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The Correlation between Emotional Intelligence and Professional Identity among Operating Room Technologists and Anesthesiologists at Hospitals Associated with Birjand University of Medical Sciences

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Abstract

Emotional Intelligence is a key determinant of success in professional and social domains, characterized by the ability to comprehend, regulate, and utilize emotions effectively. Professional identity, a critical construct in healthcare, reflects an individual's understanding of their roles, values, and professional objectives.

This study aimed to investigate the correlation between emotional intelligence and professional identity among surgical technologists and anesthesiologists in hospitals affiliated with Birjand University of Medical Sciences, to provide insights for enhancing professional competencies.

This correlational study included 230 surgical technologists and anesthesiologists from hospitals associated with Birjand University of Medical Sciences. Participants completed a demographic questionnaire, the Professional Identity Questionnaire, and the Schering Emotional Intelligence Questionnaire. Data were analyzed using SPSS version 24, employing descriptive statistics and inferential tests, including correlation analysis. A significance level of $p<0.05$ was considered for all statistical tests.

The mean age of participants was 32.74 ± 6.64 years, with 48% male and 52% female. Emotional intelligence (mean score: 101.73 ± 13.02) and professional identity (mean score: 55.95 ± 12.77) demonstrated a significant positive correlation ($\rho = 0.173$, $p<0.001$). Dimensions of EI, such as self-motivation, self-awareness, self-control, empathy, and social skills, were significantly associated with various aspects of professional identity, including professional self-image, social comparison, and social modeling. The strongest correlation was observed between social skills and social modeling ($\rho=0.302$, $P<0.01$).

The findings underscore the vital role of emotional intelligence in shaping professional identity among operating room and anesthesia technologists. Enhancing EI through targeted training programs could improve professional identity, contributing to better job performance and quality of care.

Keywords: Emotional Intelligence, Professional Identity, Surgical Technologists, Anesthesiologist, Healthcare

Introduction

Emotional Intelligence, a contemporary notion in behavioral and psychological sciences, refers to the capacity to comprehend, regulate, and utilize emotions proficiently (1, 2). This notion, initially proposed by Mayer and Salovey in 1990, encompasses four fundamental dimensions: the perception and expression of emotion, the facilitation of thought through emotion, emotional cognition, and the management of emotion (3). Goleman et al. (1995) described emotional intelligence as a collection of competencies, including spontaneity, impulse regulation, empathy, and emotional management, that significantly enhance individual performance in social and professional contexts (4). The nursing profession, particularly surgical technologists and anesthesiologists, necessitates elevated emotional intelligence due to the distinctive nature of their work environment.

The operating room, a highly demanding medical setting, subjects individuals to stressors including time constraints, surgical complications, chemical and infectious risks, and intricate team dynamics (5). The capacity to regulate emotions and foster productive interactions in these circumstances can profoundly influence the quality of medical services and patient safety (6). Studies demonstrate that individuals with diminished emotional intelligence struggle to navigate challenging circumstances, potentially resulting in decreased job performance and jeopardizing patient safety. In addition to emotional intelligence, professional identity is crucial in health professions as a determinant of job performance quality (7, 8). Professional identity embodies an individual's comprehension of professional tasks, beliefs, and objectives, developed over time through engagement with educational and professional contexts (9-11). A positive professional identity can enhance job happiness, work dedication, and self-confidence, while mitigating burnout and career abandonment. The inadequate development of this identity may result in less motivation, heightened stress, and a decline in the quality of healthcare services (12, 13).

A multitude of studies have been undertaken about emotional intelligence and professional identity. Fattahi et al. (1400) demonstrated in their study that the facets of emotional intelligence are highly correlated with the aspects of social responsibility among nurses, and that enhancing emotional intelligence can influence social responsibility (14). Sun et al. (2020) conducted a study on nursing students in China, highlighting the adverse correlation between anxiety induced by the COVID-19 epidemic and professional identity, and underscoring the necessity for psychological counseling services to alleviate stress and enhance professional identity (15). Ghadami et al. (2018) demonstrated a substantial correlation between emotional intelligence and professional socialization among surgical technology students, indicating that enhancing these skills can bolster professional identity (16). Nonetheless, the research conducted by Foroughi et al. (2019) yielded conflicting findings and failed to identify a significant correlation between emotional intelligence and job satisfaction among surgical technologists (17).

