Palestinian Medical and Pharmaceutical Journal (PMPJ). 2024; 9(4): 441-450

Impact of Emotional Intelligence on Leadership Skills among Nursing Students: A Cross-Sectional Study

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Received: (11/3/2024), Accepted: (21/3/2024), Published: (1/12/2024). DOI: https://doi.org/10.59049/2790-0231.1301

ABSTRACT

Emotional intelligence is essential for nurses as it allows them to manage their own emotions and those of their patients. This research aims are to examine the effect of emotional intelligence on leadership skills among nursing students at Ibn Sina College/Nablus University. A cross-sectional study design, with convenient sample consisting of nursing students (N=134) from various levels of the program. The data was gathered at 1-3-2023 till 1-4-2023 by using an online self-administered questionnaire consisted of three parts: demographic data, emotional intelligence and leadership skills. The Pearson Correlation test was used for bivariate analysis. Independent t test and ANOVA was used to compare the means of more two groups, and regression analysis was used to assess the association between a dependent variable and one or more independent variables. The average emotional intelligence and leadership skills scores of nursing students were 3.154 and 4.030, respectively. A positive and substantial correlation (r = 0.352, P = < 0.001) was discovered by correlation analysis between EI and LS, highlighting the predictive function of EI in leadership. This relationship was validated by linear regression, which showed that certain EI categories (self-control, emotionality, and sociability) predicted leadership traits. Notably, participants' scores on "Sociability" were lower and their scores on "Encourage the Heart" greater. While variances depending on age and residence were emphasized, demographic investigation did not reveal any significant differences in EI ratings based on gender or program. Nurses with high emotional intelligence and leadership abilities are better able to offer quality care to patients, manage teams, and navigate complicated healthcare systems.

Keywords: Emotional intelligence; Leadership; Nursing; Students.

INTRODUCTION

The term of emotional intelligence has sparked considerable attention in both academia and healthcare. Despite its apparent intuitive relevance, people have just recently learned how important this concept is for comprehending the fundamental structure of relationships and how well we connect with others. Emotions are important in behavior because they provide important information that can affect our attention and mental processes, modify our physiological experiences, and stimulate action [1]. Human connections and emotions are vital in nursing care and have an impact on the overall quality of care. This aspect of the job must be emphasized in nursing school in order to assist trainees in dealing with their own emotions as well as the emotions of their patients [2].

Emotional intelligence is the capacity to perceive, analyze, and control one's own emotions as well as those of others. Emotional intelligence is becoming increasingly crucial in the nursing profession as nurses interact with patients and families in very sensitive situations. This concept is based on the assumption that improving critical thinking skills and emotional competence are the most effective strategies to increase emotional intelligence. Employers in the medical industry frequently criticize newly certified nurses for their lack of emotional maturity and critical thinking skills. One of the most important aspects of EI is leadership. EI includes the capacity to deal with stress and be technically adept, as well as the ability to accept life's truths [1, 3, 4, 5].

These talents contribute to the development of persons who respect others

and are helpful, attentive, participatory, visionary, and responsive when confronted with other people or circumstances [6]. When their managers are emotionally sensitive, health workers are more inclined to give great care and compassion. Changes in EI were connected with changes in leadership and a few caring skills among nursing students [2].

The discipline of regulating one's thoughts and behaviors in order to achieve one's goals is known as self-leadership. It is often divided into three types: Natural motives, behavioral approaches, and cognitive processes that are constructive. Leadership talents, on the other hand, include the ability to inspire and motivate others, communicate effectively, and make decisions that benefit the organization or team [7].

Despite the fact that emotional intelligence is highly valued in the nursing field, not much research has been done on how it interacts with leadership in nursing students. More research is required on this connection. The primary research question addresses whether emotional intelligence influences leadership among nursing students at Ibn Sina College/Nablus University for vocational and technical education. The aim of this study was to assess how emotional intelligence affects nursing students' leadership skills at Ibn Sina College/Nablus University. The alternative. hypotheses of this study were there is a statistically significant differences in mean scores of emotional intelligence and leadership skills of nursing students at Nablus University based on demographic factors at the significant level of p=0.05. There is a significant correlation between emotional intelligence and leadership skills among nursing students at Nablus University.

