

Predictors of Perceived Professional Identity Among Undergraduate Nursing Students: A Cross-Sectional Study

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ABSTRACT

This study examined the level of Professional Identity (PI) among undergraduate nursing students and its association with predictors such as age, BSN year, home residence, career choice, future prospects, interest in nursing, and family in the profession. PI reflects an individual's connection to their field, shaped by its values and standards. An analytical cross-sectional study was conducted with 226 students at AFPGMI, Rawalpindi, using the PIFFS (Professional Identity Five Factors Scale). Data analysis included frequencies, percentages, mean, SD, and Chi-Square. A significant association was found between PI and predictors ($p < 0.001$). Students aged 22–25, in higher academic years, and from rural areas reported stronger PI. Key factors included access to information, career outlook, family in nursing, and interest ($p < 0.012$). Most students had low PI, influenced by age, education, residence, and career orientation. Academic progression and rural background enhanced PI. Mentorship, career counseling, and professional support are essential for PI development.

Keywords: Perceived Professional identity; Predictors; Undergraduate Nursing student.

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INTRODUCTION

Professional Identity (PI) refers to an individual's association with a particular profession. It involves understanding and embracing the specific standards and qualities that define the profession, and reflecting these qualities in one's professional conduct. A person's PI affects their status in society and how they interact with it (Guner et al., 2021). PI also reflects a sense of attachment, commitment, and self-concept that individuals develop as members of their selected profession (Matthews et al., 2019).

In the nursing profession, PI refers to an individual's self-perception and their interpersonal relationships, shaped by the traits, customs, and values of the nursing profession, which influence them to think, behave, and feel like nurses (Brewington & Godfrey, 2020). Nurses and undergraduate nursing students must possess a high PI to have a clear understanding and clinical integration of the professions they have chosen. PI development takes place through increased knowledge and experience (Browne et al., 2018).

As undergraduate nursing students acquire theoretical knowledge and clinical exposure, their confidence and competence grow. This confidence enhances their professional self-perception, fostering a stronger alignment with nursing values and roles (Vabo & Haugen, 2023). Strong PI is associated with heightened accountability, ethical awareness, and self-assurance, which are critical for delivering skilled, empathetic, and patient-centered care (Vabo et al., 2022).

Various social, educational, and personal factors influence the PIs of nursing students. Key personal qualities that foster professional maturity and PI include resilience, self-efficacy, and self-esteem (Tushnova et al., 2019; Mei et al., 2022). Additionally, academic self-efficacy and support from the university play a significant role in enhancing PI and professional engagement (Chen et al., 2023). Ultimately, the development of PI is reinforced through socialization during clinical practice and exposure to real-world role models (Alharbi et al., 2020).

Moreover, the PI among undergraduate nursing students is directly related to the quality of patient treatment, which is one of the main reasons it is so important. Critical thinking, effective communication, empathy, and adherence to ethical standards are among the characteristics that are more likely to be displayed by undergraduate nursing students who have a strong sense of their PI. Students are better able to make informed judgments, work with other healthcare professionals, and advocate for their patients when they believe they are capable and self-assured professionals. They are, therefore, more likely to offer patient-centered, safe, and comprehensive care (Gilvari et al., 2022).

It is essential for undergraduate nursing students to cultivate a strong PI, as it significantly influences their commitment to the profession, job satisfaction, and overall career success. Many undergraduate nursing students, however, struggle to establish a distinct and constructive PI for various internal and environmental reasons. Significant predictors of perceived PI included the amount of information available at the time of profession selection, the impact of home residence in an urban or rural area, the belief that nursing is a career with promising futures, personal interest in nursing, and the presence of family members who are already employed in the field. Understanding the importance of PI and identifying the predictors associated with the formation of positive PI predictors, this study aimed to assess the level of perceived PI among undergraduate nursing students and to determine the association between predictors including age, year of BSN, home residence, informed choice in selecting the nursing field, future career prospects, interest in the nursing profession, and having family members in nursing, and perceived PI.