Given the significance of teamwork in the operating room, along with the challenges and dynamics of this field, and the conflicting results of research on emotional intelligence and the professional identity of surgical technicians, it is essential to investigate the professional identity of these students and its correlation with emotional intelligence.

Objectives

This study aims to examine the correlation between emotional intelligence and professional identity among surgical technologists and anesthesiologists in hospitals associated with Birjand University of Medical Sciences.

Methods

This correlational study targeted a statistical population comprising all surgical technologists and anaesthesiologists with associate, bachelor's, or master's degrees employed in affiliated hospitals. Sampling was conducted utilizing a cluster approach, resulting in a calculated sample size of 230 persons. This estimation utilized Cochran's method for finite populations, incorporating a 95% confidence level, a 5% margin of error, and an anticipated response distribution of 50%.

The inclusion criteria for participation in the study required a minimum of six months of work experience in educational and medical institutions associated with Birjand University of Medical Sciences, a willingness to engage in the research, and an academic qualification of at least an associate degree in surgical technology or anaesthesia. Exclusion criteria were confined to instances when questionnaires were either not submitted or submitted incompletely.

Data collection was conducted using three standard tools. The initial instrument utilized was a demographic questionnaire designed to gather information regarding age, gender, marital status, economic status, and workplace affiliation. The second instrument employed was the Professional Identity Questionnaire, created by Hao et al. (2014), consisting of 17 items distributed across six dimensions: professional self-image, job achievements, social comparison, self-reflection, professional autonomy, and social modelling. The questionnaire utilised a five-point Likert scale from "strongly disagree" to "strongly agree," with its validity and reliability corroborated by both international and Iranian research. A study in Iran utilized confirmatory factor analysis to establish construct validity, demonstrating factor loadings and average variance extracted (AVE) exceeding 0.50. Academic experts and a group of students also approved the content and face validity. The questionnaire demonstrated satisfactory internal consistency, indicated by a Cronbach's alpha of 0.81 and composite reliability exceeding 0.85 (18, 19). The third instrument utilized was the Schering Emotional Intelligence Questionnaire, consisting of 33 items designed to evaluate five dimensions: self-motivation (items 1, 9, 15, 20, 21, 26, 31), self-awareness (items 6, 10, 12, 14, 24, 27, 32, 33), self-control (items 3, 4, 17, 22, 25, 29), empathy (items 2, 5, 11, 16, 18, 23, 30), and social skills (items 7, 8, 13, 19, 28). The questionnaire employed a five-point Likert scale, with a total score ranging from 33 to 165, and its validity has been confirmed. Mansouri (2001) reported a Cronbach's alpha of 0.84 for the entire scale, indicating high internal consistency. Construct validity was supported through significant correlations between emotional intelligence scores and those of Cooper-Smith's Self-Esteem Scale ($r = 0.63$, $p < 0.01$). Similarly, Bonakdari (2005) found a correlation coefficient of 0.62 between the Schering and Mayer Emotional Intelligence tests, further confirming construct validity. Additionally, Farzadniya (2009) reported a Cronbach's alpha of 0.84, and AkhondLutfali et al. (2011) reported an internal consistency of 0.85, both supporting the reliability of the Persian version of the Schering Emotional Intelligence Questionnaire. These findings suggest that the instrument possesses acceptable reliability and validity for use in Iranian populations (20-23).

Following the approval of the research design by the Ethics Committee of Birjand University of Medical Sciences (Ethics Code: IR.BUMS.REC.1401.211) and the receipt of an official letter of introduction, the researcher coordinated with hospital managers to make the necessary arrangements for data collection. Initially, the study objectives were communicated to the participants, and informed consent was secured. The questionnaires were completed through self-declaration, with participants assured of the confidentiality of their provided information. The study's inclusion criteria comprised willingness to participate, informed consent, mental and physical health, a minimum of six months of experience in hospitals affiliated with Birjand University of Medical Sciences, and the absence of chronic mental illnesses or substance use. The exclusion criterion for the study was the incomplete completion of the

questionnaires, defined as having more than 20% of the questions unanswered.

Data analysis was conducted utilizing SPSS version 24 software. Central and dispersion indices, including mean and standard deviation, were used in the descriptive statistics section. In the inferential statistics section, independent t-tests were employed to compare the mean scores of emotional intelligence and professional identity based on binary demographic variables such as gender and marital status. Additionally, analysis of variance (ANOVA) was used for comparisons across variables with more than two categories, and Pearson or Spearman correlation tests were applied based on data normality to examine relationships between emotional intelligence and professional identity.

