

Relationship Between Professional Identity Development and Clinical Learning Environment: Nursing Students' Perspective

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Abstract

Background: The development of a professional identity is a core foundation of the nursing profession, because it promotes students in developing an awareness of their profession. Development of a professional identity alongside with clinical learning environment. The clinical learning environment is the most important factor which has the greatest impact on nursing students' professional identities. **Aim:** To explore the relationship between professional identity development and clinical learning environment from nursing students' perspective. **Research design:** A descriptive correlational exploratory research design was used. **Setting:** This study was conducted at the Faculty of Nursing, Alexandria University, Egypt. **Subjects:** The subjects of this study comprised of all nursing students enrolled in the seventh academic semester ($N=791$) during the first academic term of the academic year 2023-2024. **Tools:** Professional Identity Scale for Nursing Students (PISN) and Abbreviated Clinical Learning Environment Inventory-19 (The abbreviated CLEI-19) were used to collect data. **Findings:** More than half of the students (50.4%) had a high level of professional identity, the majority of nursing students (76.6%) had a positive perspective regarding their clinical learning environment. Moreover, there was a statistically significance positive correlation between students' professional identity development and their clinical learning environment ($r = 0.398^*$, $p < 0.001^*$). **Conclusion:** The students' overall professional identity is positively correlated with their overall clinical learning environment. Moreover, findings confirmed that a positive clinical learning environment played a crucial role in developing students' professional identity. **Recommendations:** Educational workshops should be conducted for nurse educators to increase their awareness about the concept of professional identity and how to develop it for nursing students. Clinical facilitators and nurses in clinical unit should be cooperated to construct a comprehensive, positive, and effective environment for clinical learning to students to improve their professional identity

Keywords: Professional Identity, Clinical Learning Environment, Nursing Students.

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Introduction

Nursing education is founded on two essential educational processes are clinical and theoretical education. The theoretical education comprised evidence-based scientific knowledge about standardized nursing practice. While, the application of theoretical understanding and monitoring of nursing interventions in healthcare settings and students developing identity about nursing profession constitute clinical education. Also, nursing education plays a crucial role in Professional Identity Development (PID) of nursing students. Throughout the process of education, not only acquiring new skills and knowledge but also internalizing the ethics, values, and behaviors that characterize the nursing (Pullen, 2021; Lundell Rudberg et al., 2022).

Professional Identity (PI) is a core foundation of the nursing profession. Over the past few years, higher education has become increasingly focused on professional identity development and the elements that influence it. A major concern throughout the process of transitioning from student to practicing nurse is professional identity, which may have a consequence on retention rates (Johnson et al., 2012; Brewington et al., 2020). The PI in nursing is defined by Godfery and Young, (2020) as “a sense of oneself, and in relationship with others, which is influenced by characteristics, norms, and values of the nursing discipline, resulting in an individual thinking, acting and feeling like a nurse”.

The International Society for Professional Identity in Nursing (ISPIN) identifying the four nursing professional identity domains. These four domains are values and ethics, knowledge, leadership, and professional comportment. These domains help students and nurses at all levels in developing and embracing their professional identities in all work and learning environments (Hite & Godfrey, 2019; Rhoda & Godfrey, 2022). Throughout nursing students’ lives, they form their

professional identities. Upon entering the nursing field, nursing students' professional identity forms the cornerstone of their nursing practice and has a lasting impact on their career (Philippa et al., 2021; Lundell Rudberg et al., 2022).

Furthermore, professional identities are constantly developed and redeveloped through working lives and experience and not static. The process of development a professional identity has been characterized as dynamic and continual, impacted by a variety of factors (Mbalinda et al., 2024). These factors can be classified as internal factors and external factors. Internal factors include gender, professional self-image, self-reflection and satisfaction with clinical learning environment. While, external factors include degree type, grade level, social comparison, retention benefit and risk of turnover, and social modelling (Jinyan & Tingting, 2019).

Clinical Learning Environment (CLE) has a pivotal role in PID of nursing students. As it supports in developing competent nursing students not just with clinical skills additionally with a deep sense of identity in their chosen profession. The CLE is defined as an actual place with an organizational atmosphere influenced by psychosocial elements and where communication occurs (De Swardt, 2019).

In CLE, nursing students may develop their professional identities as nurses and gain practical skills by engaging in direct patient care. They also frequently collaborate with other healthcare professionals in this role. This experience helps nursing students recognize their unique abilities within a multidisciplinary team. Also, developing their professional identity obtain the expertise and competencies that characterize them as professionals in the healthcare field from laypeople (Pullen, 2021; Vabo et al., 2022; Mbalinda et al., 2024).

