

Professional Behaviors and Patient Safety Competency between Fourth Year Nursing Students and Internship Students: Comparative study

Mai Mohammed Amer⁽¹⁾, Alaa Mohamed Salah⁽²⁾, Wafaa Abdelazeem Elhossany⁽³⁾

(1) Demonstrator in Nursing Administration, Faculty of Nursing, Suez Canal University, Egypt.

(2) Lecturer of Nursing Administration, Faculty of Nursing, Suez Canal University, Egypt.

(3) Professor of Nursing Administration, Faculty of Nursing, Misr University for Science & Technology, Egypt.

Abstract

Background: Professional behaviors and patient safety competency are crucial for quality of care in healthcare organizations. **Aim:** the study aimed to compare the professional behaviors and patient safety competency between fourth year nursing students and internship students at Faculty of Nursing in Suez Canal University. **Design:** A comparative correlational descriptive design was used. **Setting:** The study was conducted at Faculty of Nursing in Suez Canal University and 14 internship training hospitals. **Sample:** 342 nursing students from fourth academic year and internship year. **Tools:** Two self-instruction tools were used for data collection, which are Nursing Students Professional Behaviors Scale (NSPBS) and Patient Safety Competency Self Evaluation Tool for Nursing Students (PSCSE). **Results:** Both study groups reported a high level of professional behaviors and a moderate level of patient safety competency. There was no statistical significant difference of professional behaviors (P value= 0.588) or patient safety competency (P value= 0.264) between two study groups. **Conclusion:** The study concluded that there was no statistical significant difference of professional behaviors or patient safety competency between two study groups. However, there was a moderate positive statistical correlation between professional behaviors and patient safety knowledge, skills, attitude and competency in both study groups. **Recommendations:** The study recommended: Improving nursing curricula to relate theoretical content with practical training for improving patient safety competency. Encouraging internship nursing students to attend continuing education in the form of workshops and conferences related to professional behaviors and patient safety competency.

Keywords: Nurse Interns, Nursing students, Patient safety competency, Professional behaviors.

1. Introduction

Nursing as a profession bear mission of change with its values, beliefs and developing philosophy. This mission necessitates individuals of profession to behave professionally (Ciftcioglu et al.,

2019; Wijaya et al., 2023). Professional behaviors as an integral part of the nursing profession are defined as the ability to meet patients' ethical expectations and include several features, which are knowledge, accountability, autonomy, inquisitiveness, collaboration and collegiality, innovation and

vision, advocacy, and ethics (**Lee and Jang, 2023; Wijaya et al., 2023**).

Professional behaviors features are critical for improving the methods, standards, and judgments that guide nursing practices every day while elevating the quality and safety of patient care (**Franjic, 2020**). Developing professional nurses who can integrate theory and practice to provide high-quality nursing care is the goal of nursing education (**Lee & Sim, 2020**). Professional behaviors are essential and shaped during undergraduate education. Thus, educational programs should be designed to enable future nurses to develop these behaviors (**Tavani et al., 2022**).

Learning period during college life is an important time when those crucial professional behaviors develop, mature and molded. This period helps nursing students to discover professional demands and means to behave accordingly (**Rajpar and Nazir, 2022**). Also, the internship year is a crucial aspect of nursing education, requiring students to demonstrate professional responsibility and skillful behaviors that align with their profession (**Carless-Kane & Nowell, 2023**).

The development of nursing students'

professionalism, which means the application of acceptable professional behaviors, mainly occurs through the acquisition of knowledge and skills during their training (**Lundell Rudberg et al., 2022; DeJuliis, 2024**). The evolution of professional behaviors is a crucial aspect of overall competence and is likely to improve nursing care and safety (**Tomas et al., 2021**). Some nurses exhibit unprofessional behavior, leading to errors, decreased patient satisfaction, and adverse events, despite the growing emphasis on professional behaviors in nursing practice, which is crucial for reducing errors and improving patient safety and outcomes (**Daigle, A., 2022**). Nurses who display higher levels of professional behaviors have been shown to increase their recognition of the importance of patient safety in nursing practice and increase safety for patients (**Wijaya et al., 2023**).

Patient safety (PS) is an international issue since health professionals are ethically responsible to ensure PS within the healthcare system (**Torkaman et al., 2022**). Improving nurses' attention to patient safety competency in handling complex safety issues, and preventing preventable nursing adverse events is essential (**Tai et al., 2024**). Patient safety competency (PSC) refers to

knowledge, skills, and attitude that nurses should possess to deliver safe care, and it has a direct effect on the patients' safety and rehabilitation (**Farokhzadian et al., 2024**).

Undergraduate nursing education represents an important spot for providing future generations of nurses with the patient safety competency fit for the 21st century (**Mansour et al., 2018; Purabdollah et al., 2023**). Nursing educators play a critical role in the formation and development of nursing students' PSC. Collaboration in academic and clinical settings is essential to ensure the effectiveness of patient safety trainings (**Bijani et al., 2019; Torkaman et al., 2022**). The internship period helps students to explore the real practical situation, and ensuring the competency of internship students in patient safety is important as they will become future professional nurses (**Alshammari et al., 2020; Albloushi et al., 2023**).

Significance of the Study:

The early development of professional behaviors in nursing students is crucial, as poor professional behaviors exhibited in academic preparation may lead to difficulties in future clinical practice (**Hosseini et al., 2024**). **Wills et al. (2018)** suggested that

higher educational levels can enhance commitment towards professional behaviors. Therefore, the distinction in professional behaviors between fourth-year students and internship students who undergo more clinical training is crucial.

Nurses entering the workforce must acquire the knowledge, skills, and attitude to ensure safe patient care. **Alshammari et al. (2020)** suggested that the internship period has a direct effect on continuous improvement of patient safety. Hence, comparing patient safety competency between fourth-year students and internship students is critical for future healthcare professionals who will have significant healthcare responsibilities. Based on **Ageiz et al. (2021)**, who stated that enhancing professional behaviors is important for improving patient safety competency, the researcher studied the relation between professional behaviors and patient safety competency.