THEORETICAL FRAMEWORK

Emotional Intelligence Theory

Emotional intelligence, according to this viewpoint, is a collection of talents that allow people to comprehend and manage their own emotions as well as the emotions of others. According to this theory, people with high degrees of emotional intelligence may handle stress better and have superior leadership abilities. This notion serves as a platform for future study into the influence of emotional intelligence on nursing students' leadership characteristics and stress management [1].

Transformational Leadership Theory

Effective leadership, according to this opinion, is founded on the capacity to inspire and encourage others to collaborate toward common goals. Empathy, emotional control, and social awareness are characteristics of transformational leaders. This notion establishes a framework for investigating the link between emotional intelligence and nursing students' leadership skills [2].

METHODS

Study design and setting

A cross-sectional descriptive design was used. This study was approved by the Institutional Review Board of the N University (Approval no. Ref: Nrs. APRIL.2023/1). A convenient sampling was used. With a margin of error of 5%, a confidence level of 95%, a population size of 260, and a response distribution assumption of 50%, the Raosoft Sample Size Calculator was used to get the suggested sample size, which was 156 (Raosoft, n.d.). The study's ultimate sample size, however, was limited to 134 participants because of the 86% response rate among Ibn Sina College/Nablus University students. Nursing, midwifery and up-grading students from different levels of the program, including those in the second, third, fourth year of their studies. It is important to include students from different ethnic and cultural backgrounds to ensure diversity in the sample. Second, third and fourth nursing, midwifery and up-grading students who enrolled in Nablus University nursing program and willing to engage in the study were included in this study.

INSTRUMENTS

The data was gathered by using an online self-administered questionnaire (Google form). Questionnaire consisted of three parts: demographic data, emotional intelligence (28 statements) and leadership skills (30 statements). Data collection started at 1-3-2023 till 1-4-2023. In this study, the demographic characteristics of the subjects were examined. These characteristics included age, gender, specialty

(nurse/midwife), study level (first, second, third, fourth year), and residency place (village, city, camp).

The Instruments of Trait Emotional Intelligence Questionnaire (TEIQue) was used. It is a 30-item scale that assesses global trait EI as well as the four trait EI variables of well-being, self-control, emotionality, and sociability. Participants rated items on a 5-point Likert's scale ranging from 1 (completely disagree) to 5 (completely agree) [8].

The Leadership Practices Inventory (LPI) was used. It is a 30-item questionnaire that uses a 7-point scale to assess the frequency of key leadership activities. The LPI instrument's 30 items assess five essential leadership practices: (a) Modeling the Way; (b) Inspiring a Shared Vision; (c) Challenging the Process; (d) Enabling Others to Act; and (e) Encouraging the Heart. Six statements of the tool were used to assess the core practices of excellent leaders. Each of the five leadership techniques is paired with a set of questions. Behavioral statements are measured on a 6-point Likert's -scale: Almost Never 1; Rarely 2; Sometimes 3; Usually 4; Frequently 5; and Very Frequently 6 [9].

PROCEDURE

Recruitment

Nursing students had been recruited by sending an invitation email to all students in the nursing program. The email should contain information about the study's purpose, procedure, and requirements.

Informed Consent

Participants who were interested in participating in the study could complete the informed consent form, which explained the study's purpose and procedures.

Survey Administration

The survey could be administered using validated instruments that measure emotional intelligence, leadership skills. The participants could complete the survey online.

ETHICAL CONSIDERATIONS

The study ought to occur in accordance with ethical criteria such as informed consent, confidentiality, and voluntary involvement. The study should also take into account possible hazards and advantages for participants, as well as get ethical approval from an institutional review board.

DATA ANALYSIS

The study used the emotional intelligence (EI) variable which comprised (Well-being - emotional stability, self- esteem, and optimism; Sociability - social skills, empathy, and emotional expressiveness; Self-control - emotional regulation, impulse control, and stress management abilities; Emotionality - emotional sensitivity, emotional depth, and emotional complexity) to assess its effect on nursing students` leadership skills (LS). Univariate analysis has been used to define and summarize a single variable's distribution, whereas bivariate analysis has been used to investigate the connection between two variables. The Pearson Correlation test was used for bivariate analysis. Independent samples t test was used to compare the means of two groups, ANOVA was used to compare the means of more two groups, whereas regression analysis was used to analyze the connection between a dependent variable and one or more independent factors. Classical assumption examinations, such as normality and linearity tests, were performed before to the analysis, and all conditions were achieved.