Moreover, there are two key factors play an important role in clinical learning environment. These factors are clinical facilitators support and satisfaction with clinical placement. Clinical facilitators operate as a bridge between academic and clinical settings. Additionally, they are providing supervision and evaluation of nursing students' clinical knowledge and skills and support the students during learning. Effective clinical supervision can also upgrade the professional identity (Rodríguez-García et al., 2021; Mohamed et al., 2021).

It is crucial to have clinical facilitators in the clinical environment to act as role models for students during clinical learning. This is because having a clinical facilitator in the CLE helps students advance identify with the nursing profession and feel confident in their future as nurses. Also, satisfaction in clinical placement impact in belonging and identity as a nurse. The length, quantity, and quality of these clinical rotations are associated with students' satisfaction, a feeling of acceptance within the profession of nursing, and the formation of professional identity (Maginnis, 2018; Nie et al., 2022).

Furthermore, establishing satisfactory clinical placements is crucial for nursing students to develop fundamental clinical skills and competence and to meet their curriculum goals. In addition, they must be satisfied with the experience they have received in clinical settings. Higher satisfaction levels among students are associated with increased effort, consistent attendance, ongoing education, successful graduation, and the development of a professional identity that fosters long-term commitment to the nursing profession (Nejad et al., 2019; Elhosiény et al., 2020; Rodríguez-García et al., 2021).

Also, the clinical learning environment is crucial in transforming nursing students into professionals and equipping them with the

skills necessary for professional nursing. In this environment, students become familiar with the circumstances of their profession and how it is perceived. Positive perception of the clinical learning environment is also a significant component that has a positive relationship with development of professional identity (Najafi Kalyani et al., 2019; Elhosiény et al., 2020; Mbalinda et al., 2023).

When investigating the relationship between clinical learning environments and professional identity among nursing students, selecting fourth-level nursing students is particularly significant because fourth-level nursing students are typically in the final stages of their undergraduate education. At this point, they have accumulated substantial theoretical knowledge and practical experience through prior clinical placements. This advanced stage of education allows researchers to assess how well these students can integrate their learning experiences into a cohesive professional identity.

Additionally, in the field of nursing education, understanding the relationship between professional identity development and the clinical learning environment from nursing students' perspectives is crucial for several reasons. This exploration can provide valuable insights into how nursing students perceive their roles as future healthcare professionals and how their learning experiences in clinical settings shape their professional identities. By delving into this relationship, educators, policymakers, and healthcare institutions can enhance nursing education programs to better support students in their journey towards becoming competent and confident nurses. That's why the researcher intended to conduct this study.

Aim of the study:

This study aimed to explore the relationship between the professional identity development and the clinical

learning environment from nursing students' perspective.

Research Questions:

The following questions were developed:

*Q1: What is nursing students' perspective regarding professional identity development?

*Q2: What is nursing students' perspective regarding their clinical learning environment?

*Q3: What is the relationship between nursing students' professional identity development and their clinical learning environment?

Materials and method

Materials

Design: A descriptive correlational exploratory research design was used to accomplish this study

Setting: The study was conducted at Alexandria University's Faculty of Nursing, which is affiliated with the Ministry of Higher Education in Egypt. The Faculty of Nursing employs a credit-hour system for undergraduate and graduate programs. To obtain a baccalaureate degree in nursing sciences, an undergraduate student has to finish four academic levels, and a comprehensive curriculum extended over eight semesters.

Subjects: The subjects of this study comprised of all nursing students enrolled in the seventh academic semester (N=791) during the first academic term of the academic year 2023-2024.

Tools: Two tools were used for data collection:

Tool I: Professional Identity Scale for Nursing Students (PISN):

This scale was developed by Hao et al. (2014). The researcher utilized this scale

that used by Hussien et al. (2021). It was adopted and translated into Arabic to be applicable for measuring nursing students' professional identity. It consists of 17 statements and including one reversed statement which is 12, with five points Likert scale ranging from strongly disagree (1) to strongly agree (5). It was tested for its reliability using Cronbach's Alpha test and the coefficient value was 0.95 (Hussien et al., 2021).

This scale consists of three dimensions that contain five factors. Dimension one: professional self-image as the core of professional identity (personal dimension). This dimension contains the first and second factors. First factor is known as professional self-image, which consist of 6 statements (items 1, 6, 9, 11, 16 and 17). While, the second factor is known as benefit of retention and turnover risk, which consists of 4 statements (items 5, 8, 10 and 14).

Dimension two: The autonomy of career choice and career persistence (social and historical aspect). This dimension contains the fourth factor. The fourth factor is known as independence of career choice, which consists of 2 statements (items 4 and 12). Dimension three: Exploration behaviors of the balance of expectations and experiences, ideal and reality (interpersonal dimension): This dimension contains the third and fifth factors. The third factor is known as social comparison and self-reflection, which consist of 3 statements (items 7, 13 and 15). While, the fifth factor is known as social modeling, which consists of 2 statements (items 2 and 3).