The Aim of the study:

The aim of this study was to compare the professional behaviors and patient safety competency between fourth year nursing students and internship students at Faculty of Nursing in Suez Canal University.

Research questions:

1-Is there a significant difference in professional behaviors between fourth year nursing students and internship students at Faculty of Nursing in Suez Canal University?

2-Is there a significant difference in patient safety competency between fourth year nursing students and internship students at Faculty of Nursing in Suez Canal University?

3-Is there a relation between professional behaviors and patient safety competency?

2. Subject and Method

Study design:

A comparative correlational descriptive design was utilized to conduct this study.

Study setting:

The study was conducted in the following places :

1. Faculty of Nursing, Suez Canal University. The Faculty of Nursing in Ismailia had been established in 2006 under Presidential decree No. 267 of 2006. It adopts new and innovative educational approaches. It follows Problem Based Learning (PBL) strategy

in addition to Community-Oriented and Community-Based Education .

2. 14 internship training hospital include: two university hospitals, two private hospitals, four general hospitals, four district hospitals, and two universal health coverage hospitals.

Study subjects:

The study was conducted on 342 students from target population (392) including fourth year and internship students after excluding 39 students who participated in the pilot study (25 fourth year students + 14 internship students) in addition to 11 fourth year students who refused to participate in the study. So the final total sample size was 342, divided as follows:

- All fourth year nursing students =211
- All internship students = 131

Tool of data collection:

Tool (1): Nursing Students Professional Behaviors Scale (NSPBS): the questionnaire compromised two parts as the following:

Part 1: includes nursing student personal data (Gender, Marital status, Academic year, Internship training hospital, Participation in faculty activities and Participation in hospitals

activities).

Part 2: Nursing Students Professional Behaviors Scale (NSPBS). It was designed by **Goz and Geckil (2010)**, to assess nursing students' professional behaviors. It consisted of 27 items grouped under three dimensions related to professional behaviors: Healthcare Practices (18 items), Activity Practices (7 items) and Reporting (2 items).

Scoring system:

A five-point likert scale was used with responses of absolutely insufficient (1), insufficient (2), undecided (3), partially sufficient (4), and absolutely sufficient (5). The lowest and the highest possible scores of total tool would be 27 and 135, respectively. In general, the stratified levels of professional behaviors for nursing students could be classified as follow: Low (27-44), Medium (45-89) and High (≥ 90).

Tool (2): Patient Safety Competency Self Evaluation Tool (PSCSE): The PSCSE was assess patient safety competency. It consisted of 41 items, grouped under three dimensions included knowledge, skills and attitude related to patient safety competency: knowledge (6 items), skills (21 items) and attitude (14 items).

Scoring system:

Students responses were on a 5- point likert scale. Total score for whole questionnaire and for each dimension is calculated by Summated mean scores of the questions and divided on the total numbers of questions (Lee et al., 2014). The Cut of point developed by the researcher as given in Table (1).

Table 1: The scoring of PSCSE:

Total	1>3 Not competent	3 Moderately competent	3<5 Competent
Knowledge	Low level of patient safety knowledge	Moderate level of patient safety knowledge	High level of patient safety knowledge
Skills	Low level of patient safety skills.	Moderate level of patient safety skills.	High level of patient safety skills.
Attitude	Low level of patient safety attitude	Moderate level of patient safety attitude.	High level of patient safety attitude.

Tool validity and reliability:

The NSPBS was validated for its language, context, and construct have been examined.

Opinions of people who are expert in the area were obtained to determine context validity. Confirmatory Factor Analysis was conducted to determine construct validity. Factor load vary between 0.44 – 0.87 which indicated preferred level (**Goz and Geckil, 2010**). The validity of the PSCSE was examined using Exploratory Factor Analysis, which tests all of the items of the tool on the basis of theoretical and empirical evidence from previous studies. Confirmatory Factor Analysis was conducted to determine construct validity. Factor load vary between 0.456 – 0.785 which indicated preferred level (**Lee et al., 2014**).

The utilized tools were reliable. NSPBS reliability was 0.95 (**Goz and Geckil, 2010**). PSCSE reliability was 0.907 (**Lee et al., 2014**).

Field work:

The data were collected during the second semester of the academic year 2022-2023 over a period of three months starting from the April 2023 and continued till the end of June 2023, after internship students had spent six months in internship training. The data collected from students after explaining aim of the study and how to fulfill both tools. The researcher was present with students at the time of data collection for clarifying and

answering any questions. The researcher collected data by distributing original English tools to fourth-year nursing students during their spare time in the academic schedule. Regarding internship nursing students the researcher visited students at SCU hospital according to their schedule and availability during the time of data collection, while students at other hospitals the researcher met them at the faculty during delivering their internship evaluation sheets monthly.

Pilot study:

A pilot study was carried out on (10%) of the study participants, there were 39 students (25 fourth year students and 14 internship students) to check the applicability and feasibility of instruments, to identify the obstacles and problems, and take needed measures to manage these obstacles and problems when collecting data. They were excluded from the study sample. The pilot study also helped the researcher in estimating the time consumed for fulfilling the study tools it was ranged from 10 to 15 minutes for each tools.

Administrative design:

Official permission was obtained from the dean of faculty of nursing, Suez Canal University for collecting the data from fourth

year nursing students and internship students. Also the official permission was obtained from internship training hospitals managers to collect data from internship students.

Ethical considerations:

The study proposal was approved by the Research Ethics Committee at Faculty of Nursing Suez Canal (committee no. 169/9.2022). After obtaining the official agreement from the ethical committee of faculty of nursing, Suez Canal University, the written consents were obtained from fourth year and internship nursing students to participate in the study. The students informed that they have the right to refuse to participate in the study or withdraw from the study at any time without any negative consequences on them. The confidentiality of the data and results was maintained.

