self-satisfaction on the nursing programme whereas age, gender, education level, parental influence did not show any significant relationship. EI was shown to have a significant positive weak correlation with the GPA.

**KEYWORDS:** Emotional Intelligence, Academic Performance, Nursing Undergraduates, Sri Lanka

Corresponding author: Niroshini Seneviratne, Email: [niroshanis@kdu.ac.lk](mailto:niroshanis@kdu.ac.lk)

 <https://orcid.org/0009-0003-8551-0463>



This is an open-access article licensed under a Creative Commons Attribution 4.0 International License (CC BY) allowing distribution and reproduction in any medium crediting the original author and source.

## **1. INTRODUCTION**

Emotional Intelligence is (EI) described as non-cognitive intelligence on overall functioning and adaptive coping of the emotional aspects for cognitive abilities, introspection, emotional literacy, and self-awareness (Cherniss, 2010). EI is fundamental to the nursing profession since it facilitates the processing of emotional information for individuals and improves patient care through effective communication and therapeutic relationships (Dian & Sheron 2019).

Emotional intelligence among nursing students is crucial when they deal with clients in any setting. Nursing students who are studying in any particular year in diverse backgrounds are engaged in numerous emotionally charged experiences to learn how to develop a therapeutic relationship by monitoring their emotions and those of others (Horton-Deutsch and Sherwood, 2008). There are many studies related to EI conducted among nurses working in clinical settings, i.e. EI and its association to job performance (Vahidi et al., 2016), EI and its impact on occupational stress (Heenatigala et al., 2016), and EI and job satisfaction. Furthermore, EI is related to positive ways of dealing with work-related conflicts and coping styles (Ali, Morad and Sabri, 2020). EI of nursing undergraduates has not been discussed widely within the Sri Lankan context. Therefore, the findings of this study will be significant to reveal the EI status of nursing students. EI status of nurses and other areas are found in the literature, for instance, EI and job performance (Sewwandi & Thissera, 2015). According to the findings of the study, there is a significant impact of EI on job performance among nurses, and the researcher recommends organizing educational and training programmes regarding EI and job performance of nurses. A study conducted to assess the EI and Job satisfaction among nurses (Senanayake et al., 2020) has found a weak positive correlation between EI and job satisfaction among the nursing officers in General Hospital, Kalutara. Enhancement of job satisfaction through continuous evaluation and implementation of EI developing programmes in the hospital has been recommended

by the researcher.

According to the evidence available, EI is fundamental to all basic nursing education programmes (Whitley-Hunter, 2014). Often, nursing students and patients experience emotions in response to precipitating conditions. When students recognize these emotions, they can adequately address patients' needs. Through EI, nursing students can learn to access their emotions and understand patients' emotions for assessing situations and facilitating healthy outcomes (Horton-Deutsch and Sherwood, 2008). Students may also continue to develop their EI throughout the nursing coursework in nursing education (Molina-mula and Gallo-estrada, 2020). In Sri Lanka there were studies conducted to assess EI among medical students (Edussuriya et al., 2018; Ranasinghe et al., 2017; Wijekoon et al., 2017). However, there are no published data on this area among nursing students in Sri Lanka.

Accordingly, this study aimed to assess the level of EI and academic performances and related factors among nursing undergraduate students in selected government universities in Sri Lanka. The findings of this study will be significant as this is a study that focuses on the student nurses' levels of EI, its relation to academic performances, and associated factors. In the literature, it is found out that based on the data gathered by assessment of EI, they have implemented programmes for improvement for their students (Polonio-López et al., 2019). Strengthening EI throughout nursing education is one positive response to increasing retention rates of nursing students and newly-licensed nursing professionals in the work environment (Bagheri et al., 2017). It is imperative for them to get ready by being emotionally prepared and to gain the ability to transit from the academic setting to work as a clinical nurse. Doing EI assessment will be an aid for identifying their levels in order to improve themselves for facilitating better patient care.

Besides, these results will be serving as baseline information for monitoring implemented or planned EI intervention programmes. In addition to that, these results are expected to encourage other

researchers to draw their attention more towards this area and conduct further research.