The scoring system of this scale ranged from 17 to 85 distributed as follows: 66.6 % or more indicates high professional identity, from 33.3% to less than 66.6 % indicates moderate professional identity and less than 33.3 % indicates low professional identity.

Tool II: Abbreviated Clinical Learning Environment Inventory-19 (The abbreviated CLEI-19):

This inventory was developed by Salamonson et al., (2011). The researcher

utilized the inventory that used by Cupak et al. (2022). It was adopted and translated to Arabic to assess clinical facilitator's support of learning as perceived by the students as well as the students' satisfaction with clinical placement. It consists of 19 statements and including nine reversed statements which are 1.2, 1.3, 1.9, 1.10, 1.11, 1.12, 2.3, 2.4 and 2.7 with five points Likert scale ranging from strongly disagree (1) to strongly agree (5).

Internal reliability of this inventory as reported by Cupak et al. (2022), was 0.94 according to Cronbach's Alpha test. It includes two domains. The first domain is clinical facilitator's support of learning, which contains 12 statements. While, the second domain is students' satisfaction with clinical placement, which contains 7 statements.

The scoring system of this inventory ranging from 19 to 95 distributed as follows: less than 50 % indicates negative perspective regarding the clinical learning environment and 50 % or more indicates positive perspective regarding the clinical learning environment.

Method

An approval from the Research Ethics Committee (REC) was obtained from the Faculty of Nursing, Alexandria University before carrying out this study (Permission no. 20-9-65, IRB00013620 (9/19/2025)). An official permission from the Dean and Vice Dean of students' affairs of Faculty of Nursing. An official permission to conduct this study was obtained from the head of Nursing Administration department, Psychiatric and Mental Health Nursing department, Community Health Nursing department and Gerontological Nursing department after explaining the study's aims. Tools were adopted and translated to Arabic and back translated to ensure accurate utilization of terminologies and words. Tools were tested for their content validity by nine experts in the related fields and the necessary modifications were made. Tools were tested for their reliability using Cronbach's Alpha Test. The tools were reliable, and their

coefficient values were 0.83 and 0.85 respectively. A pilot study was carried out on 10% of nursing students to assess the feasibility and applicability of the tools. Accordingly, the necessary modifications were done. Nursing students included the pilot study were included in the total study sample. Data was collected over three months from the beginning of October 2023 until the end of December 2023.

The questionnaires were distributed to students at the end of their clinical days or at the end of their lectures to prevent learning interruption. They were asked to fill them in and return them to the researcher. All nursing students were given the standardized instructions by the researcher about how to fill the questionnaires. They also were instructed that only one answer was required and not to leave any statement without an answer. The researcher responded to any questions raised by the students. Each student assumed about 15-25 minutes to complete the study tools.

Ethical considerations

Written informed consent was obtained from nursing students after explaining the purpose of the study. The student's right to participate or to withdraw from the study at any time was assured. Anonymity of participants and confidentiality of data were maintained. The participation in the study was on voluntary basis.

Statistical analysis:

After completion of the data collection, the necessary statistical analysis was done, and data was revised, coded, and fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp). Qualitative data were described using number and percent. Quantitative data were described using mean, standard deviation. The significance of the

obtained results was judged at the 5% level.

The following statistical tests were used:

1. **Paired t-test:** For normally distributed quantitative variables, to compare between two 1st and 2nd observation.
2. **Chi-square test:** For categorical variables, to compare between different categories.
3. **Fisher's Exact or Monte Carlo correction:** Correction for chi-square when more than 20% of the cells have expected count less than 5.
4. **Pearson coefficient Test:** Used to correlate between normally distributed quantitative variables.

Results

Table 1 show the distribution of nursing students according to their personal characteristics. It was found that slightly less than half of the students had 21 years (45.4%). Concerning the gender, it was observed that more than two thirds of students were females (66.4%). As regards the marital status, it was noted that the majority of students were singles (80.4%). In relation to current residence, it was found that the majority of them were from urban (90.0%). Moreover, it was found that the Faculty of Nursing was the major selection of more than one third of students (37.9%). More than half of them working while studying (53.6%), and more than one third of them spent from 1-3 years working (35.9%).

Table 2 reveals the distribution of nursing students according to their academic characteristics. It was observed that the last GPA of more than one third of students was B- (39.1%). The majority of them graduated from secondary schools (79.1%). Additionally, the majority of students had the intention and determination to complete their studies in nursing and to stay in the nursing profession after graduation (73.3% and 70.2%) respectively. Also, more than half of them had a nurse as a role model (50.8%).

Table 3 illustrates the distribution of nursing students according to their mean

percentage scores of professional identity factors. social modeling factor was the highest factors with a mean percent score of 75.28 ± 20.88 . while, the benefit of retention and turnover risk factor with a mean percent score of 61.50 ± 18.81 .