Data analysis:

The collected data was coded and transformed into coding sheets. Then, statistical analysis were done by using SPSS system files (SPSS package version 22) Variables were checked for normality with Kolmogorov Smirnov test at 0.05 level, Descriptive statistic including frequency distribution, mean score, median

and standard deviation were used to describe different characteristics of variables. Mann-Whitney test and Kruskal Wallis were used to relate the demographic data with the study variables. Also, Mann-whinety test and Spearman correlation test were applied for testing the study hypothesis. Significance level values were considered at $P < 0.05$.

3. Results

Figure (1): Shows that 90% of fourth year nursing students had a high level of professional behaviors while 10% of fourth year nursing students had a medium level of professional behaviors.

Figure (2): Shows that 86.26% of internship students had a high level of professional behaviors while 13.74% of internship students had a medium level of professional behaviors.

Figure (3): Shows that about two third (60.19%) of fourth year students were moderately competent in patient safety competency while 39.34% were competent in patient safety competency and only 0.47% was not competent in patient safety competency.

Figure (4): Shows that about two third (61.83%) of internship students were

moderately competent in patient safety competency while 37.4% were competent in patient safety competency and only 0.77% was not competent in patient safety competency.

Table (1): Shows that there was no statistically significant difference in professional behaviors and its items between two study groups. P value was > 0.05 . P value= 0.632 for healthcare practice, 0.194 for activity practice, 0.483 for reporting and 0.588 for PB. Mean ranks for both groups were almost similar. Mean rank= 169.48 and 174.75 for healthcare practice, 166.04 and 180.29 for activity practice, 174.40 and 166.83 for reporting and 169.22 and 175.17 for professional behaviors in fourth year and internship students respectively.

Table (2): Shows that there was no statistically significant difference in patient safety competency and its items between two study groups. P value was > 0.05 . P value= 0.308 for patient safety knowledge, 0.730 for patient safety skills, 0.850 for patient safety attitude and 0.264 for patient safety competency. Mean ranks for both groups were almost similar. Mean rank was 175.79 and 164.58 for patient safety knowledge, 172.95 and 169.16 for patient

safety skills, 169.22 and 171.29 for patient safety attitude and 176.2 and 163.92 for patient safety competency in fourth year and internship students respectively.

Table (3): Shows that there was a moderate positive statistical correlation between professional behaviors and patient safety knowledge, skills, attitude and competency in both study groups (fourth year students and internship students). Regarding 4th year group $r = 0.481, 0.621, 0.481$ and 0.618 respectively. While $r = 0.548, 0.587, 0.466$ and 0.621 respectively for internship group.

4. Discussion

The current study revealed that both study groups (4th year students and internship students) had high professional behaviors levels. From researcher's point of view, this result may be due to two causes. The first cause is that all nursing curricula reflect professional behaviors in the different parts of their topics. The bachelor's degree nursing program incorporates a comprehensive course that teaches professional ethics. This course aims to develop the professional behaviors of nursing students.

This point of view was supported by many scientific researchers, **Tanaka et al. (2017)**, who asserted that the professional behaviors

was linked to educational preparation and years of experience. As the higher level of education preparation and more years of experience are associated with higher levels of professional behaviors. **Sibandze and Scafide (2018)**, who denoted that the level of nursing education is critical to how nurses incorporate professional values into practice.

Regarding the second cause of this result from the researcher's point of view, fourth-year students are senior students attended longer training times in clinical environments under academic supervision, in addition to their periodical evaluation that takes a part for behaviors and attitude. They have the ability to integrate ethics in their clinical practices at the highest level that affects positively on their professional behaviors, and this clinical practice further increased in the internship period.

This point of view was supported by many scientific researchers, **Aboshaiqah & Qasim (2018)**, who denoted that students' perception of the effectiveness of the provided clinical supervision during the internship year has been linked to a high level of clinical competence that involved professional behaviors. **Karadaş et al. (2021)**, who mentioned that clinical training offers rich opportunities for nursing students to gain

professional experience and develop related skills and behaviors. The students who received support from lecturers had higher levels of implementing professional behaviors.

The results of **Yilmaz and Polatdemir (2020)**, who investigated the professional behaviors of 180 senior nursing students at Bursa Uludağ University in Turkey, were similar to our results, which revealed high levels of professional behaviors in the nursing students. Also, **Peksoy et al. (2020)** evaluated professionalism, which refers to acceptable professional behaviors, in nursing students at Hacettepe University in Turkey, and the results were similar to our results, which revealed high levels of professional behavior in the nursing students.

In contrast with our results, **Ciftcioglu et al. (2019)** assessed the professional behaviors among 340 senior nursing students at Canakkale Onsekiz Mart University in Turkey, and reported that those students had a low level of professional behaviors. **Eldeep et al. (2022)** assessed professionalism, which is reflected in behaviors, among 165 senior nursing students at the faculty of nursing affiliated to Fayoum University in Egypt, and the results exhibited that more than two-thirds

of those students had a low level of professionalism.

Current study results related to the overall level of patient safety competency revealed that about two-thirds of both study groups (4th year nursing students and internship students) were moderately competent in patient safety competency. From the researcher's point of view, the result can be explained as previously mentioned in the discussion in the light of the fact that fourth-year and internship students, who are senior nursing students, have more opportunities in their education and clinical training to encounter patient safety topics and situations.

This point of view was supported by many scientific researches. **Timmermans et al. (2017)** estimated that the academic level of nursing students in the nursing program is one of the factors that impact their patient safety competency development as students. **Walpola et al. (2018)** mentioned that education has been more regarded as a fundamental system to reinforce patient safety in healthcare organizations. **Wu & Busch (2019)** stated that patient safety is a necessary competency and thus required to be introduced early and then strengthened throughout school education and continuing

professional advancement.