## 2. METHODS

A descriptive cross-sectional study was conducted during August-October 2021, involving 200 nursing undergraduates from four government universities in Sri Lanka. The systematic random sampling technique was used to select the students. The study instrument used to assess the EI was self-administered Genos emotional questionnaire (concise version), which is a widely used validated questionnaire (Palmer et al., 2014). For this study an EI questionnaire validated to the Sri Lankan context was used (Edussuriya et al., 2017).

The scale consists of 31 items, which are rated on a five-point Likert scale that ranges from 1 (almost never) to 5 (almost always). The scale includes seven dimensions (seven subscales). These subs scales are Emotional Self- Awareness (ESA), Emotional Expression (EE), Emotional Awareness of Others (EAO), Emotional Reasoning (ER), Emotional Self-Management (ESM), Emotional Management of Others (EMO), Emotional Self-Control (ESC). The items are scored on a five-point Likert scale, from “Almost Never” to “Almost Always”.

A supplementary questionnaire was prepared to include demographic data (gender, family type, residential status and number of siblings in the family, monthly house hold income etc.). Furthermore, student perception of level of family support, self-motivation to study nursing, level of socialization within the faculty and religiosity were assessed by students response on a five point Likert scale to the following questions in the supplementary questionnaire; “I get good family support to carry out the academic work”, “I am motivated by myself to study nursing and be a competent nursing professional in the future”, “I think that I am well socialized within the faculty” and “I think I’m a religious person”. Academic performances of the study participants were assessed by the Grade Point Average (GPA) which has been calculated for the students who have completed the examination with the respective years.

The total EI score was calculated by the sum of the sub categories. The Genos EI raw scores (subgroup scores and cumulative score) were correlated to demographic data. A pilot study with 11 randomly selected nursing students (10% of the study sample) was performed to ensure applicability, clarity and feasibility of the instruments. The students took around 15 - 20 minutes to complete the questionnaire. The mean age of the pilot study group was  $25.27 \pm 2.97$ , the mean GPA was  $2.97 \pm 0.48$ , and the mean total EI score was  $113.91 \pm 16.50$ .

**Table 1: Sociodemographic characteristics of the participants**

Demographic data:-		Percentages and the number of participants
<b>University</b>	USJP	18.5%(n=37)
	UOP	27.5%(n=55)
	UOR	26%(n=52)
	KDU	28.0%(n=56)
<b>Study year</b>	2nd year	38.0%(n= 76)
	3 <sup>rd</sup> year	33.5%(n=67)
	4 <sup>th</sup> year	28.5%(n=57)
<b>Age</b>	Mean	24.2
	Median	24
	Mode	24
	Std.Dev	2.59
<b>Gender</b>	Male	20.0%(40)
	Female	80.0%(160)
<b>Nationality</b>	Sinhala	92.5%(185)
	Tamil	5.5%(11)
	Muslim	2%(4)
<b>Religion</b>	Buddhist	89.0%(178)
	Hindu	4.5%(9)
	Catholic	4.5%(9)
	Islam	2%(4)

**Table 2: EI scores for subscales and its association to gender**

EI	ESA	EE	EAO	ER	ESM	EMO	ESC	Total	
<b>Theoretical range</b>	6-20	8-25	8-20	7-25	9-25	9-20	4-20	31-155	
<b>Total score</b>	3011.00	3628.00	3022.00	3727.00	3632.00	3099.00	2880.00		
<b>Mean (% from max score)</b>	15.06 (75.2)	18.14 (72.50)	15.11 (75.50)	18.64 (74.50)	18.16 (72.60)	15.49 (77.40)	14.40 (72.00)	115	
<b>Median</b>	15.00	18.00	15.00	19.00	18.00	16.00	14.00	115	
<b>Median by sex</b>	Male	16.00	19.50	16.0	21.00	19.50	16.00	15.00	123
	Female	15.00	18.00	15.00	19.00	18.00	16.00	14.00	115
<b>P value</b>	<b>.464</b>	<b>.154</b>	<b>.248</b>	<b>.040</b>	<b>.097</b>	<b>.427</b>	<b>.067</b>		
<b>P values for the difference between gender &gt;0.05 - Mann-Whitney U test</b>									

### Data Analysis

Data analysis was done by using the Statistical Software SPSS version 23. Descriptive statistics, associations and correlations were performed as the statistical procedures. All the data were not normally distributed. Shapiro Wilk test p value <0.05 and histograms showed non normal curves. Hence non parametric tests were employed. Correlation analysis was done by using Spearman rank correlation, two independent groups were compared by the Mann Whitney U test and more than two groups were compared by the Kruskal Wallis test. Significant p value was determined at the 0.05 levels.