Table 4 shows the distribution of nursing students according to their levels and scores of professional identity. It was noted that more than half of the students had a high level of professional identity (50.4%), slightly less than half of them exhibited a moderate level (48%), while only 1.6% of them showed a low level of professional identity. The total score of students' professional identity ranged between 21.0–84.0 with a mean score of 62.1 ± 9.2 .

Table 5 reveals mean percentage scores of the nursing students' perspective regarding clinical learning environment. It was found that the majority of nursing students had a positive perspective regarding the clinical facilitator support of learning and satisfaction with clinical placement (76.9% and 78.0%) respectively. Furthermore, more than two thirds of them had positive perspective regarding overall clinical learning environment as measured by the abbreviated CLEI-9 inventory (76.6%).

Table 6 presents the correlation between mean scores of the nursing students' professional identity and their clinical learning environment. A statistically significant positive correlation was found between students' overall professional identity and overall clinical learning environment ($r = 0.398^*$, $p < 0.001^*$). Additionally, the two factors of clinical learning environment (clinical facilitator support of learning and satisfaction with clinical placement) were positively and significantly correlated with overall professional identity ($p < 0.001^*$ for each factor).

Discussion

Professional Identity (PI) is a fundamental aspect of the nursing profession, which plays a central role in making the transition from student to practicing nurse (Brewington et al., 2020). The Clinical Learning Environment (CLE) gets students familiar with the realities of their career and the roles that nurses play in this setting. Furthermore, it has significant effects on students' positive learning, emotional well-being and developing their professional identity (Najafi Kalyani et al., 2019; Susani et al., 2022). The current study showed that more than half of the students had a high level of professional identity. This result answered the first research question.

This result was congruent with Abd Elhamed & Elborai, (2024) who found that more than three quarters of students' intern at Ain Shams University, had a high level of professional identity. Also, Qin et al., (2024) in China mentioned that nursing students perceived a high level of professional identity. Conversely, the current study's findings conflict with those of a study carried out by Elsyied et al., (2024) at the Faculty of Nursing, Damanhour University. They stated that more than half of nurses had a moderate level of professional identity. In addition, Zhang et al., (2022) revealed that nursing students perceived their level of professional identity to be moderate level. Moreover, Xie et al., (2021) found that nursing students perceived a low level of professional identity in Mainland, China.

This result may be due to different causes including students are exposed to many facets of nursing practice as their studies advance, which helps them better comprehend their future roles as nurses. Also, students usually get an extensive amount of clinical exposure by the fourth year. This experience helps students form a stronger bond with their professional identity.

Regarding the factors of professional identity development, the result of this study revealed that nursing students had a high

score for social modeling factor. This might be due to various causes including increased exposure to role models: As nursing students advance to their fourth year, they typically have more opportunities for clinical placements where they interact with experienced nurses and healthcare professionals. Furthermore, mentorship from faculty or experienced practitioners can provide guidance and support that fosters a strong professional identity.

This result was in consistent with the study of Hussien et al., (2021) in Egypt, and Nie et al., (2021) in Chaina. They found that there was factor of "social modeling" gained the highest score in their studies. On the opposite, the result of the present study is disagreed with the findings of Wang & Yang, (2022) who discovered that social modeling is a lower score in the study.

In the current findings, it was also noticed that the majority of nursing students had positive perspective regarding the clinical learning environment. This result answered the second research question. This result could be attributed to that the students are more likely to form favorable perceptions of their learning environment if they perceive the significance of what they study.

Also, supportive environment can be created by having knowledgeable faculty members who can mentor and guide students. Moreover, students' confidence and competence are increased when they have access to a variety of clinical settings, which provide them with extensive exposure to various specializations.

This is congruent with the research of Sheoran et al., (2021) in India, who found that the majority of the nursing students perceived their clinical learning environment as positive. Also, Abdulrahman, (2024) at Najran University in Saudia Arabiya, explored that most of the students had positive perception regarding clinical learning environment.

On the contrary, Ali & Ali (2017) in Sohag University, found that about from 50% to 86% of the students had a negative opinion towards their clinical learning environment.

Additionally, Elhosienny et al., (2020) in Port Said University, pointed out that over two thirds of students perceived their environment as low effective learning environment.

Moreover, statistically significant positive correlation was detected between professional identity development and clinical learning environment among nursing students. This correlation answered the third research question. It could be justified by different causes: First, supportive relationships: Nursing students are more likely to actively participate in their education when they perceive that experienced professionals are there to support them. Their confidence has been strengthened and their professional identity is reinforced by this participation. Second, real-world experience: The CLE gives students practical chances to apply their theoretical knowledge to actual-life situations. This application is crucial to ensuring that they fully comprehend their duties and responsibilities of a nurse.

