

The Role of Self Efficacy and Academic Motivation in the Formation of Professional Identity among Technical Secondary School Nursing Students



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ABSTRACT

Background: The public's expanding health demands have prompted ongoing reform of nursing education in recent years, greater focus on developing students' professional abilities. It is widely acknowledged that nursing competence is essential for the delivery of professional nursing development. In order to provide excellent nursing services, the students must possess a high enough sense of motivation to continue their education and learn a significant quantity of abilities and knowledge. **Aim:** to study the role self-efficacy and academic motivation in the formation of professional identity among technical secondary school nursing students. **Method:** A descriptive correlational design was used to perform the study. Utilizing three tools namely, General Self-Efficacy Scale (GSES), Academic Motivation Survey (AMS), and Professional Identity Questionnaire for Nursing Students (PIQNS). **Results:** The majority of nursing students exhibit a high level of self-efficacy and most of them had an excellent level of academic motivation. About 75.6% of the nursing students studied had a high level of professional identity whereas others exhibit moderate level. **Conclusion:** There are highly statistically significant positive relations between self-efficacy and professional identity. Additionally, there are highly statistically significant positive relations between academic motivation and professional identity. Also, there is a highly statistically significant positive relationship between self-efficacy, academic motivation and professional identity among the secondary nursing students studied. **Recommendations:** improve the educational environment that increases self-efficacy and encourage academic motivation this in turn support professional identity for among nursing students.

Keywords: Academic Motivation, Nursing Students, Professional Identity, Self-Efficacy.

1. Introduction

The nursing profession is one of the professional groups with the highest levels of career security, global variety, and flexible work options (Dalcali & Kaya, 2020). The nursing profession is a discipline that needs a combination of theoretical and practical training. In order to keep up with the dynamic demands of the nursing profession, nursing education is always evolving (Karabulut, Gurcay, & Yildiz, 2021; Falk & Dierking, 2019). Nursing education refers to the structured and organized educational process that occurs in a university, college, or school. Its ultimate purpose is to produce highly skilled professional practitioners by providing nursing students with the tools, resources, and support they need to learn the art and science of nursing (Tsimane & Downing, 2019).

Nursing students must have specialized information and abilities, as well as the confidence to use them in real-world situations. Self-efficacy is a term that incorporates appropriate confidence. Self-efficacy defined as the degree of confidence a person has with their capacity to finish an assignment and reach a goal (Croy, Garvey,

Willetts, Wheelahan, & Hood, 2019). In nursing practice, self-efficacy is known as a nurses' confidence that they have the essential information, competencies, and skills in order to deliver secure, effective patient care (Yao, Yu, Shen, Kang, & Wang, 2021).

Self-efficacy has two aspects, specialized self-efficacy (SSE) and general self-efficacy (GSE). SSE involves an individual's confidence that he or she can achieve in terms of a given activity, while GSE includes an individual's general degree of self-confidence to cope with different circumstances (Yu et al., 2020). Enhancing self-efficacy can be achieved through four variables; mastery experience (effective efforts to complete the assignment), vicarious experience (recognizing others accomplish their objectives), verbal persuasion (obtaining encouraging comments), and somatic and emotional states (self-assessment of one's emotions over finishing the assignment) (Bryan & Cicciu, 2022).

Self-efficacy is a crucial factor that boosts self-assurance and motivation to deliver quality nursing care in challenging clinical settings that

have an impact on behaviors and output. Since self-efficacy influences both performance and knowledge, it serves as a mediator between the two, making it crucial for performance. Based on the principles of social learning theory, self-efficacy theory describes individuals' belief in their ability to carry out the actions necessary to accomplish a certain goal (Cengiz, Gurdap, Oltuluoglu, Aslan, & Aktura, 2023). Students should be motivated to raise their academic success levels within the context of their nursing education (Karabulut et al., 2021).

Motivation is the desire to achieve a task, and it directly affects academic success. The process of encouraging, bolstering, sustaining, and controlling the actions is known as motivation (Megahed, 2016). An individual's justification for actions related to education is referred to as academic motivation. The importance of academic motivation for learning outcomes has been highlighted in international studies of students, making it a factor of particular interest. Strong academic drive fosters curiosity, excellent learning, learning persistence, and improved academic achievement (Bissonnette, 2022; Aharon, Melnikov, & Warshawski, 2020).

Academic motivation consists of three components: intrinsic motivation, which involves engaging in an activity for enjoyment and self-satisfaction. Extrinsic motivation is completing an activity for the external value and consequences, not always for the individual's benefit. In a-motivation, the decision of studies is unclear, and the individual fails to understand how to relate the results of studying to their own profit (Aharon et al., 2020). Academic motivation is important since it is believed that motivated students are more engaged in their studies and do well in learning environments (Saeedi, Ghafouri, Tehrani, & Abedini, 2020).