RESULTS

Descriptive statistics

(Table 1) provides a snapshot of 134 participants involved in a study. Predominantly young participants, with 87.3% falling in the 19-25 age range. Smaller proportions in the 26-32 (6.0%) and 33-39 (6.7%) age categories. Significant female representation at 76.1%, with men comprising 23.9% of the participants. Majority from nursing (71.6%), and a significant proportion from midwifery (28.4%). Varied representation across academic levels, with the highest in the second year (38.1%). Substantial participation in the third year (32.1%) and fourth year (29.9%). Diverse residency locations, with 50.7% in villages, 31.3% in cities, and 17.9% in camps. (Table 2) provides the mean distribution dimensions of emotional intelligence (EI) and leadership skills (LS) based on a sample size (N) of 134.

Total emotional intelligence (EI) means: 3.154, SD: 0.387 and total leadership skills (LS) mean: 4.030, SD: 0.815. Individuals had higher scores in "Encourage the Heart" among leadership skills and lower scores in "Sociability" among emotional intelligence.

Table (1): Demographics Data (N= 134).

Participants` Characteristics		Frequency (N)	Percentage (%)
Age Categories	19-25	117	87.3
	26-32	8	6.0
	33-39	9	6.7
Gender	Men	32	23.9
	Women	102	76.1
Specialty	Nursing	96	71.6
	Midwifery	38	28.4
Academic level	Second year	51	38.1
	Third year	43	32.1
	Fourth year	40	29.9
Residency place	Village	68	50.7
	City	42	31.3
	Camp	24	17.9

Table (2): Mean Distribution Dimensions of Emotional Intelligence (EI) and Leadership skills (LS) (N= 134).

	Variable	Mean	SD
EI	Well being	2.913	0.511
	Sociability	2.816	0.537
	Self-control	3.606	0.540
	Emotionality	3.282	0.494
LS	Challenge the Process	3.596	1.003
	Inspire the vision	3.837	0.997
	Modeling the way	3.772	0.910
	Enable the Others	4.399	0.964
	Encourage the Heart	4.542	0.941
EI	**Emotional Intelligence**	3.154	0.387
LS	**Leadership Skills**	4.030	0.815

Emotional intelligence and Leadership Skills of nursing students based on demographic factors

(Table 3) shows the leadership skills (LS) and emotional intelligence (EI) mean scores and standard deviations for nursing students at Nablus University, subdivided by a number of demographic variables.

Emotional intelligence

There was no statistically significant difference in the mean EI scores between male (3.055 ± 0.531) and female (3.185 ± 0.326) nursing students, according to the independent samples t test ($p = 0.2$). Furthermore, no statistically significant difference ($p = 0.059$) was seen in the mean EI ratings between nursing (3.163 ± 0.433) and midwifery (3.131 ± 0.237) students. An ANOVA test indicated a significant statistical difference ($p < 0.001$) in the mean EI scores according to age groups. In particular, the mean for the age group 33-39 (3.467 ± 0.847) differed considerably from the means of the other age groups. There was no statistically significant difference ($p = 0.157$) in the mean EI ratings between academic levels. Based on resident location,

there were statistically significant variations in mean EI ratings (p = 0.013). The mean of the participants differed in favor of the city (3.292 ± 0.448), then for the village (3.113 ± 0.362), and finally the camp (3.030 ± 0.267).

Leadership Skills

There was no statistically significant difference in the mean LS scores between male and female nursing students (p = 0.545) or between nursing and midwifery students (p = 0.113) according to the independent samples t test. Based on age groups, the ANOVA test revealed statistically significant differences in mean LS scores (p = 0.027). The mean (4.101± 0.805) for the 19–25 age group is considerably different from the other age groups. Despite having noticed that the mean LS scores among the various academic levels varied statistically significantly (p = 0.002). The mean for second-year students was 4.343 ± 0.800, which is substantially different from the means of third- and fourth-year students (3.855 ± 0.888 and 3.819 ± 0.620). No statistically significant difference in mean LS scores based on residency place (p = 0.53).