Third, reflective practice in CLE: Through reflection, they can better understand their feelings regarding patient care, evaluate their experiences critically, and incorporate feedback from instructors and peers into the development of their professional identities. Finally, cultural competence development: Nursing students' exposure to a variety of patient demographics in various clinical settings lead to gain a broader perspective on patient care that strengthening their professional identity as holistic caregivers in the workplace.

This result was somewhat similar to the study of Wu et al., (2020) who studied professional identity and its influencing factors at two colleges in China. They found that a positive perception of clinical learning environment was positively correlated with their professional identity among nursing students. Moreover, this result is identical with the result of Elhosienny et al., (2020) at Port Said University in Egypt, Wang et al.,

(2022) in Northeast China, and Xia et al., (2023). They pointed out that the professional identity of nursing students was positively correlated with the clinical learning environment.

Conclusion

Based on the findings of the present study, it can be concluded that more than half of the students (50.4%) had a high level of professional identity, slightly less than half of them exhibited a moderate level (48%), while only 1.6% of them showed a low level of professional identity. Moreover, the majority of nursing students (76.6%) had a positive perspective regarding the clinical learning environment and less than one quarter of them (23.4%) had a negative perspective regarding their clinical learning environment. Furthermore, the students' overall professional identity is positively correlated with their overall clinical learning environment.

Recommendations

Based on the findings of the current study, the following recommendations are suggested:

- Conduct educational workshops for nurse educators to enhance their understanding of professional identity and its development for nursing students.
- Foster collaboration between clinical facilitators and nurses in clinical units to construct a comprehensive, positive, and effective environment for clinical learning to students to improve their professional identity.
- Designing an appropriate nursing curriculum that include innovative teaching strategies in clinical learning environment that help in the development of students' professional identity.
- Enhance staff development programs for clinical facilitators to foster their skills in providing effective clinical learning for nursing students.

- Inspire nurse educators to be role models for their students.
- Conduct annual conference for all nursing students and show professional developing stories of some successful individuals in nursing field to them.

Limitations of the study

- The sample size in the protocol was taken in the second term of the academic year 2022-2023 (N = 890), while the total number of students in the fourth academic year 2023-2024 was 807 nursing students. Some students refused to participate in the study and others didn't complete the questionnaires. So, the total number of the subjects in this study was 791 nursing students.
- Recruitment strategy of the researcher didn't appeal or fitting most of undergraduate students as they were occupied according to their teaching schedule.

- A pilot study was carried out on 10% of nursing students. Those students were included in the total study sample as the number of the subjects was not sufficient to the study.

Author contributions

Alshimaa Ahmed Fathallha Saker, Demonstrator: Played a significant role in data collection, analysis, interpretation, research methodology, writing a literature review, discussion, conclusion, recommendation, and organizing references.

Elham Mohamed Abdelkader Fayad, Professor Emeritus: Supervised the research and provided expert guidance throughout the study. Contributed to the conceptualization, study design, and final review of the thesis.

Heba Fakieh Mansy Ali, Lecturer: Contributed to the study design, data analysis, and interpretation. Assisted in writing and revising the thesis and provided guidance on the literature review and discussion sections.

Table (1): Distribution of nursing students according to their personal characteristics.

Personal characteristics	Nursing students (N=791)	
	No.	%
Age		
21	359	45.4
22	279	35.3
≥23	153	19.3
Mean ±SD	21.81±1.04	
Gender		
Male	266	33.6
Female	525	66.4
Marital Status		
Single	636	80.4
Engaged	113	14.3
Married	42	5.3
Current Residence		
Rural	78	9.9
Urban	712	90.0
Upper Egypt	1	0.1
What is the reason you chose the Faculty of Nursing? #		
Your major selection	300	37.9
Adjusted by the university	271	34.3
Parents' requirements	102	12.9
Recommended by others	188	23.8
Are you working while studying?		
Yes	424	53.6
No	367	46.4
If your answer yes (n =424)		
1-Work Field #		
Working in nursing field	310	73.1
Other field	124	29.2
2- Duration of work (n =424)		
Less than 1 year	143	33.7
From 1 -3 years	152	35.9
More than 3 years	129	30.4

Table (2): Distribution of nursing students according to their academic characteristics.

Academic characteristics	Nursing students (N=791)	
	No.	%
Last GPA		
A-	8	1.0
B+	110	13.9
B	139	17.6
B-	309	39.1
C+	141	17.8
C	60	7.6
C-	24	3.0
Mean ±SD	2.92±0.34	
Pre-university education		
Secondary school	626	79.1
Nursing technical institute	112	14.2
Institute of technical health	53	6.7
Do you have the intention and determination to complete your studies in nursing?		
Yes	580	73.3
No	79	10.0
Uncertain	132	16.7
Do you have the intention and determination to stay in the nursing profession after graduation?		
Yes	555	70.2
No	70	8.8
Uncertain	166	21.0
Have a nurse as a role model?		
Yes	402	50.8
No	389	49.2

#: More than one answer

Table (3): Distribution of nursing students according to their mean percentage scores of professional identity factors.