This result was in accordance with findings of **Alquwez et al. (2019)**, who assessed the patient safety competency of 829 nursing students during clinical training in Saudi Arabia, and their findings revealed moderate patient safety competency among those students. **Huang et al. (2020)**, who assessed the patient safety competency among 732 senior nursing students who were undertaking a final-year clinical internship in China, and their results were similar to our results, revealed that those students were at a moderate level of patient safety competency.

Furthermore, our result was in the same line with **Suliman (2019)**, who measured patient safety competency (PSC) among nursing students in Jordon and indicated that those students were moderately competent in patient safety competency. **Torkaman et al. (2022)**, who assessed the patient safety competency of undergraduate nursing in Iran, and their results showed moderate PSC level. **Alidousti et al. (2022)**, who evaluated the patient safety competency among senior students of health professions in Iran, and results revealed moderate PSC level.

Furthermore, the study results were in contrast with **Jin and Yi (2019)**, who

assessed the patient safety competency of newly graduated nurses in South Korea and reported low patient safety competency. Also, **Amilia and Nurmalia (2020)**, who identified the patient safety competency among nursing students in Indonesia, showed low levels of patient safety competency among those students.

The current study revealed that there was no statistically significant difference in professional behaviors and their components between two study groups (4th year students and internship students). From the researcher's point of view, this may be due to the fact that 4th year students and internship students were senior nursing students who have achieved the ideal level of professional behaviors during nursing education, and internship does not affect their behaviors.

Our results were supported by **Kim and Kim (2016)**, who confirmed that professional behaviors begin to be developed during clinical training and continuously grow during working practice that becomes stronger between 3 and 5 years after graduation. **Poorchangizi et al. (2019)** mentioned that most nursing students and nurses prefer to learn routine clinical skills when entering the work environment, while they do not consider

professional values, which affect the development of professional behaviors.

Our results were aligned with the results obtained by **Poorchangizi et al. (2019)**, who compared professional values that link to and act as the guide in performing the professional behaviors between 250 nurses and 100 nursing students at Kerman University of Medical Sciences in Iran, showing there was no mean difference in professional values between nurses and nursing students. Also, **Sarkoohi et al. (2024)** conducted a study to assess the effect of an internship on professional commitment, which is the main source of positive professional behaviors and professional competence, on 46 senior students five months after the nursing internship was implemented at Kerman University of Medical Sciences in the southeast of Iran and revealed that the professional commitment of the participants was not affected by the internship.

Additionally, our results disagreed with **Ayaz-Alkaya et al. (2018)**, who conducted a study to determine the effect of nursing internship on professional commitment that had a gradual impact on professional behaviors. The study included 101 senior nurse students who were attending nursing internship at Gazi University in Turkey, and

the results revealed an increase in professional commitment levels. **Mousavias et al. (2019)**, who conducted a study to compare the professional behaviors between nursing students and employed nurses in Iran, showed that there was a mean difference in their professional behavior level.

The current study revealed that there was no statistically significant difference in patient safety competency and its components between two study groups (4th year students and internship students). From the researcher's point of view, this indicates that internship training did not affect patient safety competency as previously mentioned. Internship students had not completed the internship year; they are in the adaptation stage in an unfamiliar work environment, and they require more time in clinical training for more exposure to safety issues and attending patient safety training to advance their patient safety competency. Also, internship students still uphold the same level of patient safety competency as 4th year students, and this may be due to academic supervision, periodical evaluation, and their influence by the safety culture practices adopted by the nurses they work with.

This interpretation was in line with **Song**

& Guo (2019), who noted internship students are unfamiliar with the hospital environment and have not developed communication skills during their initial clinical contact with patients. **Aghaei et al. (2021)**, who stated that the change in interpersonal communication, lack of practical experience, and unfamiliar environment make internship a highly stressful stage for internship students.

Our results were similar to those of **Abdrbo (2015)**, who compared the patient safety competency between nursing students and internship students in Saudi Arabia and revealed that there were no significant differences between those two groups of nursing students, and they have relatively the same patient safety knowledge, skills, and attitudes. Also, **Yılmaz & Erdem (2023)** assessed patient safety competency among 441 nursing students enrolled in two different academic years in Turkey and revealed no statistical difference between the overall patient safety competency and the grade level of their study participants.

Furthermore, our results were inconsistent with **Tella et al. (2015)**, who found that the internship students have more experience and knowledge in clinical practice, substantiating a higher confidence level in patient safety.

Toygar, Hançerlioğlu, and Gacaner (2020), who mentioned that the higher the education year of students go, the higher their knowledge and patient safety competence become.

The results revealed that there was a moderate positive statistical correlation between professional behaviors and patient safety knowledge, skills, attitude, and competency in both study groups (4th year students and internship students). From the researcher's point of view, this may be due to the nursing students' adherence to the principles of professional behaviors contributing them to prioritize patients' needs, placing the best interests of patients at the center of everything, and increasing their understanding of compliance with safety principles. Without policies and standards, unacceptable behaviors can create risks and unsafe situations. Higher professional behaviors involve safety and quality improvement. The greater recognition of the professional behaviors of nursing service has been shown to increase recognition of the importance of patient safety in nursing practice.

This point of view was supported by many scientific studies, **Rizany et al. (2018)**, who

reported that adherence to professional behaviors improves nursing competency. **Sholl et al. (2019)** claimed that nurses' lack of professional behaviors creates a great impact on the patients' safety. **Jung and Jeong (2019)**; **Mihdawi et al. (2020)** emphasized the importance of examining the factors affecting patient safety, particularly professional behaviors, to enhance patient safety competency and safety culture.

Our results were in line with **Kakeman et al. (2022)**, whose results indicated positive correlations between patient safety competency and nursing professionalism, which is often described as professional nursing behaviors among nurses. They reported that 91% of the variance in patient safety competency of nurses was explained by professionalism and indicated that professionalism was an important factor influencing the patient safety competency.