### Ethical Consideration

Ethical clearance was obtained from the Ethical Review Committee of Kaatsu International University. Permission was obtained from the selected universities prior to data collection. Informed consent was taken from the participants as stated earlier. The confidentiality of the participants was ensured at all stages of the study. Their participation in the study was entirely voluntary. The total score was not significant among male and female groups  $p=0.073;>0.05$ . None of the demographic variables mentioned in the table 04 (Having siblings, Family type, Loss of parents, participation in extracurricular activities or selection of nursing degree programme as a self-motivated decision) were not associated with the total EI score of the participants ( $p>0.05$ ).

according to the consent. They were allowed to withdraw from the study at any time despite consenting to take part earlier.

### 3. RESULTS

Table 1 contains demographic traits of the students, and it shows that most of the nursing students were at the age of 24, according to the mode of the data set. The mean age of the participants was  $24.2\pm 2.59$ . The majority of the participants were females 80.0% ( $n=160$ ). According to the data, there were 38% ( $n=76$ ) 2<sup>nd</sup> year participants, while 33.5% ( $n=67$ ) were 3<sup>rd</sup> year and 28.5% ( $n=57$ ) were 4<sup>th</sup> year participants.

Based on the total score categories, the highest score of 77.4% has been taken for Emotional management of others (EMO) and there were no any association to the EI subscales and gender except Emotional reasoning (ER) ( $p = 0.04;<0.05$ ). (Table 02: EI scores for subscales and its association to gender)

**Table 3: Association of emotional intelligence with the gender**

Gender	N	Mean ranks	Median	P value
Male	40	115.15	125.0	0.073
Female	160	96.84	113.0	
Total	200			

The total score was not significant among male and female groups  $p=0.073$ ;  $>0.05$  (Table 03). None of the demographic variables mentioned in the table 04 (Having siblings, Family type, Loss of parents, participation in extracurricular activities or selection of nursing degree programme as a self-motivated decision) were not associated with the total EI score of the participants ( $p>0.05$ ).

Total EI score was significant among the study year. For the second year, the median score was  $111.0 \pm 13.85$  and for the third year it was  $114.0 \pm 17.87$ . Considering the study years, the final year students had the maximum score of  $116.00 \pm 22$  and the total EI score was significant among these three groups ( $p=0.022$ ;  $p<0.05$ .)

The total EI score of the participants was not significant based on educational qualifications of the mother ( $p= 0.580$ ) or educational qualifications of

the father ( $p=0.529$ ). Monthly income was categorized into four levels. Majority 36.5% ( $n=73$ ) were in the 30000-60000 Rs. income category. According to the results given in the table, there was a significant difference of total EI score (mean rank and the median) among the income category groups  $p=0.028$ ;  $p<0.05$ . the highest median (120.0) was reported by the higher income level of above 60,000 category and the lowest value (104.50) was reported by the lower income category. The results indicate a significant weak positive correlation ( $p=0.003$ ;  $r=0.214$ ) with the family relationship and the emotional intelligence among the study participants and the significant weak positive correlation ( $p=0.000$ ;  $r=0.316$ ) with satisfaction with the study of nursing and the emotional intelligence among the study participants

**Table 4: Demographic variables and association with total EI score**

Parameter	Status	No.	%	Mean Rank	P Value
Having siblings	Yes	185	92.5	100.31	.869
	No	15	7.5	102.87	
Family type	Nuclear	169	84.5	100.54	.982
	Extended	31	15.5	100.29	
Loss of parents	Yes	17	8.5	95.97	.736
	No	183	91.5	100.92	
Extra extracurricular activities	Yes	141	70.5	104.49	.131
	No	59	29.5	90.96	
Self-motivated decisions	Yes	98	49.7	100.35	.741
	No	99	50.3	97.67	

**Table 5: Correlation between academic performances (GPA) and Emotional intelligence.**

	Study year	r value	p value
<b>Correlation between GPA and the emotional intelligence.</b>	2 <sup>nd</sup> year	0.435	0.004
	3 <sup>rd</sup> year	0.376	0.034
	4 <sup>th</sup> year	0.641	0.000

The Grade Point Average was calculated for the students who had completed the semesters without any repeat modules. Accordingly, only 116(58%) students have got their GPA due to incompleteness of one or more modules. GPA ranges from 2.10 to 3.95 and the mean GPA was  $3.30 \pm 0.45$ .