Results

This research examined the correlation between emotional intelligence and professional identity among surgical technologists and anesthesiologists in hospitals associated with Birjand University of Medical Sciences. This study involved 230 participants. The mean age of participants was 32.74 ± 6.64 years. Of the participants, 96 (48%) were male and 104 (52%) were female. In terms of marital status, 65 participants (32.74%) were single, 113 (56.8%) were married, 10 (5%) were divorced, and 11 (5%) were widowed. Regarding educational level, 30 participants (14.6%) held an associate degree, 150 (73.2%) a bachelor's degree, and 25 (12.2%) a master's degree (Table 1).

The data distribution was assessed using the Kolmogorov-Smirnov test, confirming the assumption of normality. The participants had an average emotional intelligence score of 101.73 ± 13.02 (Table 2), indicating a relatively high level of emotional intelligence. The mean professional identity score was 55.95 ± 12.77. A statistically significant direct relationship was found between emotional intelligence and professional identity ($\rho = 0.173$, $p < 0.001$), based on Spearman's correlation test (Table 3). This finding suggests that higher emotional intelligence is associated with stronger professional identity.

The study also explored the relationship between various dimensions of emotional intelligence and professional identity using Spearman's correlation test. The findings indicated a statistically significant direct relationship between the self-motivation dimension and several aspects of professional identity: professional self-image ($\rho = 0.155$, $p < 0.01$), social comparison and self-reflection ($\rho = 0.134$, $p < 0.01$), professional independence ($\rho = 0.174$, $p < 0.01$), and social modeling ($\rho = 0.159$, $p < 0.01$) (Table 4). A notable correlation was identified between self-awareness and the factors of social comparison, self-reflection, and professional independence (Table 4). A statistically significant relationship was also identified between the self-control and social skills dimensions and all dimensions of professional identity (Table 4). A significant relationship was observed in the empathy dimension with professional self-image, social comparison, self-reflection, professional independence, and social modeling ($p < 0.05$; Table 4). The strongest correlation identified was between social skills and social modeling ($\rho = 0.302$, $p < 0.01$; Table 4).

Discussion and Conclusion

This study aimed to examine the relationship between emotional intelligence and professional identity among surgical technologists and anesthesiologists in hospitals affiliated with Birjand University of Medical Sciences. This study's results indicate a statistically significant direct relationship between emotional intelligence and professional identity, whereby an increase in emotional intelligence correlates with an enhancement in professional identity. This finding underscores the significant role of emotional intelligence in achieving professional and social success, manifested through enhanced social skills, conflict resolution abilities, and strengthened interpersonal relationships.

Prior research has yielded findings that align with those of this study. A study by Imani et al. demonstrated that high emotional intelligence in critical care nurses facilitates the management of occupational and environmental stress, leading to improved professional performance (24). Rigney and Baernholdt highlighted the significance of emotional intelligence in managing occupational stress and its beneficial impact on clinical competence (25). Conversely, research by Omidi et al. indicated the average emotional intelligence levels among nurses and highlighted the necessity for training to enhance this competency (26).

Table 1. Frequency Distribution of Demographic Variables

Variable	Category	Frequency	Percentage (%)
Gender	Male	96	48
	Female	104	52
Marital Status	Single	65	32.74
	Married	113	56.8
	Divorced	10	5
	Widowed	11	5
Education	Associate Degree	30	14.6
	Bachelor's Degree	150	73.2
	Master's Degree	25	12.2

Table 2. Central and Dispersion Indicators of Emotional Intelligence and Its Dimensions among Surgical Technologists and Anesthesiologists

Variable	Mean	Standard Deviation	Median	1st Quartile	3rd Quartile	Minimum	Maximum
Self-Motivation	16.41	6.18	18	15	25	10	31
Self-Awareness	17.76	6.46	19	17	29	11	32
Self-Control	20.01	5.59	20	18	30	14	33
Empathy	18.11	5.92	18	13	28	11	33
Social Skills	21.10	7.03	21	18	25	14	41
Overall Emotional Intelligence	110.02	12.74	110	97	148	74	110