In nursing education, academic motivation is equally, if not more, significant than in other disciplines of studies. In order to provide high-quality nursing services, it is necessary to teach nursing students with strong motivation to gain a lot of knowledge and skills as well as a willingness to keep learning as the field advances (Saeedi et al., 2020). A low level of motivation depletes a lot of resources and has an adverse effect on nurses, patients' well-being, and community (Ghiasvand, Naderi, Tafreshi, Ahmadi, & Hosseini, 2017). It has been suggested theoretically that motivation is correlated with and contributes significantly to the advancement of the identity identification

procedure (Wasityastuti, Susani, Prabandari, & Rahayu, 2017).

Professional identity describes one's sense of self in relation to their work or their professional selves. When it comes to professional identities of nurses, the nursing profession's self-perception, or what it means to be and behave as a nurse, has been developed via everyday nursing practice. Throughout their careers, nurses establish their professional identities in a dynamic process that mostly occurs during proficient school (Xie et al., 2021). Usually, the formation of a professional identity initiates prior to or during admission to nursing school at an early stage, when theories as well as techniques come together for supplying a fundamental knowledge of the field and the function that nurses carry out (Philippa, Ann, Jacqueline, & Nicola, 2021).

Nursing students get extensive professional information, acquire training in professional skills, and interact with instructors who serve as role models during the education phase. Through these experiences, nursing students can improve their professional self-efficiency, internalize the importance of being a nurse, feel more confident in their ability to function as professionals, and be more driven to continue their education (Xie et al., 2021). Professional identity establishment and acquisition may be influenced by the interaction of internal elements like academic motivation and external variables like the learning environment. (Wasityastuti et al., 2017).

Many elements impact a person's professional identity, including psychological traits that are internal to the person, such as Self-sufficiency, psychological requirements, occupation goals and job burnout as well as external ones that are related to the job, Community assistance, job stress, and violence in work settings. Additionally, nurses' professional identities may be influenced by their views on mortality (Xie et al., 2021). Nursing practice and education have developed in large part due to the influence of professional identity. Prerequisites for decision-making and planning in nursing education include nursing students' transition to professional nurses, which is a significant challenge in the field. Nursing education is seen to be the starting point for the nursing professional identity, which education is used to continually build and destroy (Wei, Zhou, Hu, Zhou, & Chen, 2020).

2.1 Significance of Study

Nursing students' early identification with their profession, as well as their acquired

professional abilities, are critical determinants in the standard of their upcoming work and the security of the people they look after. Consequently, when nursing students are educating and subsequently engaged in the workforce, it is critical to assess their professional identities (Gusar, Tokić, & Lovrić, 2021). Self-efficacy and academic motivation serve as a core cause of nursing students' performance and makes students believe in their own abilities to enhance their professional identity. Technical secondary nursing students need to feel a sense of belonging to the profession.

Again, utilizing the benefits of nursing education at the appropriate level to create an ideal professional identity is very important for technical secondary nursing students. Although the significant elements that already shape nursing students' professional identities had great significance especially among technical school nursing students. Due to a lack of study to examine self-efficacy and academic motivation as a moderator the process of developing a professional identity for technical secondary school nursing students, this study acts as a starting point for examining these relational variables.

2.2 Aim of the Study

This study aims to assess the role self-efficacy and academic motivation in the formation of professional identity among technical secondary school nursing students.

2.3 Research Hypotheses

The specific research hypotheses are as follows:

H1. Self-efficacy correlates with professional identity as perceived by technical secondary school nursing students.

H2. Academic motivation correlates with professional identity as perceived by technical secondary school nursing students.

3. Method

3.1 Study Design

Descriptive correlational research design was used to achieve study objectives.

3.2 Setting of the Study

The study was conducted at the 3 Technical secondary schools of nursing namely, (El-sinbillawin nursing school, Ghazala nursing school and Temi El-amdid nursing school). These schools are affiliated with the Ministry of Health and are supervised by the Training and Schools Authority in Dakahlia Governorate. Nursing schools target those who have a general preparatory certificate. Each school has three academic years, and the

study is in Arabic. The nursing students' study three years at school, followed by two years at the Technical Institute of Nursing, which is under the supervision of the College of Nursing of the Ministry of Higher Education and Graduates are classified as nursing technicians.

3.3 Participants

Convenience sample was utilized which includes all technical secondary nursing students in the different academic year at the three nursing schools. The total number was 283 students (El-sinbillawin nursing school 85, Ghazala nursing school 105 and Temi El-amdid nursing school 93).

3.4 Tools of Data Collection

The data of the present study was collected by using three tools namely, General Self-Efficacy Scale (GSES), Academic Motivation Survey (AMS), and Professional Identity Questionnaire for Nursing Students (PIQNS).