5. Conclusion:

Based on the findings of this study, it can be concluded that the total professional behaviors level among 4th year nursing students and internship students were mainly at a high level. However, there was no statistically significant difference of professional behaviors and its items between

two study groups. Also, the majority of 4th year nursing students and internship students were moderately competent in patient safety competency and its items (knowledge, skills and attitude). However, there was no statistically significant difference of patient safety competency and its items between two study groups. Finally, there was a moderate positive statistical correlation between professional behaviors and patient safety knowledge, skills, attitude and competency in both study groups.

6. Recommendations:

Based on the findings of the present study, the following recommendations were suggested:

- 1- The administrative board of Faculty of Nursing in Suez Canal University should apply teaching methods that effectively foster patient safety

competency such as: laboratory/simulation sessions, video, etc.

- 2- The internship committee should develop internship training objectives that cover professional behaviors and patient safety competency in different health care settings.
- 3- The internship committee should conduct monthly appraisal interview with internship students to discuss issues related to professional behaviors and patient safety competency.
- 4- Design training programs for nursing students to improve their patient safety competency.
- 5- Apply the current research idea in different faculties of nursing in Egyptian universities to generalize the results.

Figure (1): The level of professional behaviors of fourth year students at faculty of nursing, Suez Canal University (n=211)

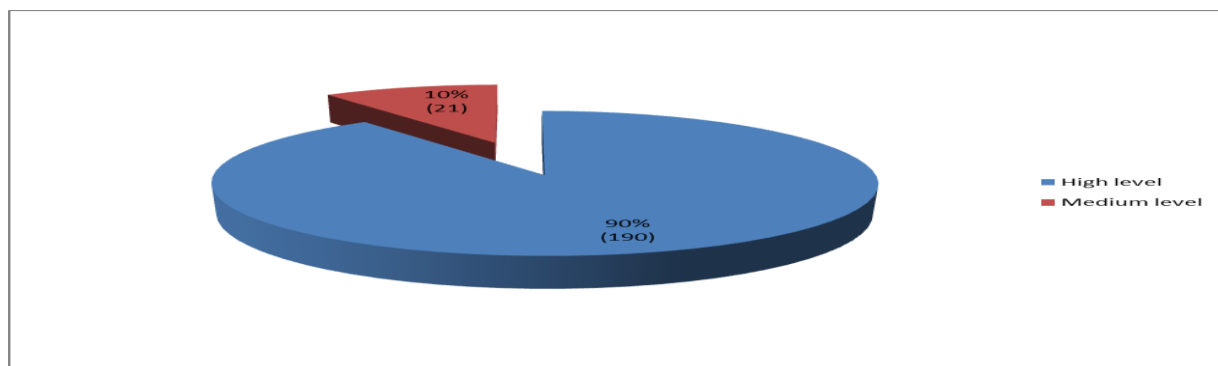


Figure (2): The level of professional behaviors of internship students (n=131)

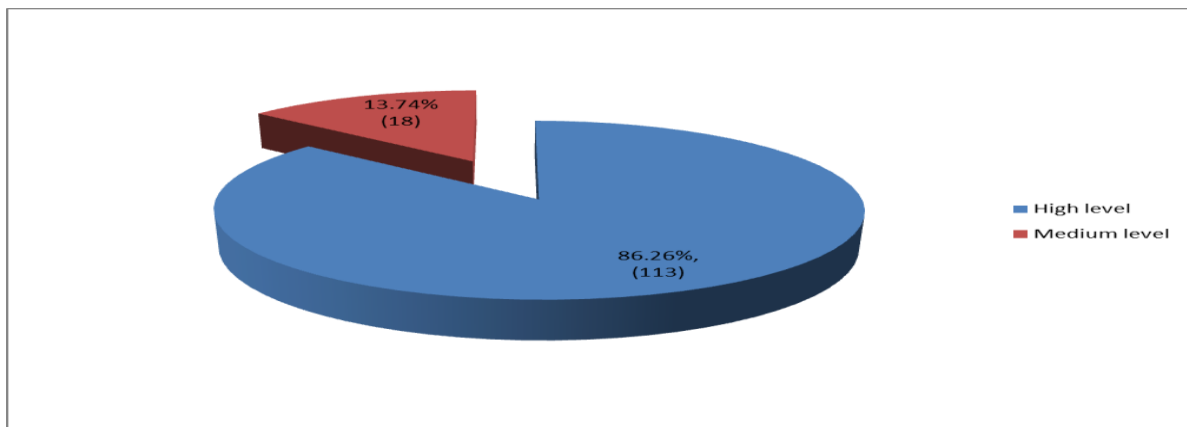


Figure (3): Level of patient safety competency of fourth year students at faculty of nursing, Suez Canal University (n=211)

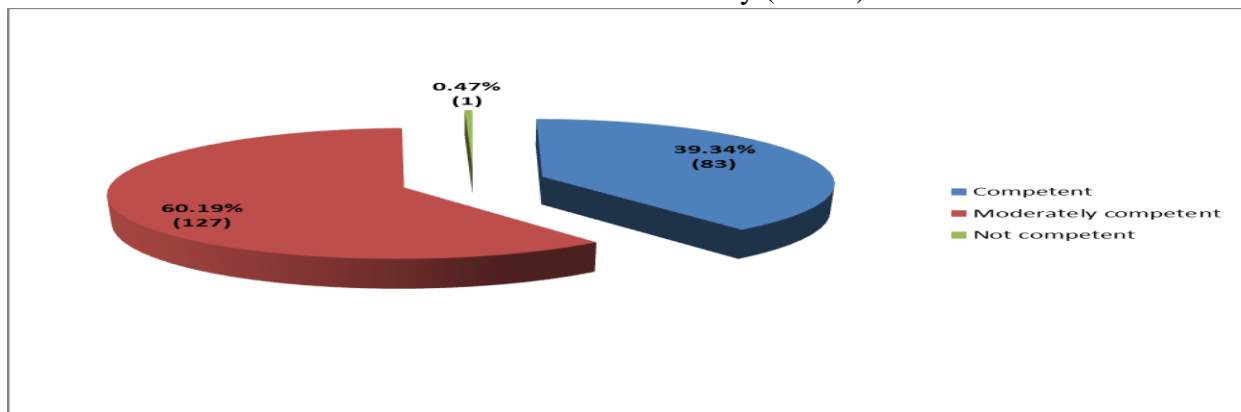


Figure (4): Level of patient safety competency of internship students (n=131)