Table 3. Central and Dispersion Indicators of Professional Identity and Its Dimensions among Surgical Technologists and Anesthesiologists

Variable	Mean	Standard Deviation	Median	1st Quartile	3rd Quartile	Minimum	Maximum
Professional Self-Image	19.46	5.47	20	15	24	6	30
Job Achievements	19.96	5.78	20	10	26	4	32
Social Comparison and Self-Reflection	16.07	5.38	15	9	22	4	30
Professional Independence	19.12	6.11	20	10	28	2	32
Social Modeling	19.54	5.55	19	11	28	4	33
Overall Professional Identity	55.95	12.77	58	46	84	22	66

Table 4. Correlation Between Emotional Intelligence Dimensions and Professional Identity Dimensions Among Surgical Technologists and Anesthesiologists Using Spearman's Correlation Test

Variable	Self-Motivation	Self-Awareness	Self-Control	Empathy	Social Skills
Professional Self-Image	0.155 (p = 0.002)	0.093 (p = 0.120)	0.244 (p = 0.001)	0.201 (p = 0.006)	0.155 (p = 0.011)
Job Achievements	0.102 (p = 0.210)	0.067 (p = 0.410)	0.188 (p = 0.080)	0.107 (p = 0.330)	0.155 (p = 0.230)
Social Comparison & Self-Reflection	0.134 (p = 0.063)	0.174 (p = 0.056)	0.282 (p = 0.002)	0.194 (p = 0.005)	0.182 (p = 0.006)
Professional Independence	0.174 (p = 0.320)	0.132 (p = 0.713)	0.191 (p = 0.264)	0.182 (p = 0.858)	0.269 (p = 0.037)
Social Modeling	0.159 (p = 0.059)	0.069 (p = 0.851)	0.182 (p = 0.003)	0.244 (p = 0.004)	0.302 (p = 0.000)

Although attaining PIF is a formidable endeavour, one factor that potentially facilitates PIF is emotional intelligence (EI). EI is developed through life experiences and pertains to personal and social awareness, as well as the regulation of emotions and relationships. EI is essential for both personal and professional success (8).

The current study indicates a significant correlation between high emotional intelligence and professional identity among individuals. The findings indicated that various dimensions of emotional intelligence, including self-motivation,

self-awareness, self-control, empathy, and social skills, were significantly associated with different aspects of professional identity, such as professional self-image, social comparison, self-reflection, professional independence, and social modeling. A strong correlation exists between social skills and social modeling, underscoring the significance of communication skills in the formation of professional identity.

This study's findings align with Ghorbani et al.'s research, which indicates a positive relationship between identity dimensions and emotional intelligence (27). Professional identity is defined as a specific conception of self, encompassing values, goals, and beliefs. This identity is shaped through social interactions and cultural contexts, and it is reinforced by emotional intelligence. Research, including the study by Maria Augusto Landa, indicates that individuals with low emotional intelligence encounter more workplace conflicts and exhibit poorer physical and mental health. Conversely, those with high emotional intelligence demonstrate enhanced capacity to manage tensions and foster professional identity (28).

This study had multiple limitations, including its concentration on a particular geographical area and the absence of extension to other regions of Iran. Moreover, the dependence on self-reported data concerning emotional intelligence and professional identity may have resulted in response biases. The study's cross-sectional design further restricts the capacity to infer causal relationships among the variables. Notwithstanding these constraints, the results suggest that emotional intelligence training fosters the evolution of professional identity. Surgical technologists and anaesthesiologists must augment their knowledge and skills while refining their communication abilities, under the guidance of professors who exemplify a robust and positive professional identity.

This study's findings demonstrate that emotional intelligence is essential for human resource empowerment and the formation of professional identity. Improving emotional intelligence allows individuals to address professional and personal challenges effectively, leading to enhanced performance in workplace environments. Emphasizing this component and creating appropriate training programs to enhance emotional intelligence and professional identity can markedly elevate the quality of services provided by healthcare personnel. Nursing managers can enhance the professional identity of surgical technologists by providing support and training in emotional intelligence, thereby improving their engagement and sense of belonging within the professional environment. Furthermore, emotional intelligence and professional identity are developed and refined through secondary socialisation, especially in academic settings. Medical education policymakers and administrators should organise seminars, classes, and workshops for faculty members and students to foster the development of emotional intelligence, which is essential for strengthening the professional identity of healthcare students.

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