Tool (I). General Self-Efficacy Scale (GSES)

This questionnaire consisted of two parts:

Part I: It was used to identify personal characteristics of nursing students as gender, age, school, academic year, level, and district of residence. **Part II:** It was developed by **Schwarzer & Jerusalem, 1995** and includes 10-item aimed at measuring technical secondary school nursing students' general self-efficacy. Participants responded to the general self-efficacy scale (GSES) using a 5-point Likert Scale (1 = *strongly disagree* to 5 = *strongly agree*). The mean score across all 10 items yielded a total score, with higher scores implies stronger general self-efficacy.

Scoring system: The total score of perceived general self-efficacy items ranged from 10 – 50, it was categorized into three levels according to cut off point as, Low (<50%), Moderate (50%-75%), & High (>75%).

Tool (II). Academic Motivation Scale (AMS)

It was developed by **Vallerand et al. (1992)** to measure motivation levels among technical secondary school nursing students. It consists of 28 items categorized under three dimensions namely, intrinsic motivation (12 items), extrinsic motivation (12 items), and amotivation (4 items). The response used a five-point Likert Scale that ranged from 1 to 5 (1=strongly disagree) to (5= strongly agree).

Scoring system: The total score of perceived motivation levels among technical secondary school nursing students was categorized into three levels according to cut off point as, Low (<50%), Moderate (50%-75%), & High (>75%).

Tool (III). Professional Identity Questionnaire of Nursing Students (PIQNS)

It was developed by **Hao (2011)** to evaluate the professional identity level of technical secondary school nursing students. Professional identity questionnaire of nursing students (PIQNS) and includes 17 items for professional identity which are loading on 5 sub-dimensions namely; professional self-image (6 items), retention benefit and risk of turnover (4 items), social comparison and self-reflection (3 items), career choice independence (2 items) and social modeling (2 items). Items are assessed on a five-point Likert scale (complete conformity' = 5, conformity' = 4, 'neutral' = 3, 'inconformity' = 2, and 'complete inconformity' = 1).

Scoring system: The total score of perceived professional identity levels among technical secondary school nursing students was categorized into three levels according to cut off points such as, Low (<50%), Moderate (50%-75%), & High (>75%).

3.5. Validity and Reliability

Study tools' content was examined in the context of its validity through a group of five knowledgeable faculty members from Faculty of Nursing at Mansoura University. They updated the tools to ensure that they were more comprehensible, relevant, applicable, accurate, easy to use, and understood and in accordance with their suggestions, changes were made since they included sentence restructuring and grammar terminology. Reliability of the study tools General Self-Efficacy Scale (GSES), Academic Motivation Survey (AMS), and Professional Identity Questionnaire for Nursing Students (PIQNS) were examined through using Cronbach's alpha test. Reliability was computed and found ($\alpha = 0.76$), ($\alpha = 0.94$), ($\alpha = 0.82$) respectively.

3.6. Pilot Study

A pilot study was authorized and conducted on 30 nursing students (10%) from the study population in order to evaluate the statements' plausibility and accuracy as well as the amount of time required to complete the questionnaire. Students who participated in the pilot study were not included in the overall sample in order to evaluate the tools' visibility, effectiveness, and application. The required adjustments were made in response to their inputs.

4. Ethical Considerations

Ethical approval was obtained from the Research Ethical Committee of Faculty of Nursing, Mansoura University. An official permission to

conduct the study was obtained from the responsible administrator of technical secondary schools of nursing. After explaining the objective and scope of the study to nursing students who agreed upon participating, informed consent was acquired. They voluntarily choose to participate in the research. The data was coded to ensure the subject's privacy and anonymity. The study sample's privacy was ensured. The findings were incorporated into the essential research and will be published and utilized in educational materials in the future.

5. Field Work

Once an official permission was obtained by the proper channel of communication from the responsible administrator of technical secondary schools of nursing, the questionnaire sheet was distributed to students of nursing. Data began to be gathered at the beginning of April to end of June 2022 through self-administered questionnaire that was provided to nursing students. The researcher described the purpose of the study and how to complete the questionnaires. The length of time needed to finish the questionnaire was 20-30 minutes.

6. Statistical Analysis

The SPSS program (Statistical Package for the Social Sciences, version 25, SPSS Inc. Chicago, IL, USA) was used to organize, tabulate, and statistically analyze the acquired data. The presumption of normalcy was acknowledged. As a result, frequency and percentage were used to describe categorical data. The mean and standard deviation were used to represent continuous variables. Pearson correlation coefficient test was used for examining the relationship between two continuous variables. Hierarchal regression analysis was conducted to explore independent variables (demographics, self-efficacy and academic motivation) of professional identity (dependent variable). The demographic characteristics input at the initial stage of hierarchal regression analysis for controlling the possible confounding effects after that self-efficacy and academic motivation were entered in the second and third step respectively. Statistically significant was considered as (p -value < 0.05 & 0.01).