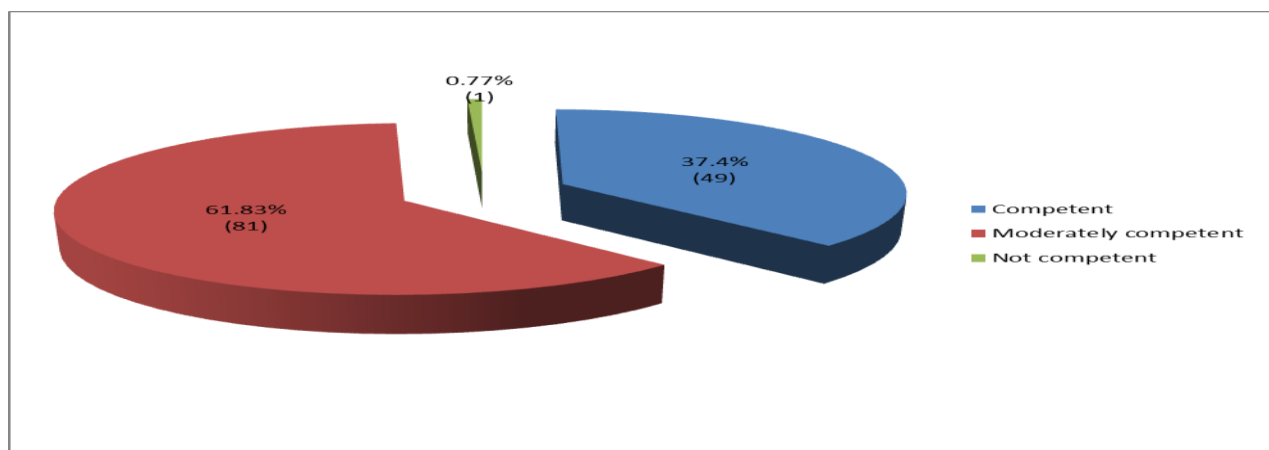


Table (1): Statistical difference of professional behaviors between fourth year students and internship students (n=342)

Items	Students	Median	Mean rank	Z	P value
Healthcare practice	Fourth year students	75	169.48	-0.48	0.632
	Nursing interns	76	174.75		
Activity Practices	Fourth year students	27	166.04	-1.3	0.194
	Nursing interns	28	180.29		
Reporting	Fourth year students	8	174.40	-0.702	0.483
	Nursing interns	8	166.83		
Professional behaviors	Fourth year students	210	169.22	-0.541	0.588
	Nursing interns	213	175.17		

* P<0.05 level of significance

Table (2): Statistical difference of patient safety competency items between fourth year students and internship students (n=342)

Item	Students	Median	Mean rank	Z	P value
Patient safety knowledge	Fourth year students	3.75	175.79	-1.02	0.308
	Nursing interns	3.88	164.58		
Patient safety skills	Fourth year student	3.72	172.95	-.345	0.730
	Nursing interns	3.6	169.16		
Patient safety attitude	Fourth year student	3.88	169.22	- 0.189	0.850
	Nursing interns	3.93	171.29		
Patient safety competency	Fourth year student	3.88	176.2	-1.117	0.264
	Nursing interns	3.77	163.92		

* P<0.05 level of significance

Table (3): Correlation between patient safety competency and professional behaviors of two study groups (n=342)

Items	students	Professional behaviour	
		R	Sig. (2-tailed)
P.S Competency	4 th year	0.618	0.001*
	internship	0.621	0.001*

P.S Knowledge	4 th year	0.481	0.001*
	internship	0.548	0.001*
P.S Skills	4 th year	0.621	0.001*
	internship	0.587	0.001*
P.S Attitude	4 th year	0.481	0.001*
	internship	0.466	0.001*

* Spearman correlation test * P<0.05 level of significance

7. References

Abdrbo, A. A. (2015). Nursing informatics competencies among nursing students and their relationship to patient safety competencies: knowledge, attitude, and skills. *CIN: Computers, Informatics, Nursing*, 33(11), 509-514. DOI: 10.1097/CIN.0000000000000197

Aboshaiqah, A., & Qasim, A. (2018). Nursing interns' perception of clinical competence upon completion of preceptorship experience in Saudi Arabia. *Nurse education today*, 68, 53-60.

Ageiz, M. H., Elshrief, H. A., & Bakeer, H. M. (2021). Developing a professionalism manual for nurse managers to improve their perception regarding professionalism and professional identity. *SAGE Open Nursing*, 7, 23779608211026174.

Aghaei, N., Babamohamadi, H., Asgari,

M. R., & Dehghan-Nayeri, N. (2021). Barriers to and facilitators of nursing students' adjustment to internship: A qualitative content analysis. *Nurse Education Today*, 99, 104825.

Albloushi, M., Innab, A., Mofdy Almarwani, A., Alqahtani, N., Anazi, M., Roco, I., & Alzahrani, N. S. (2023). The Influence of Internship Year on Nursing Students' Perceived Clinical Competence: A Multi-Site Study. *SAGE Open*, 13(3), 21582440231193198.

Alidousti-Shahraki, N., Farzi, S., & Tarrahi, M. J. (2022). Patient safety competencies among senior students of Health professions: an Iranian evaluation study. *The Open Nursing Journal*, 16(1).