Results indicate a moderate positive correlation between GPA and Emotional Intelligence among all three batches – 2<sup>nd</sup> year ( $p=0.004$ ;  $r=0.435$ ), 3<sup>rd</sup> year ( $p=0.034$ ,  $r=0.376$ ), 4<sup>th</sup> year ( $p=0.000$ ;  $r=0.641$ ). This means there is a positive correlation between GPA and the Emotional intelligence among the nursing students. This indicates that students with higher GPA have high emotional intelligence levels.

#### **4. DISCUSSION**

The aim of the present study was to examine the association between emotional intelligence and academic performance in undergraduate nursing students in selected government universities in Sri Lanka. The results identified that there is no association between emotional intelligence and the demographic characteristics of participants that include having siblings, family type, loss of a parent, participation in extracurricular activities, self-motivated decision, educational qualification of the parents, and in contrast to that it was found out that family income was having a significant relationship with the EI. The results indicate a significant weak positive correlation between the family relationship and satisfaction with the study of nursing and the emotional intelligence among the study participants. Further, it was shown that there is a moderate positive correlation between GPA and emotional intelligence among all three batches and a positive correlation between GPA and the Emotional intelligence among the nursing students. This indicates students with higher GPA have high emotional intelligence levels.

The present study does not show a correlation between gender and the EI. However, a study conducted among nursing students in a public university in Oman has shown statistically significant higher scores among male nursing students in total and emotionality component scores (Deepa et al., 2021). Similar to the present finding, there were significant associations reported between the EI scores and the cumulative GPA and level of study. According to this study higher age category and being male predicted higher EI scores. Similar findings showed in the study conducted among the nursing students in college of nursing (Thamizhselvan and Vembu, 2019), and results revealed that the demographic variables such as age, gender, participation in extracurricular activities, domicile and family environment had not shown statistically significant association with level of emotional intelligence among nursing students. According to the present study, EI level of the nursing students was significant based on the

socioeconomic status. EI level of the participants from high-income level families have shown a high score whereas EI level of participants from lower income level families have shown a low score. This has been proven by Brackett et al., (2012) in the study where it has stated that the income level of the families of nursing students have a significant impact on the EI level of the nursing students where the nursing students from high-income level families have the opportunities to have better education and improve EI whereas the nursing students from low-income families do not have opportunities to have a better education and improve EI.

Emotional Intelligence level of nursing students has a positive correlation with the family relationships in the present study. This has been proven by Berman and Radda (2012) where it has shown that good family relationships have a positive and significant relationship with the EI of nursing students. These findings suggest the important to improve the family relationships of nursing students in order to improve EI level. It should be taken into consideration by nursing students that development of strong family relationships will ultimately result in higher academic performances. EI level of the students from all three study years has shown a positive significant relationship with their academic performances. Students with higher EI levels have taken a high GPA value for their academic studies. This has been proven by Beauvais et al., (2011) in the study conducted to investigate the relationship between EI and the academic performances of nursing students, and it has shown that there is a positive significant relationship between the academic performances and EI of nursing students. Similarly, EI was also positively associated with academic achievement among nursing students in India (Kumar et al., 2016).

Moreover, EI score was significantly different among the study years. Median score values for EI have been increased from the first year to the third year showing a significant relationship between the study year and EI of the students. This has been proven by Deb (2013) where the study year of nursing students has a positive and significant relationship with the EI level. In contrast to the study findings, some studies showed that there was no

statistically significant difference between the freshmen's and senior students' scores (Barkhordari and Rostambeygi, 2019). Similarly, some studies revealed that undergraduate and graduate nursing students have high levels of EI and positively correlated with GPA in the graduate students, which show their academic performance, but it was not showed any correlation between EI and GPA among undergraduate students (Beauvais, et al., 2014). Some studies suggest in contrast to the present finding revealing that there is no correlation of academic success with overall emotional intelligence (Beauvais et al., 2014). Having a better EI level among nursing students is important to improve their performances in the academic work. Therefore, it is important to improve the EI level of students through the nursing programme.