7. Results

Table 1 shows more than one third of the secondary nursing students studied were (38.9 %) aged 17 years and one quarter (25.1 %) aged 16 years whereas (23 %) aged 18 years and (13%) aged 15 years. The secondary nursing students

studied were distributed almost equally across the three academic levels first, second and third. Also, they were distributed almost equally across the three nursing secondary schools El-sinbillawin, Ghazala, Temi El-amdid nursing school.

Table 2 shows that (90.8%) responded with ability to solve difficult problems, while only (11.0) % of studied secondary nursing students disagreed for handling whatever comes there way. And more than two-thirds of the participants were 77.0% agreement with all of the self-efficacy statements and with represents 39.53 ± 4.33 of total means of overall self-efficacy items.

Figure 1 shows the majority of the studied secondary nursing students studied with 74.6% represents the highest level of self-efficacy whereas 24.4% represents for moderate level by studied secondary nursing students.

Table 3 shows that (80.9%) of studied nursing students are agreed for intrinsic motivation, (79.9%) agreed for extrinsic motivation and (61.5%) agreed for a motivation. Whereas (7.4%) of studied nursing students are disagreed for

intrinsic motivation, (8.5%) disagreed for extrinsic motivation and (25.1%) disagreed for amotivation.

Figure 2 shows about three quarters of secondary nursing students (75.6%) represents high level of academic motivation whereas (21.2%) represents for moderate level of academic motivation

Table 4 shows that (91.5%) of participants conform to choose the job they like no matter what other people say. While 80.2% of the inconformity for their knowledge about nursing career mainly came from parents, teachers and other relatives.

Figure 3 shows about three quarters of studied secondary nursing students (75.6%) represent a high level of professional identity whereas 55.6% represents for moderate level of professional identity.

Table 5 shows there was a highly statistically significant positive relationship between self-efficacy, academic motivation and professional identity among the secondary nursing students studied.

Table 1. Personal Characteristics of the Secondary Nursing Students (n=283)

Characteristics	n	%
Age (Years)		
▪ 15 years	37	13.1
▪ 16 years	71	25.1
▪ 17 years	110	38.9
▪ 18 years	65	23.0
Mean \pmSD	16.72\pm0.96	
Academic levels		
▪ First	95	33.6
▪ Second	94	33.2
▪ Third	94	33.2
Nursing secondary schools		
▪ El-sinbillawin nursing school	85	30.0
▪ Ghazala nursing school	105	37.1
▪ Temi El-amdid nursing school	93	32.9

Table (2). Number and Percentage of Self- Efficacy as Perceived by the Secondary Nursing Students Studied (n=283)

Statements	Strongly disagree / Disagree		Neutral		Agree / Strongly agree	
	n	%	n	%	n	%
• I can always manage to solve difficult problems if I try hard enough.	8	2.8	34	12.0	241	85.2
• If someone opposes me, I can find the means and ways to get what I want.	15	5.3	40	14.1	228	80.6
• It is easy for me to stick to my aims & accomplish my goals.	12	4.2	22	7.8	249	88.0

• I am confident that I could deal efficiently with unexpected events.	28	9.9	79	27.9	176	62.2
• Thanks to my resourcefulness, I know how to handle unforeseen situations.	22	7.8	63	22.3	198	70.0
• I can solve most problems if I invest the necessary effort.	2	0.7	24	8.5	257	90.8
• I can remain calm when facing difficulties because I can rely on my coping abilities.	23	8.1	61	21.6	199	70.3
• When I am confronted with a problem, I can usually find several solutions.	5	1.8	50	17.7	228	80.6
• If I am in trouble, I can usually think of a solution.	5	1.8	33	11.7	245	86.6
• I can usually handle whatever comes my way.	31	11.0	93	32.9	159	56.2
Overall self-efficacy (mean frequency)	15	5.3	50	17.7	218	77.0
Mean±SD	39.53±4.33					