Alquwez, N., Cruz, J. P., Alshammari, F., Felemban, E. M., Almazan, J. U., Tumala, R. B., ... & Tork, H. M. (2019). A multi-university assessment of patient

safety competence during clinical training among baccalaureate nursing students: A cross-sectional study. *Journal of clinical nursing*, 28(9-10), 1771-1781.

Alshammari, F., Ahamed, S., Sallam, S., & Pasay-An, E. (2020). Knowledge, attitudes, and perception on patient safety among intern nurses at hemodialysis unit. *Int J Health Allied Sci*, 9(4), 353-8.

Amilia, R., & Nurmalia, D. (2020). A comparison of patient safety competencies between clinical and classroom settings among nursing students. *Nurs Med J Nursing*.
DOI:10.14710/nmjn.v10i1.25231.

Ayaz-Alkaya, S., Yaman-Sözbir, Ş., & Bayrak-Kahraman, B. (2018). The effect of nursing internship program on burnout and professional commitment. *Nurse education today*, 68, 19-22.

Bijani, M., Tehranineshat, B., & Torabizadeh, C. (2019). Nurses', nursing students', and nursing instructors' perceptions of professional values: a comparative study. *Nursing ethics*, 26(3), 870-883.

Carless-Kane, S., & Nowell, L. (2023). Nursing students learning transfer from classroom to clinical practice: An integrative review. *Nurse Education in*

Practice, 103731.

Ciftcioglu, G., Alan, H., & Bekar, E. O. (2019). The Effect of Satisfaction in Implementing Professional Behaviors in Nursing Students. *International Journal of Caring Sciences*, 12(2).

Daigle, A. R. (2022). *Development and Testing of an Instrument to Measure Professionalism in Nursing* (Doctoral dissertation, Louisiana State University Health Sciences Center).

DeJuliis, E. D. (2024). Definitions of professionalism. In *Professionalism across occupational therapy practice* (pp. 3-42). Routledge.

Eldeep, N., Elsaeed, Z., & Soliman, S. (2022). Effect of a Training Program on Intern Nursing Students' Professionalism. *Egyptian Journal of Health Care*, 13(1), 1025-1035.
DOI: 10.36348/sjnhc.2020.v03i09.001.

Farokhzadian, J., Eskici, G. T., Molavi-Taleghani, Y., Tavan, A., & Farahmandnia, H. (2024). Nursing students' patient safety competencies in the classroom and clinical settings: a cross-sectional study. *BMC nursing*, 23(1), 47. DOI: 10.1186/s12912-024-01708-3.

Franjić, S. (2020). Professionalism in

nursing. Saudi J. Nurs. Health Care, 3, 241-245.

Goz, F., & Geckil, E. (2010). Nursing students professional behaviors scale (NSPBS) validity and reliability. *Pak J Med Sci*, 26(4), 938-41.

Hosseini, S. H., Tayebi, Z., & Poormoosa Poostin Saraee, Y. (2024). Nursing students' perception of nurses' professional misconduct: A descriptive qualitative study. *Journal of Medical Education Development*, 17(53), 34-44.

Huang, F. F., Shen, X. Y., Chen, X. L., He, L. P., Huang, S. F., & Li, J. X. (2020). Self-reported confidence in patient safety competencies among Chinese nursing students: a multi-site cross-sectional survey. *BMC Medical Education*, 20, 1-10.

Jin, J., & Yi, Y. J. (2019). Patient safety competency and the new nursing care delivery model. *Journal of Nursing Management*, 27(6), 1167-1175.

Jung, S. J., & Jeong, J. H. (2019). Influence of professionalism and organizational communication on patient safety culture of nurses in hemodialysis units. *Journal of Korean Clinical Nursing Research*, 25(1), 98-105.

Kakemam, E., Ghafari, M.,

Rouzbahani, M., Zahedi, H., & Roh, Y. S. (2022). The association of professionalism and systems thinking on patient safety competency: A structural equation model. *Journal of nursing management*, 30(3), 817-826.

Karadaş, A., Duran, S., & Kaynak, S. (2021). Relationship between emotional labor behaviors and professionalism levels in nursing students: a case study from the faculty of health sciences and a vocational school of health. *Balıkesir Sağlık Bilimleri Dergisi*, 10(3), 302-308.

Kim, I., & Kim, J. (2016). The relationship between nurse image and nursing professionalism according to nursing students' gender. *Advanced Science and Technology Letters*, 32, 30-6.

Lee, J. E., & Sim, I. O. (2020). Gap between college education and clinical practice: Experience of newly graduated nurses. *Nursing open*, 7(1), 449-456. DOI: 10.1002/nop2.409.

Lee, N. J., An, J. Y., Song, T. M., Jang, H., & Park, S. Y. (2014). Psychometric evaluation of a patient safety competency self-evaluation tool for nursing students. *Journal of Nursing Education*, 53(10), 550-562.

Lee, W., & Jang, I. (2023). Effect of

Nurses' Professionalism, Work Environment, and Communication with Health Professionals on Patient Safety Culture (AHRQ 2.0.): A Cross-Sectional Multicenter Study. *Journal of Nursing Management*, 2023(1), 1591128. DOI: 10.1155/2023/1591128.

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.

Mansour, M. J., Al Shadafan, S. F., Abu-Sneineh, F. T., & AlAmer, M. M. (2018). Integrating patient safety education in the undergraduate nursing curriculum: a discussion paper. *The open nursing journal*, 12, 125-132.

Mihdawi, M., Al-Amer, R., Darwish, R., Randall, S., & Afaneh, T. (2020). The influence of nursing work environment on patient safety. *Workplace health & safety*, 68(8), 384-390.

Mousaviasl, S., Elhami, S., Ban, M., Zahedi, A., & Arizavi, Z. (2019). Comparison between the professional behavior of nursing students and employed nurses. *Journal of Advanced Pharmacy Education and Research*, 9(2-

2019), 173-177.