Table (3): Emotional intelligence and Leadership skills of nursing students based on demographic factors**.**

Demographic variables		EI			LS		
		M	SD	P-value	M	SD	P-value
Gender	Male	3.055	0.531	0.2[a]	4.119	1.004	0.545[a]
	Female	3.185	0.326		4.002	0.749	
Specialty	Nursing	3.163	0.433	059[a]	4.100	0.820	0.113[a]
	Midwifery	3.131	0.237		3.853	0.783	
Age categories	19-25	3.161	0.302	< 0.001[b]	4.101	0.805	0.027[b]
	26-32	2.694	0.384		3.498	0.651	
	33-39	3.467	0.847		3.575	0.823	
Academic level	Second year	3.188	0.320	0.157[b]	4.343	0.800	0.002[b]
	Third year	3.061	0.357		3.855	0.888	
	Fourth year	3.211	0.479		3.819	0.620	
Residency place	Village	3.113	0.362	0.013[b]	4.091	0.951	0.53[b]
	City	3.292	0.448		3.913	0.567	
	Camp	3.030	0.267		4.061	0.768	

P- values were based on [a] Independent t test and [b] AOVA teat
EI = Emotional Intelligence, LS = Leadership skills

Correlation between Emotional intelligence and Leadership Skills of nursing students

For a variety of independent factors related to emotional intelligence (EI) and the dependent variables of leadership skills (LS), (Table 4) presents correlation coefficients (r) and associated p-values (P). A statistically significant positive association (r = 0.352) was found between EI and LS, as evidenced by the p-value (< 0.001). The p-values showed that there were positive, statistically significant relationships between EI and every LS domain. Encourage the Heart received the greatest score (r = 0.380), while Challenge the Process received the lowest (r = 0.240). With the exception of a marginally significant link with Encourage the Heart (r = 0.17, p = 0.049), there were no relationships found between the wellbeing domain of EI and any of the LS domains. There were noteworthy relationships between the sociability domain of EI and Encourage the Heart (r = 0.3, p = 0.002) and Modeling the Way of LS (r = 0.18, p = 0.042). There were significant relationships between all LS dimensions and the emotionality and self-control domains of EI.

Table (4): Correlation between Emotional intelligence and Leadership Skills of nursing students.

Dependent variables	Independent variables									
LS	EI		Well, being		Sociability		Self-control		Emotionality	
	(r)	(P)	(r)	(P)	(r)	(P)	(r)	(P)	(r)	(P)
	0.352	< 0.001	0.043	0.321	0.2	0.023	0.511	< 0.001	0.313	< 0.001
Challenge the Process	0.240	0.005	-0.12	0.16	0.09	0.268	0.52	< 0.001	0.21	0.017
Inspire a Shared Vision	0.308	< 0.001	0.048	0.581	0.06	0.464	0.513	< 0.001	0.29	0.001
Modeling the Way	0.311	< 0.001	0.09	0.323	0.18	0.042	0.37	< 0.001	0.29	0.001
Enables Others to Act	0.255	0.003	0.011	0.896	0.14	0.097	0.313	< 0.001	0.29	0.001
Encourage the Heart	0.380	< 0.001	0.17	0.049	0.3	0.002	0.44	< 0.001	0.25	0.004

As shown in (Table 5), with reference to simple linear regression analysis for different models. There was a positive correlation between leadership skills (LS) and emotional intelligence (EI) (Beta = 0.631). At the standard significance value of 0.05, the p-value of 0.018 indicated that higher levels of emotional intelligence are associated with increased leadership skills. The self-control domain of EI (Beta = 0.511, p = < 0.001) had a large correlation with followed by emotionality (Beta = 0.313, p = < 0.001) and then sociability (Beta = 0.173, p=0.046). This linear regression analysis provided valuable insights into how Emotional Intelligence aligned with specific leadership dimensions. These results emphasize the significance of Emotional Intelligence in influencing and predicting leadership behaviors related to encouraging the heart (Beta = 0.4, p = < 0.001), modeling the way (Beta = 0.31, p = < 0.001), inspiring a shared vision (Beta = 0.31, p = < 0.001), challenging the process (Beta = 0.24, p = < 0.005), and enabling others to act (Beta = 0.26, p = < 0.003).