Strongly disagree + Disagree= Disagreement Agree +strongly agree= Agreement

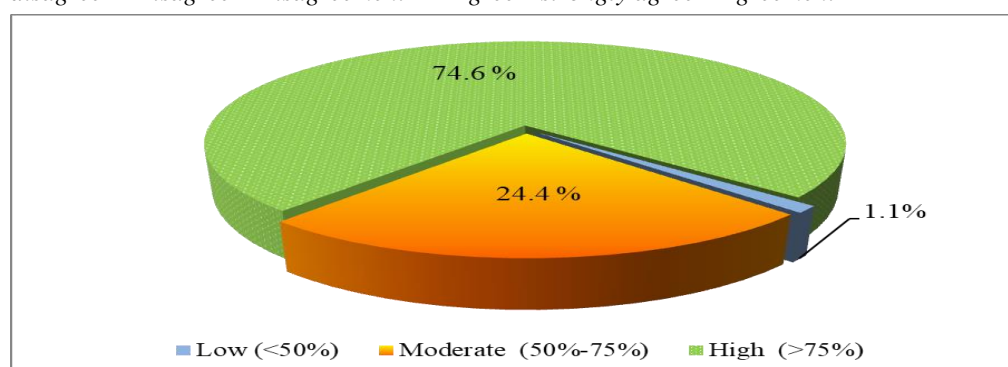


Figure (1). Levels of Self-Efficacy as Perceived by the Studied Technical Secondary Nursing Students (n=283)

Table (3). Academic Motivation Among Technical Secondary Nursing Students (n=283)

Academic motivation	Strongly disagree / Disagree		Neutral		Agree /Strongly agree		Mean±SD	Mean %
	n	%	n	%	n	%		
A. Intrinsic motivation	21	7.4	33	11.7	229	80.9	48.33±8.33	80.55
A1. Intrinsic motivation - to know	14	4.9	29	10.2	240	84.8	16.67±2.89	83.35
A2. Intrinsic motivation - toward accomplishment	23	8.1	34	12.0	226	79.9	15.89±2.91	79.3
A3. Intrinsic motivation - to experience stimulation	23	8.1	34	12.0	226	79.9	15.76±3.13	78.8
B. Extrinsic motivation	24	8.5	33	11.7	226	79.9	48.57±7.28	80.95
B1.Extrinsic motivation-identified	16	5.7	31	11.0	236	83.4	16.45±2.92	82.25
B2.Extrinsic motivation-introjected	38	13.4	40	14.1	205	72.4	15.51±3.04	77.55
B3.Extrinsic motivation - external regulation	17	6	30	10.6	236	83.4	16.61±2.88	83.05
C. A motivation	71	25.1	38	13.4	174	61.5	14.27±3.22	71.35
D. Total academic motivation	29	10.2	34	12.0	220	77.7	111.17±16.81	79.40

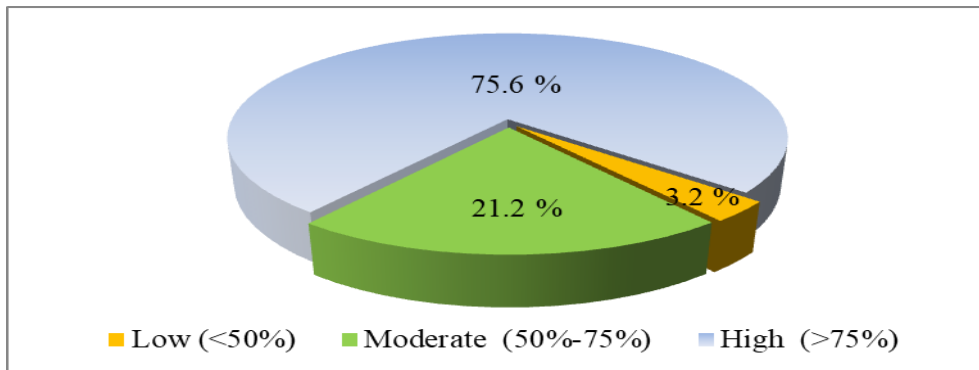


Figure (2). Levels of Academic Motivation Among the Studied Technical Secondary Nursing Students (n=283)

Table (4). Number and Percentage of Independence of Career Choice and Social Modeling Dimensions as Dimension of Professional Identity as Perceived by the Studied Secondary Nursing Students (n=283)

Independence of career choice	Complete inconformity/ inconformity		Neutral		conformity/ complete conformity	
	n	%	n	%	n	%
• I will choose the job I like no matter what other person say.	3	1.1	21	7.4	259	91.5
• My knowledge about nursing career mainly came from parents, teacher and other relatives.	227	80.2	27	9.5	29	10.2
Overall independence of career choice (mean frequency)	115	40.6	24	8.5	144	50.9
<i>Mean±SD</i>	<i>6.60±1.14</i>					
• I like to know more professional developing stories of some successful persons in nursing field.	12	4.2	26	9.2	245	86.6
• I like to communicate with predecessors of nursing field.	10	3.5	22	7.8	251	88.7
Overall social modeling (mean frequency)	11	3.9	24	8.5	248	87.6
<i>Mean±SD</i>	<i>8.66±1.47</i>					