Peksoy, S., Şahin, S., Demirhan, İ., & Kaplan, S. (2020). Evaluation of the relationship between the perception of professionalism and commitment to professional values in nursing students. *Journal of Hacettepe University Faculty of Nursing*, 7(2), 104-112.

Poorchangizi, B., Borhani, F., Abbaszadeh, A., Mirzaee, M., & Farokhzadian, J. (2019). Professional values of nurses and nursing students: A comparative study. *BMC medical education*, 19, 1-7.

Purabdollah, M., Zamanzadeh, V., Ghahramanian, A., Valizadeh, L., Mousavi, S., & Ghasempour, M. (2023). Competencies expected of undergraduate nursing students: A scoping review. *Nursing Open*, 10(12), 7487-7508.

Rajpar, A., & Nazir, N. (2022). Measurement of Bachelorate Nursing Students' Professional Behavior. *J Pract Prof Nurs* 6: 030. of, 4, 2. DOI: 10.24966/PPN-5681/100030

Rizany, I., Hariyati, R. T. S., & Handayani, H. (2018). Factors that affect the development of nurses' competencies: a systematic review. *Enfermeria clinica*, 28, 154-157.

- Sarkoohi, Z., Nematollahi, M., Dehghan, M., Mehdipour-Rabari, R., Khoshnood, Z., Parandeh-Afshar, P., & Farokhzadian, J. (2024). Can internship programs affect nursing students' critical thinking disposition, caring behaviors, and professional commitment?. *BMC Nursing*, 23(1), 418.
- Sholl, S., Scheffler, G., Monrouxe, L. V., & Rees, C. (2019). Understanding the healthcare workplace learning culture through safety and dignity narratives: a UK qualitative study of multiple stakeholders' perspectives. *BMJ open*, 9(5), e025615.
- Sibandze, B. T., & Scafide, K. N. (2018). Among nurses, how does education level impact professional values? A systematic review. *International nursing review*, 65(1), 65-77.
- Song, J., & Guo, Y. (2019). What influences nursing safety event reporting among nursing interns?: Focus group study. *Nurse Education Today*, 76, 200-205.
- Suliman, M. (2019). Measuring patient safety competence among nursing students in the classroom and clinical settings. *Nursing education perspectives*, 40(3), E3-E7.
- Tai, C., Chen, D., Zhang, Y., Teng, Y., Li, X., & Ma, C. (2024). Exploring the influencing factors of patient safety competency of clinical nurses: a cross-sectional study based on latent profile analysis. *BMC nursing*, 23(1), 154. DOI: 10.1186/s12912-024-01817-z.
- Tanaka, M., Taketomi, K., Yonemitsu, Y., & Kawamoto, R. (2017). The current status of nursing professionalism among nursing faculty in Japan. *Journal of Nursing Research*, 25(1), 7-12. DOI: 10.1097/jnr.0000000000000155.
- Tavani, F. M., Behshid, M., Rahmani, A., Mousavi, S., Seif-Farshad, M., & Rahmani, P. (2022). Relationships between ethical decision-making and professional behavior in Iranian nursing students. *Journal of Medical Ethics and History of Medicine*, 15.
- Tella, S., Smith, N. J., Partanen, P., Jamookeah, D., Lamidi, M. L., & Turunen, H. (2015). Learning to ensure patient safety in clinical settings: comparing Finnish and British nursing students' perceptions. *Journal of clinical nursing*, 24(19-20), 2954-2964.
- Timmermans, O., De Vos, M., & Franck, E. (2017). The effectiveness of a course on patient safety management on

the patient safety competencies by final year bachelor of nursing students in the Netherlands. *Health education and care*, 2(4).

Tomas, N., Ndjamba, A. K., & Munangatire, T. (2021). Undergraduate nursing students' self-reported professional behaviour at the University of Namibia. *Health SA Gesondheid*, 26. DOI: 10.4102/hsag.v26i0.1703.

Torkaman, M., Momennasab, M., Yektatalab, S., & Eslami shahrbabaki, M. (2022). Nurses' patient safety competency, a predictor for safe care in psychiatric wards?. *Perspectives in Psychiatric Care*, 58(4), 2854-2861.

Toygar, İ., Hançerlioğlu, S., & Gacaner, S. (2020). Knowledge and competence of nursing students on patient safety. *İnönü University Health Services Vocational School Journal*, 8(3), 618-629.

Walpola, R. L., McLachlan, A. J., & Chen, T. F. (2018). A scoping review of peer-led education in patient safety training. *American Journal of Pharmaceutical Education*, 82(2), 6110.

Wijaya, D., Asmaningrum, N., Nur, K. R. M., Sitanggang, M. H., & Herawati, Y. T. (2023). Determinants of Nurse Professional Behavior: A cross-Sectional

Study of Nurses at Public Health Centers in Indonesia. *Babali Nursing Research*, 4(1), 170-184. Doi:10.37363/bnr.2023.41212.

Wills, N. L., Wilson, B., Woodcock, E. B., Abraham, S. P., & Gillum, D. R. (2018). Appearance of nurses and perceived professionalism. *International journal of studies in nursing*, 3(3), 30.

Wu, A. W., & Busch, I. M. (2019). Patient safety: a new basic science for professional education. *GMS journal for medical education*, 36(2).

Yılmaz, A., & Erdem, Ö. (2024). Patient safety competence of nursing students and affecting factors. *Journal of Patient Safety and Risk Management*, 29(1), 54-62. DOI: 10.1177/25160435231213302.

YILMAZ, D., & POLATDEMİR, E. (2020). Investigation of Professional Behavior of Third and Fourth Grade Students of Nursing Department. *Online Turkish Journal of Health Sciences (OTJHS)/Online Türk Sağlık Bilimleri Dergisi*, 5(2).