Professional identity factors	Total score	Percent score
Professional self-image	(6-30)	(0 – 100%)
Min. – Max.	6.0-30.0	0.0-100.0
Mean ±SD	21.97±4.54	66.52±18.91
Benefit of retention and turnover risk	(4-20)	(0 – 100%)
Min. – Max.	4.0-20.0	0.0-100.0
Mean ±SD	13.84±3.01	61.50±18.81
Social comparison and self-reflection	(3-15)	(0 – 100%)
Min. – Max.	3.0-15.0	0.0-100.0
Mean ±SD	11.37±1.86	69.75±15.53
Independence of career choice	(2-10)	(0 – 100%)
Min. – Max.	2.0-10.0	0.0-100.0
Mean ±SD	6.92±1.42	61.54±17.79
Social modeling	(2-10)	(0 – 100%)
Min. – Max.	2.0-10.0	0.0-100.0
Mean ±SD	8.02±1.67	75.28±20.88

Table (4): Distribution of the nursing students according to their levels and scores of professional identity.

Levels of professional identity	Nursing students (N=791)	
	No	%
Low (< 33.3 %).	13	1.6
Moderate (33.3%-< 66.6%).	379	48
High (66.6 %-100%).	399	50.4
Total score (17 - 85)		
Min. – Max.	21.0 – 84.0	
Mean ±SD	62.1 ± 9.2	
Percent score (0 – 100%)		
Min. – Max.	5.9 – 98.5	
Mean ±SD	66.4 ± 13.5	

Table (5): Mean percentage scores of the nursing students' perspective regarding clinical learning environment.

Students' perspective regarding clinical learning environment	Nursing students (N=791)	
	No	%
Factor I: Clinical facilitator support of learning		
Negative perspective	183	23.1
Positive perspective	608	76.9
Total score (12 - 60)		
Min. – Max.	16.0 – 57.0	
Mean ±SD	39.2 ± 5.7	
Percent score (0 – 100%)		
Min. – Max.	8.3 – 93.8	
Mean ±SD	56.6 ± 11.8	
Factor II: Satisfaction with clinical placement		
Negative perspective	174	22.0
Positive perspective	617	78.0
Total score (7 - 35)		
Min. – Max.	7.0 – 35.0	
Mean ±SD	23.6 ± 4.9	
Percent score (0 – 100%)		
Min. – Max.	0.0 – 100.0	
Mean ±SD	59.4 ± 17.6	
Overall perspective regarding clinical learning environment		
Negative perspective	185	23.4
Positive perspective	606	76.6
Total score (19- 95)		
Min. – Max.	29.0 – 91.0	
Mean ±SD	62.8 ± 9.2	
Percent score (0 – 100%)		
Min. – Max.	10.4 – 95.8	
Mean ±SD	58.0 ± 12.9	

Table (6): Correlation between mean scores of the nursing students' professional identity and their clinical learning environment.

Professional identity (N=791)	Clinical learning environment					
	Clinical facilitator support of learning		Satisfaction with clinical placement		Overall clinical learning environment	
	r	p	r	p	r	p
Professional self-image	0.242*	<0.001*	0.393*	<0.001*	0.379*	<0.001*
Benefit of retention and turnover risk	0.272*	<0.001*	0.391*	<0.001*	0.392*	<0.001*
Social comparison and self-reflection	0.075*	0.034*	0.178*	<0.001*	0.156*	<0.001*
Independence of career choice	0.052	0.141	0.005	0.884	0.020	0.566
Social modeling	0.149*	<0.001*	0.284*	<0.001*	0.262*	<0.001*
Overall professional identity	0.259*	<0.001*	0.409*	<0.001*	0.398*	<0.001*