Table (5): Linear Regression Analysis: Exploring the Associations between Emotional Intelligence and Various Leadership Dimensions.

Model	Beta	P
EI [a] * LS [b]	0.631	0.018
Wellbeing [a] * LS [b]	0.043	0.624
Sociability [a] * LS [b]	0.173	0.046
Self-control [a] * LS [b]	0.511	< 0.001
Emotionality [a] * LS [b]	0.313	< 0.001
EI [a] * Challenge the Process [b]	0.240	0.005
EI [a] * Inspire a Shared Vision [b]	0.31	< 0.001
EI [a] * Modeling the Way [b]	0.31	< 0.001
EI [a] * Enables Others to Act [b]	0.26	0.003
EI [a] * Encourage the Heart [b]	0.4	< 0.001

[a] Independent Variable, [b] Dependent Variable
P- values were based on simple linear regression
EI = Emotional Intelligence, LS = Leadership skills

DISCUSSION

This study aimed to examine the relationship between emotional intelligence and leadership skills among nursing students. Between total EI and LS, a statistically significant positive correlation was discovered. Challenge the process had the lowest correlation, while encourage the heart had the most. There was no correlation found

between wellbeing in EI and other LS dimensions, although there was a marginally significant association with encourage the heart. In LS, sociability showed a strong correlation with modeling the way and encourage the heart. There were noteworthy correlations between the emotionality and self-control domains of emotional intelligence and all LS measures. This result was consistent with a previous study that revealed nursing students' leadership orientations and emotional intelligence scores were positively correlated. This supported the notion that emotional intelligence was important for developing leadership abilities in the nursing industry by indicating that higher emotional intelligence was linked to more successful leadership orientations in nursing students [10].

The mean EI scores of male and female students, as well as those of nursing and midwifery students, did not significantly differ from one another. Age groupings did, however, differ significantly, with the 33–39 age group standing out from the rest. Academic levels did not significantly affect mean EI scores; however, residence location did, with city dwellers benefiting more. According to a previous study, nursing students had greater levels of emotional intelligence than engineering students. It was also shown that women have somewhat higher emotional intelligence than males. Surprisingly, emotional intelligence and prior experience providing care did not significantly correlate [11]. While another previous study finding, showed that an emotional intelligence test revealed that nursing students outperformed computer students. Additionally, on both tests, emotional intelligence increased with age. Furthermore, on these measures of emotional intelligence, women fared better than males [12]. The age group mean was significantly different from the other age groups' averages, which was consistent with Snowden et al. (2015) findings [12]. Other studies, such as Beauvais's, explored the emotional intelligence of predominantly Caucasian and female nursing students, revealing moderate emotional intelligence levels [1]. Budler suggested that nursing students' emotional intelligence evolves with education and age, suggesting room for improvement [13]. Male and female students studying nursing and midwifery did not significantly differ in their emotional intelligence levels, according to another study. Nonetheless, the research found that these students' typical lifestyle, age, year of study, and participation in a nursing school were all significantly correlated with their emotional intelligence [14, 15]. Gender and specialty did not significantly differ in terms of LS. Significant differences were seen between age groups and academic levels, with second-year students and the 19–25 age group showing the most differences. The LS scores did not significantly change based on residency place.

According to another study, the association between leadership, caring, and emotional intelligence (EI) among undergraduate nursing students was highlighted in the study that found favorable associations between increases in EI and leadership and caring qualities, but it did not discover significant changes in total EI scores over time. This suggests that nursing students' leadership and caring qualities grow along with their emotional intelligence (EI), highlighting the connection between EI and effective nursing leadership. EI was particularly important for nursing students' flexibility and emotional control [16].

Esen's study utilized structural equation modeling to reveal a positive and significant impact of emotional intelligence on self-leadership [17]. Heidarie's findings indicated highly significant correlations between emotional intelligence and problem-solving skills [3]. Wang's study highlighted that self-efficacy fully mediated the connection between emotional intelligence and active coping, while self-leadership directly influenced active coping [7]. Carragher and Gormley emphasized the conceptual link between leadership and emotional intelligence, underscoring the need for further robust studies in the international healthcare field [4]. Other study showed that there was a statistically significant decrease of total EI scores over time from the beginning and end of a baccalaureate nursing program [18].