METHODOLOGY

This cross-sectional analytical study was conducted from February to July 2023. The study used universal sampling to include all eligible undergraduate Nursing students with a total of 226 nursing students who are currently enrolled in the 2nd, 3rd, and 4th year of the Generic BSN program. First-year student nurses were excluded since they had not yet begun their clinical rotations, an important part of their nursing education and PI formation.

The research was conducted at College of Nursing, Armed Forces Post Graduate Medical Institute (AFPGMI), in Rawalpindi, Pakistan. Since the aim was to reach every member of the target demographic, no sample size estimation was needed. All participants were female nursing students recruited from a single institution.

The Professional Identity Five Factor Scale (PIFFS), an adopted questionnaire, was used for data collection. This scale was selected due to its previous use in similar contexts within South Asian countries, its established high reliability, and its alignment with the study's objectives. However, local validation is essential to ensure cultural relevance, and unfortunately, this step could not be completed due to time and resource limitations. It is recommending that future research focus on validating the scale within the local context, as this has been identified as a limitation of the current study. The creators of PIFFS evaluated its psychometric properties, confirming high reliability. Construct validity was supported by robust structural validity, and the hypothesized five-factor model was found to be "extremely stable" (Matthews et al., 2019). The original instrument's reliability ranged between $\alpha = 0.65$ and 0.85 across the five subscales. The internal consistency and concurrent validity of the PIFFS were verified with a Cronbach's alpha of 0.841 (Gusar et al., 2021).

PIFFS divided into two parts, the first part to gathered demographic characteristics, age, home residence, academic qualification (Previous schooling) and year of BSN. The second part of PIFFS consisted of 25 questions organized into five factors: Knowledge of professional practice (Items 1- 6), Professional experience (Items 7-12), Role model in profession (Items 13-17), Professional self-efficacy (Items 18-23), Affinity to a certain profession (Items 24-25). All items, except one, used a five-point Likert scale, with responses ranging from 1 (Never True) to 5 (Definitely True). The exception was the question, "Do you already know what kind of work or profession you prefer?" which required a Yes or No response.

The cutoff value for perceived Professional Identity is 91 out of 122. High perceived PI: Score above 75% (>91 out of 122). Low perceived PI: Score 75% or less (<91 out of 122) (Ahmed et al., 2024). Data collection was conducted in March 2024 using a self-administration method following an introduction to the research topic. Statistical analysis was performed using SPSS version 27.0. Categorical variables were presented as frequencies and percentages, while quantitative variables were expressed as mean and standard deviation (SD). The Kolmogorov-Smirnov test was used to assess the normal distribution of the data. Since the PI scores did not meet the assumption of normality, Chi-square analysis was used to examine the association between various predictors and PI among undergraduate nursing students. This statistical approach facilitated the relationships between the dependent variable, PI, and several independent variables, such as age, academic year, first choice of nursing, presence of nursing relatives, and other relevant factors.

The analysis was conducted using SPSS version-27, and the results were presented in the form of tables and graphs. These visual representations provided valuable insights into the key variables that influence the development of PI among undergraduate nursing students. This study received approval from the Institutional Ethical Committee of the National University of Health Sciences Rawalpindi (Reference number: Re: 422-AAA-ERC-AFPGMI). The research adhered to ethical guidelines, following the Declaration of Helsinki, ensuring informed consent, voluntary participation, confidentiality, and the use of collected information solely for research purposes.

Results

Table 1 presents the demographic information of the study variables: age, previous qualifications, year of BSN, home residence, and academic year. Among the participants, the majority (69.0%, n=156) were in the age group of 18 to 21 years, while 31.0% (n=70) were aged between 22 and 25 years. The vast majority of participants were intermediate-level student nurses, comprising 94.7% (n=214) of the total cohort, while only 5.3% (n=12) had baccalaureate degree. Regarding academic year distribution, 31.9% (n=72) of the participants were second-year students, 36.3% (n=82) were third-year students, and 31.9% (n=72) were fourth-year students. Additionally, the study found that 67.7% (n=153) of the participants were from urban areas, while 32.3% (n=73) were from rural areas, this distribution highlights the predominance of urban students in the nursing education at the College of Nursing, Armed Forces Post Graduate Medical Institute (AFPGMI), in Rawalpindi.