Complete inconformity+ inconformity= inconformity

Conformity+ complete conformity= conformity

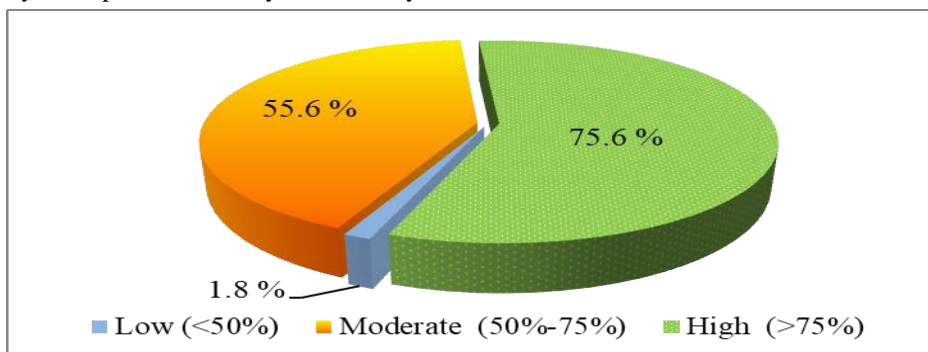


Figure (3). Levels of Professional Identity as Reported by the Studied Secondary Nursing Students (n=283)

Table (5). Self-Efficacy, and Academic Motivation in Relation to Professional Identity of Secondary Nursing Students (n=283)

	Professional identity	
	r	p
Self-efficacy	0.37	0.000**
Academic motivation	0.78	0.000**

** Highly statistically significant ($p<0.01$)

8. Discussion

Nursing education is a demanding process that combines theory and practice to equip nurses to handle circumstances involving life and death in a demanding and complicated setting. Consequently, to fulfill the demands of the nursing profession, nursing students must be inspired to steadily improve both their academic and professional performance (Allari et al., 2023). Stated differently, nursing education equips nursing students with the advanced skills and professional knowledge they need to promote population health (Zeydani, Atashzadeh-Shoorideh, Abdi, Hosseini, Zohari-Anboohi, & Skerrett, 2021). The determination and guidance of students' learning attitudes and the prediction of their performance in the classroom are significantly influenced by academic self-efficacy (Abbas, Ashiq, & Abbas, 2020; Yau & Leung, 2018).

Results of the current study revealed that most nursing students have the highest level of self-efficacy. This may be due to the increasing desire to help others and giving students positive feedback to students' educational program and their academic performance. They were able to handle stress, withstand challenges, and resolve problems while maintaining an optimal mental condition. This result is also consistent with Xu et al. (2023) who found the academic self-efficacy of nursing undergraduates was at a good level. Also, Rabei, Ramadan, & Abdallah (2020) showed that the student's self-efficacy was high. As well as Ibrahim, Fakhry, & Khalaf (2020) found high degree of self-efficacy was reported by more than two thirds of the nursing students in the study group.

As well as the finding of the present study are supported by Pitre, Hanson, and Kumardhas (2022) who studied self-efficacy among nursing students at RAK Medical and Health Sciences University in the United Arab Emirates and found more than a half of the nursing students has high level of self-efficacy. The results of the current study further support the findings of Iqbal et al. (2023) who found the majority of the students' self-efficacy level was good. This is agreed with Wan et al. (2023) who found the self-efficacy level of undergraduate nursing students was high. As well reported by Ren et al. (2021), who concluded the level of self-efficacy of study sample population was moderately high.

At the same line, Haerazi and Irawan (2020) found high self-efficacy nurses are capable

of handling challenges on their own. Since self-efficacy is always known as a person's belief in their skills, it is considered to be the basis for self-assurance and motivation to reach objectives. As well as Moghadari et al. (2020) found high academic self-efficacy nursing students have a favorable self-perception of their problem-solving skills. This might serve as motivation to confidently address challenging and complicated tasks, improving one's problem-solving skills

The result of the present study in contrast to the findings of Xie et al. (2020) who found a moderate level of self-efficacy among nurses. This is the same line with the result of Jin and Lv (2018) who found the level of self-efficacy among the participants in the study was below the international norm. And Labrague et al. (2021) who found a moderate level of self-efficacy among nurses in Oman. Also, they recommended that the hospital should have more faith and assurance in the competence of its nurses to handle any emergency circumstances.

As regards personal characteristics and nursing students' self-efficacy, findings of the present study revealed that there was no statistically significant relation between self-efficacy of nursing students and personal characteristics. The present study is agreed with Farokhzadian, Karami, and Azizzadeh (2018) who found no differences in self-efficacy scores based on the students' age and gender. Whereas the findings of the present study is disagreed with Hopper (2023) who studied resilience, motivation, and self-efficacy as predictors of student completion and success in an associate degree nursing program and found older students had higher levels of self-efficacy.