There are several limitations to the current study. The study may be constrained

by self-reported data, which may be biased or socially desirable. The findings' generalizability may be limited by the sample size of nursing students. So, expanding participant access through cooperation with additional groups or universities helps increase sample size. More recruiting is possible when data collection is spread across several semesters and study locations. Over time, a longitudinal research design produces more insightful findings, which increases the sample size. Recruitment is facilitated by broader inclusion criteria, but relevance must be preserved. Fair representation is ensured by random selection. Enrollment of participants is maintained by ongoing recruiting during the research, increasing the sample size.

CONCLUSION

The overall LS mean was 4.030 with an SD of 0.815, while the overall EI mean was 3.154 with a standard deviation (SD) of 0.387. Notably, individuals showed lower scores in the EI "Sociability" area and higher scores in the LS "Encourage the Heart" domain. It was found that there were no statistically significant variations in the mean EI scores between students who were male and female or between students who were nursing and midwifery. On the other hand, notable differences were noted according to age groups and places of residence. A statistically significant and positive correlation was observed between EI and LS, suggesting a relationship between elevated EI and enhanced leadership abilities. Challenge the Process had the lowest correlation ($r = 0.240$) and Encourage the Heart the greatest ($r = 0.380$). This relationship was further supported by the linear regression analysis, which showed that the leadership characteristics were strongly predicted by emotional intelligence, especially in the areas of self-control, emotionality, and sociability. These results highlight the role that emotional intelligence plays in influencing and forecasting different leadership behaviors in nursing students. The study emphasizes the need for focused interventions to improve emotional intelligence and leadership abilities within nursing education programs, which offers insightful information for educators and practitioners.

It is recommended that emotional intelligence training be incorporated into the nursing curriculum at Ibn Sina College/Nablus University for vocational and technical education in light of the positive effects of emotional intelligence on leadership abilities. Such instruction ought to give nursing students the emotional skills they require to manage challenging circumstances in their future professional practice and to succeed as leaders. Encourage nursing students to develop their leadership abilities; nursing educators and administrators should offer chances for nursing students to do so. Workshops, seminars, and mentorship programs may all help with this. Students of nursing will be able to improve their leadership abilities through these programs, which are essential for their professional practice. Conduct further research; this study provides preliminary findings on the relationship between emotional intelligence and leadership skills among nursing students at Ibn Sina College/Nablus University for vocational and technical education (Palestine). Further research is needed to explore this relationship in more depth, particularly in the context of nursing education in Palestine. Additionally, future studies can investigate the impact of emotional intelligence on other important outcomes in nursing, such as job satisfaction and patient outcomes.

IRB Approval Letter

Your Study titled as "Impact of Emotional Intelligence on Leadership Skills among Nursing Students: A cross-sectional study" has been viewed by Nablus University for Vocational and Technical Education IRB Committee and was approved on

Jameeleh Taleb, MCH

IRB Committee Chairman

Nablus University for Vocational and Technical Education/ Ibn Sina College for

Health Professions,
jammeelehnurse@nu-vte.edu.ps

Date Approved: 26-2-2023

Consent for Publication

I grant permission for the publication of my article titled "Impact of Emotional Intelligence on Leadership Skills among Nursing Students: A cross-sectional study." I understand the purpose and content of the publication and agree to its dissemination.

Data availability statement

Data used for this study will be made available upon request.

Author's contribution

Hamdallah H. Khaled: Conceptualization, Data collection, Writing-Original draft preparation, Methodology, Software analysis, Supervision, writing-Reviewing and Editing.

Disclosure statement

The author disclosed no conflicts of interest.

Financial Disclosure

The author stated that they got no financial assistance for this work.

Acknowledgement

Thank you to all of the students that participated in this study

ABBREVIATIONS

"ANOVA" - "Analysis of Variance".

"df" - "degrees of freedom

"Sig. - Significance

"F" typically refers to the F-statistic or F-ratio, which is a test statistic used in ANOVA and regression analysis to compare the variability between groups or models to the variability within groups or models.

N- Frequency

EI - Emotional Intelligence

LS - Leadership Skill

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