## 5. CONCLUSION

Findings of the study show non-significance of the EI among male and female graduates. Further, it was able to investigate that demographic data such as age, family type, having siblings, loss of parents, involvement in extracurricular activities, educational qualification of the mother and father do not have a significant relationship with emotional intelligence. Further, it was identified that associated factors such as study year, income level of the families of nursing students, self-satisfaction on the nursing programme and future expectations have a significant relationship with EI.

Findings further indicated that a significant weak positive correlation exists between family relationships and emotional intelligence among the study participants. Similarly, a significant weak positive correlation was found between satisfaction with the study of nursing and emotional intelligence among nursing students. From the research study, it was possible to investigate whether higher EI of nursing students results in having higher academic performance levels.

## 6. REFERENCES

Bagheri, Z., Mohd Kosnin, A., Besharat, M.A., (2017). Improving Emotion Regulation skills

through an Emotional Intelligence Training Course. *Khazar J. Humanit. Soc. Sci.* 19, pp. 36–48. <https://doi.org/10.5782/2223-2621.2016.19.4.36>

Barkhordari, M., Rostambeygi, P., (2013). Emotional intelligence in nursing students. *Emot. Intell.* 5.

Beauvais, A.M., Stewart, J.G., DeNisco, S., Beauvais, J.E., (2014). Factors related to academic success among nursing students: A descriptive correlational research study. *Nurse Educ. Today* 34, pp. 918–923. <https://doi.org/10.1016/j.nedt.2013.12.005>

Edussuriya, D., Marambe, K.N., Premaratne, B.G., Ubhayasiri, S.K., Wickramasinghe, C.U., Lanka, S., Unit, M.E., Lanka, S., Lanka, S., (2018). Emotional intelligence & its correlates.

Horton-Deutsch, S., Sherwood, G., (2008). Reflection: An educational strategy to develop emotionally-competent nurse leaders. *J. Nurs. Manag.* 16, pp. 946–954. <https://doi.org/10.1111/j.1365-2834.2008.00957.x>

Molina-mula, J., Gallo-estrada, J., (2020). Impact of nurse-patient relationship on quality of care and patient autonomy in decision-making. *Int. J. Environ. Res. Public Health* 17. <https://doi.org/10.3390/ijerph17030835>

Palmer, B.R., Stough, C., Harmer, C., Gignac, G.E., (2014). Emotional Intelligence Inventory – Concise Genos.

Polonio-López, B., Triviño-Juárez, J.M., Corregidor-Sánchez, A.I., Toledano-González, A., Rodríguez-Martínez, M.C., Cantero-Garrito, P., López-Martín, O., Rodríguez-Hernández, M., Segura-Fragoso, A., Romero-Ayuso, D.M., (2019). Improving self-perceived emotional intelligence in Occupational Therapy students through practical training. *Front. Psychol.* 10, pp. 1–11. <https://doi.org/10.3389/fpsyg.2019.00920>

Ranasinghe, P., Wathurapatha, W.S., Mathangasinghe, Y., Ponnamparuma, G., (2017). Emotional intelligence, perceived stress and academic performance of Sri Lankan medical

undergraduates. *BMC Med. Educ.* 17, pp. 1–7.  
<https://doi.org/10.1186/s12909-017-0884-5>

Thamizhselvan, M., Vembu, M., n.d. a study to assess the emotional intelligence among the nursing students in college of nursing, jipmer, puducherry 3.

Whitley-Hunter, B.L., (2014). Validity of transactional analysis and emotional intelligence in training nursing students. *J. Adv. Med. Educ. Prof.* 2, pp. 138–145.

Wijekoon, C.N., Amaratunge, H., De Silva, Y., Senanayake, S., Jayawardane, P., Senarath, U., (2017). Emotional intelligence and academic performance of medical undergraduates: A cross-sectional study in a selected university in Sri Lanka. *BMC Med. Educ.* 17, pp. 1–11.  
<https://doi.org/10.1186/s12909-017-1018-9>

Wodwaski, N., (2018). The Influence of Caring and Emotional Intelligence among First-year Baccalaureate Nursing Students. *Int. J. Heal. Caring* 18, pp. 1–12.