Academic motivation is vital in nursing school because it helps students take in a lot of knowledge, develop the skills they need, and learn new things all the time in order to become highly qualified nurses (Al-Osaimi & Fawaz, 2022; Saeedi & Parvizy, 2019). To efficiently and continually increase their medical knowledge and abilities, nursing students need to be highly motivated academically (Nguyen et al, 2023). Additionally, Students that are more motivated tend to be less depressed in the classroom and have greater self-confidence (Abdolrezapour, Ganjeh, & Ghanbari, 2023; Berdida, 2023). Instead, Students who lacked academic motivate have a bad attitude, lost interest in studying, or even postponed, performed poorly in school, or dropped out (Wang, 2019).

Findings of the present study showed more than three-quarters of studied nursing students have a high level of academic motivation. That might be because academic motivation is a concept that is unique to each student and is influenced by inside as well as outside individual circumstances. This is agreed with (Nguyen et al., 2023) who studied factors associated with academic motivation in nursing students and found nursing students had high academic motivation. The present study results supported with the findings of Ongor and Uslusoy (2023) who revealed that the technological approaches employed in the courses suited the educational requirements and usage of multimedia technologies boosted the students' motivation.

Results of present study in contrast with Khamaiseh, Al Hadid, Barmawi, AlAzzamn, and Taha (2022) who found that students from three public institutions showed lower levels of academic motivation than the averages found in the worldwide literature. As well as, El-Sayed, Mousa, and Abd-Elhamid (2021) revealed that the majority of nursing students had moderate levels of academic motivation. Therefore, recommended that Students must get regular, sufficient, and constructive feedback on their academic achievement in order to be motivated.

Results of present study showed that motivation to know as a dimension of intrinsic motivation had a higher mean score. This finding may be related to students' curiosity to learn things that interest them and discover new things during their studies. At the same line, De Paula, Machado, and Machado (2021) who verified that students showed higher scores in motivation scale intrinsic motivation towards knowledge. As well as, El-Sayed, Taha, Abdelhay, and Hawash (2024) revealed that academic motivation level among the study's participants was moderate. Their scores were high in "intrinsic motivation towards accomplishment" and "intrinsic motivation to know," Also; Rogers (2017) revealed that Student achievement was higher when students had more intrinsic motivation to know. Whereas Almwad (2023) reported students had moderate level of academic motivation subscale on intrinsic motivation to know.

As regards personal characteristics and nursing students' academic motivation findings of the present study revealed that there was no statistically significant relation between academic motivation of the studied nursing students and their personal characteristics. This is agreed with Ramos and Habig (2019) who measured the academic

motivation of selected first year nursing students and found that gender and age have no significant effect on any of the subscales. Whereas Taheri-Kharameh, Sharififard, Asayesh, Sepahvandi, and Hoseini (2018) showed academic motivation is not correlated with demographic factors, and students who are enrolled in longer semesters reported being less motivated. As well as, El-Sayed et al. (2024) found academic motivation decreased as the level of education increased. Also, Nezhad, Abazari, Mardani, Maleki, and Hebda (2022) who explored achievement students' motivation was particularly connected with their gender, academic year, interest in nursing, and history of course dropouts.

The results of the current study revealed that Technical Secondary School nursing students have a higher level of professional identity. This may be due to nursing educators recognizing the good impact of professional identity constraints and use them as a useful instructional resource. This is supported by Chin, Phillips, Woo, Clemans, and Yeong (2020) who study key components that contribute to professional identity development in internships for Singapore's tertiary institutions and revealed nurses had a high level of total professional identity. Furthermore, Gilvari, Babamohamadi, and Paknazar (2022) in their study which entitled " Perceived professional identity and related factors in Iranian nursing students: a cross-sectional study" found the high mean total score of professional identity.

The results of the present study agreed with Skarbalius, Marcinowicz, and Skarbalienė (2018) who studied professional identity of nursing students in Lithuania and Poland and revealed that professional identity among participants was high. In addition to Wenhui et al. (2017) exhibited three quarters of studied nursing students perceived high level of professional identity. This outcome can be a result of the enthusiasm and pride nursing students have in their field. The majority of the nursing students who were studying said they were happy with their choice to become nurses.

Results of the present study showed that social modeling as a dimension of professional identity had a higher mean score above other dimensions among nursing students. This may be due to Students' desire to acquire professional skills by following the path of successful nurses, as well as their tendency to communicate with those working in the field of nursing to obtain the

greatest benefit. This is agreed with **Hussien, Shahin, and Ibrahim (2021)** who study professional identity, wellness, and future hope among nurse interns in Egypt and revealed that nurses exhibited high level of social modeling as a dimension of professional identity. As well as **Shengxiao, Chao, Lei, and Xia (2021)** found that “social modeling” obtained the maximum scores. Whereas, **Haghighat, Borhani, Ranjbar, and Naseri (2019)** who evaluated the formation of professional identity in Iranian nursing students after implementation of a new curriculum and found that social dimensional modeling had a moderate average.