r: Pearson coefficient

*: Statistically significant at $p \leq 0.05$

References

- Abd Elhamed, L., & Elborai, A. (2024). Factors Affecting Professional Identity among Nurse Interns'. *Egyptian Journal of Health Care*, 15(2), 1231-1239. [10.21608/ejhc.2024.367432](https://doi.org/10.21608/ejhc.2024.367432)
- Abdulrahman, E. (2024). Nursing Students' Perceptions Regarding Clinical Learning Environment and Supervision and its Relation to Their Academic Achievement at Najran University. *Tanta Scientific Nursing Journal*, 32 (1). pp. 131-147. doi: [10.21608/tsnj.2024.346118](https://doi.org/10.21608/tsnj.2024.346118)
- Ali, N. M., & Ali, G. A. (2017). Clinical learning Environment and the Influential Factors from Nursing Students perspectives. *Kufa Journal for Nursing Sciences*, 7 (2), 90–105. <https://doi.org/10.36321/kjns.vi20172.2269>
- Brewington, J., & Godfrey, N. (2020). The professional identity in nursing initiative. *Nursing education perspectives*, 41(3), 201. DOI: [10.1097/01.NEP.0000000000000667](https://doi.org/10.1097/01.NEP.0000000000000667)
- Cupak, I., Ścisło, L., & Kózka, M. (2022). Psychosocial Determinants of Stress Perceived among Polish Nursing Students during Their Education in Clinical Practice. *International Journal of Environmental Research and Public Health*, 19(6). <https://doi.org/10.3390/ijerph19063410>
- De Swardt, H. (2019). The clinical professional socialisation. *Journal of Interdisciplinary Health Science*, 24. <https://doi.org/10.4102/hsag.v24i0.1188>
- Elhosieny, E., Elhosany, W., & Abdel Aleem, M. (2020). Influence of Quality of Clinical Learning Environment on the Development of Nursing Students' Professional Identity. *Port Said Scientific Journal of Nursing*, 7(2) 43-52. [10.21608/PSSJN.2020.94762](https://doi.org/10.21608/PSSJN.2020.94762)
- Elsyied, A. F., Abd El Rahman, R. M., & Saleh, M. S. (2024). Relationship Nurses' Professional Identity and Their Occupational Commitment. *International Journal of Novel Research in Healthcare and Nursing*, 11(2). Available at: www.noveltyjournals.com
- Godfery, N., & Young, E. (2020). Professional identity, Concepts of Nursing Practice. 3rd edition. St. Louis: Elsevier publishing, 363–370. ISBN: 9780323581936
- Hao, Y., Niu, H., Li, L., Yue, S., & Liu, X. (2014). Measurement of professional identity in Chinese nursing students. *International Journal of Nursing Sciences*, 1(2),137–44. <https://doi.org/10.1016/j.ijnss.2I014.05.002>
- Hite, A., & Godfrey, N. (2019). Professional Identity in Nursing: Why does it matter?. *Kansas Nurse*, 94, (3), 14-16.
- Hussien, R.M., Shahin, M.H., & Ibrahim, M.E. (2021). Professional identity, wellness, and future hope among nurse

- interns in Egypt. *Frontiers of Nursing Journal*, 8(3), 279-290. <https://doi.org/10.2478/fon-2021-0029>
- Jinyan, H., Tingting, Y. (2019). Nursing students' professional identity A descriptive literature review: Published master thesis, Faculty of Health and Occupational Studies, Lishui University, China. P16-18. Retrieved from <http://hig.diva-portal.org/smash/record.jsf?pid=diva2:1330865>
 - Johnson, M., Cowin, L.S., Wilson, I., & Young, H. (2012) Professional identity and nursing: contemporary theoretical developments and future research challenges. *International Nursing Review*, 59(4). <https://doi.org/10.1111/j.1466-7657.2012.01013.x>
 - Lundell Rudberg, S., Westerbotn, M., Sormunen, T., Scheja, M., & Lachmann, H. (2022). Undergraduate nursing students' experiences of becoming a professional nurse: a longitudinal study. *BMC nursing*, 21(1), 219. <https://doi.org/10.1186/s12912-022-01002-0>
 - Maginnis, c. (2018). A Discussion of Professional Identity Development in Nursing Students. *journal of Perspectives in Applied Academic Practice* 6(1). <http://doi.org/10.14297/jpaap.v6i1.302>
 - Mbalinda, S. N., Najjuma, J. N., Gonzaga, A. M., Livingstone, K., & Musoke, D. (2024). Understanding and barriers of professional identity formation among current students and recent graduates in nursing and midwifery in low resource settings in two universities: a qualitative study. *BMC nursing*, 23(1), 146. <https://doi.org/10.1186/s12912-024-01795-2>
 - Mbalinda, S. N., Najjuma, J. N., Mubuuke, A. G., Kamoga, L., & Musoke, D. (2023). Understanding and barriers to formation Professional Identity among current and recent graduates of nurses and midwifery in two universities in a low resource setting: A qualitative study. *Research Square*. doi: 10.21203/rs.3.rs-3423723/v1
 - Mohamed, H., Awad, S., & ELSabahy, H. (2021). The Effect of a Clinical Supervision-Enhancing Strategy for Head Nurses on Their Professional Identity. *Egyptian Journal of Health Care*, 12(4), 1550-1566. doi: [10.21608/ejhc.2021.203959](https://doi.org/10.21608/ejhc.2021.203959)
 - Najafi Kalyani, M., Jamshidi, N., Molazem, Z., Torabizadeh, C., & Sharif, F. (2019). How do nursing students experience the clinical learning environment and respond to their experiences? A qualitative study. *BMJ open*, 9(7), e028052. <https://doi.org/10.1136/bmjopen-2018-028052>
 - Nejad, F. M., Asadzaker, M., Baraz, S., & Malehi, A. S. (2019). Investigation of Nursing Student Satisfaction with the First Clinical Education Experience in Universities of Medical Sciences in Iran. *Journal of medicine and life*, 12(1), 75–82. <https://doi.org/10.25122/jml-2018-0008>
 - Nie, S., Sun, C., Wang, L., & Wang, X. (2021). The Professional Identity of Nursing Students and Their Intention to Leave the Nursing Profession During the Coronavirus Disease (COVID-19) Pandemic. *The journal of nursing research*, 29(2), 139. <https://doi.org/10.1097/jnr.00000000000000424>
 - Philippa, R., Ann, H., Jacqueline, M., & Nicola, A. (2021). Professional identity in nursing: A mixed method research study. *Nurse Education in Practice*, 52(6). <https://doi.org/10.1016/j.nepr.2021.1030>
 - Pullen, R. (2021). Professional identity in nursing practice. *Nursing Made Incredibly Easy!* 19(2), p 55-56. | DOI: [10.1097/01.NME.0000732012.99855.78](https://doi.org/10.1097/01.NME.0000732012.99855.78)
 - Qin, Z., Zhang, H., Su, S., Guo, D., Wu, P., Huang, Y., & Wang, H. (2024). Perceived professional preparedness and