As regards personal characteristics and nursing students' professional identity findings of the present study revealed that there was no statistically significant relation between professional identity of the studied nursing students and their personal characteristics. This is agreed with **Gilvari et al. (2022)** who found that there was no statistically significant correlation between the students' professional identity and the following variables: age, gender, having relevant work experience prior to university admission as well as choosing the nursing field based on prior background and expectations for the future. In contrast, **Haghighat et al. (2020)** reported professional identity levels improved with each semester. As well as, **Sun, Gao, Yang, Zang, and Wang (2016)** revealed statistically significant association between professional identity and academic year.

The result of the study regards the association between self-efficacy and academic motivation showed there was statistically significant positive association between self-efficacy and academic motivation among the studied nursing students. This may be because self-efficacy can increase nursing students' academic motivation. Nursing students with strong self-efficacy can be motivated to engage in learning exercises, persist in the face of academic challenges, and achieve their academic goals. This result is agreed with **Sarikoc and Oksuz (2017)** who discovered that the students' levels of intrinsic and extrinsic motivation are positively correlated with their academic self-efficacy.

Additionally, **Shrestha and Tuladhar (2021)** studied relationship between self-efficacy and academic motivation among nursing students and explored a positive correlation among self-efficacy and academic motivation. It was suggested that nurse educators support nursing students in enhancing their sense of self-efficacy in order to

increase their enthusiasm for learning and assist them achieve well academically. At the same line, **Bahari, Alharbi, and Alenazi (2022)** who examined the relationship between learning motivation and self-efficacy among undergraduate nursing students found that learning motivation was positively associated with self-efficacy in clinical environments. Higher levels of self-efficacy in professional nursing practice are associated with students' enhanced motivation to study.

The result of the study regards the association between self-efficacy and professional identity showed there was a statistically significant positive association between them. Result of the present study is consistent with, **Mei et al. (2022)** who studied self-efficacy and professional identity among freshmen nursing students and reported that the relationship between professional identity and self-efficacy was positive. As well as, **Zhao et al. (2023)** discovered that self-efficacy strongly mediates the link between perceived social support and professional identity, which indicated that nursing students' sense of self-efficacy could improve their PI.

Also, the results of the present study agree with **Kong's (2019)** found professional identity may have an impact on self-efficacy and investigated if professional identity and self-efficacy can affect competence immediately, along with if self-efficacy promotes the link between competence and professional. This is supported by **Yao et al. (2021)** who examined the role of self-efficacy in mediating between professional identity and self-reported competence among nursing students in the internship period and revealed the association among professional identity, self-efficacy, and competence. Professional identity may also serve as a focal point for competency development.

9. Conclusion

Based on the study findings, most technical secondary nursing students have a high level of self-efficacy. Also, more than three-quarters of nursing students studied demonstrated the highest level of academic motivation. Furthermore, more than three-quarters of nursing students studied perceived high level of professional identity. At the end, there was a positive statistically significant association between self-efficacy and academic motivation and professional identity among technical secondary nursing students.

10. Recommendations

The study's conclusions lead to the following suggestions for nursing education

program, nurse educators and nursing students to improve educational environment that increases self-efficacy and encourages academic motivation this in turn support professional identity formation among nursing students.

For nursing education program

- Nursing education programs should integrate theory and practice to prepare nursing students to manage situations and deal with challenging and complex environment.
- Enhance professional identity via basic education, further education, professional activities, and interpersonal relationships in nursing.
- Facilitate guidance and encouragement to foster connections, role modeling, and social environment

For nurse educators

- Nurse educators should give students continuous and effective feedback throughout their study in clinical courses.
- Improve students' self-assurance and desire, which in turn increases their motivation for studying.
- Motivate students to complete tasks by providing them with rewards and financial incentives.
- Use different methods in teaching to attract students' attention, increase their academic achievement, and thus raise their self-efficacy.
- Establish a respectful and positive learning atmosphere that enhances the perception of nursing in healthcare facilities.
- Create a supportive learning environment that can help students feel more empowered, boost their self-confidence, and perform better in their assignments.

For nursing students

- Build trust between educators and nursing students and provide students with a sense of independence in their own development as professionals
- Encourage nursing students to seek professional growth to acquire new abilities and relevant information to practice and education

For Further Research

- Future research should focus on factors that affect professional identity development among nursing students.

- Conduct the same study again using a larger number of participants to possibly provide more generalizable results.
- Future studies use qualitative methods or a combination of both quantitative and quantitative techniques to get more accurate data and expanded findings.

11. References

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