- identity among senior nursing students: a latent profile Analysis. *BMC nursing*, 23(1), 291. <https://doi.org/10.1186/s12912-024-01965-2>
- Rhoda, A., & Godfrey, N. (2022). Fostering professional identity in nursing Retrieved from <https://www.myamericannurse.com/fostering-professional-identity-in-nursing/>
 - Rodríguez-García, M. C., Gutiérrez-Puertas, L., Granados-Gámez, G., Aguilera-Manrique, G., & Márquez-Hernández, V. (2021). The connection of the clinical learning environment and supervision of nursing students with student satisfaction and future intention to work in clinical placement hospitals. *Journal of Clinical Nursing*, 30(7-8), 986-994. <https://doi.org/10.1111/jocn.15642>
 - Salamonson, Y., Bourgeois, S., Everett, B., Weaver, R., Peters, K., & Jackson, D. (2011). Psychometric testing of the abbreviated Clinical Learning Environment Inventory (CLEI-19). *Journal of Advanced Nursing*, 67(12), 2668–2676. <https://doi.org/10.1111/j.1365-2648.2011.05704.x>
 - Sheoran, P., Kaur, S., Patyal, N., and Sarin, j. (2021). Perception of Nursing Students Regarding Clinical Learning Environment, Supervision (CLES). *Indian Journal of Forensic Medicine & Toxicology*, 15(2), 518-526. <https://doi.org/10.37506/ijfmt.v15i2.14362>
 - Vabo, G., Slettebø, Å., & Fossum, M. (2021). Nursing students' professional identity development: An integrative review. *Nordic Journal of Nursing Research*, 42(2),62-75. <https://doi.org/10.1177/20571585211029857>
 - Wang, H., & Yang, M. (2022). Influence of professional identity on the e-learning adaptability among Chinese nursing students during COVID-19. *Frontiers in Public Health*, 9, 754895. <https://doi.org/10.1002/nop2.1356>
 - Wang, Q., Cao, X. & Du, T. (2022). First-year nursing students' initial contact with the clinical learning environment: impacts on their empathy levels and perceptions of professional identity. *BMC Nursing*, 21, 234. <https://doi.org/10.1186/s12912-022-01016-8>
 - Wu, C., Palmer, M. H., & Sha, K. (2020). Professional identity and its influencing factors of first-year post-associate degree baccalaureate nursing students: A cross-sectional study. *Nurse education today*, 84, 104227. doi: <http://doi.org/10.1016/j.nedt.2019.104227>
 - Xia, Y., Guo, Q., Chen, Q., Zeng, L., Yi, Q., Liu, H., & Huang, H. (2023). Pathways from the clinical learning environment and ego identity to professional identity: A cross-sectional study. *Journal of professional nursing: official journal of the American Association of Colleges of Nursing*, 45, 29–34. <https://doi.org/10.1016/j.profnurs.2023.01.006>
 - Xie, L., Li, Y., Ge, W., Lin, Z., Xing, B., & Miao, Q. (2021). The relationship between death attitude and professional identity in nursing students from mainland China. *Nurse Education Today*,107(4). <https://doi.org/10.1016/j.nedt.2021.1051>
 - Zhang, J., Shields, L., Ma, B., Yin, Y., Wang, J., & Hui, X. (2022). The clinical learning environment, supervision and future intention to work as a nurse in nursing students: a cross-sectional and descriptive study. *BMC Medical Education*, 22(548). <https://doi.org/10.1186/s12909-022-03609-y>