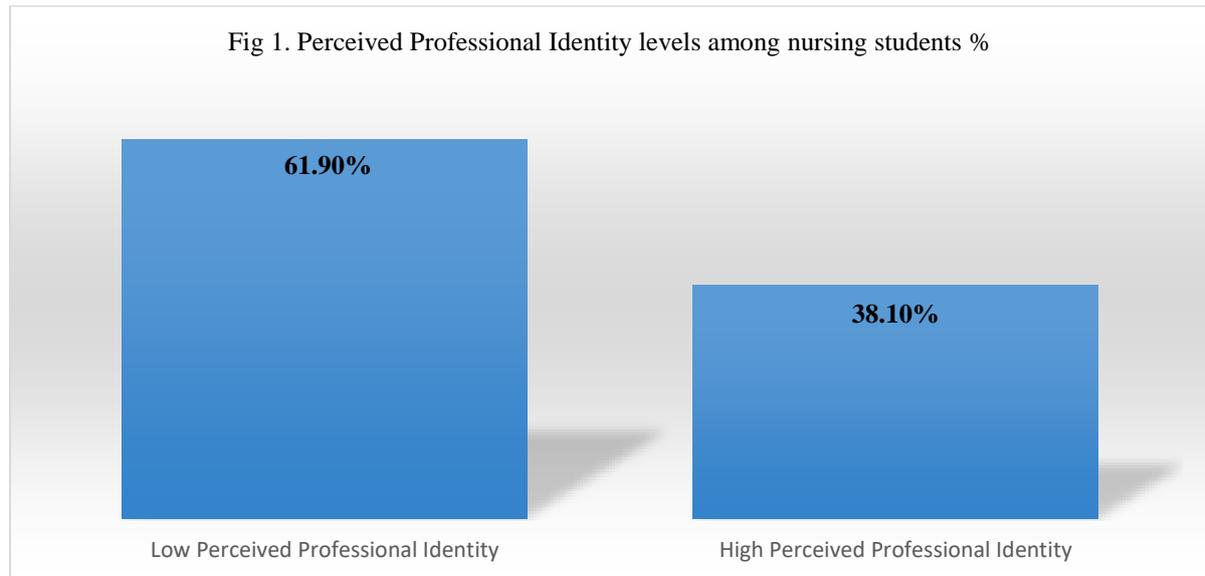
Demographic Variables Frequency (n) Percentage(%)

Demographic Variables	Frequency (n)	Percentage(%)
Age of respondent		
18-21	156	69.0
22-25	70	31.0
Previous Qualification		
Intermediate	214	94.7
Baccalaureate	12	5.3
Year of BSN		
2 nd Year	72	31.9
3 rd Year	82	36.3
4 th Year	72	31.9
Region		
Urban	153	67.7
Rural	73	32.3
Choose the Nursing profession with enough information		
Yes	146	64.6
No	80	35.4
Choose the nursing profession with future prospective		
Yes	174	77.0
No	52	23.0
Choose the nursing profession out of interest		
Yes	87	38.5
No	139	61.5
Any relative doing job in nursing profession		
Yes	52	23.0
No	174	77.0

Table 1. Demographic Characteristics of the study participant

Level of perceived PI among undergraduate nursing students

According to Figure 1, 38.10% of undergraduate nursing students have high perceived PI, which reflects stronger self-assurance, whereas 61.90% have low PI, which indicates less confidence in their positions. This implies that focused mentoring and clinical experience are required to improve students' PI.



Mean Score of Perceived PI among Undergraduate nursing students

Perceived PI scores among undergraduate nursing students vary over academic years, as seen in Table 2. The mean PI score was lowest among second-year students (84.74 ± 14.944), followed by fourth-year students (87.71 ± 14.459), and highest among third-year students (88.55 ± 12.966). A mean PI score of $87.07 (\pm 14.129)$ was obtained overall. This pattern implies that PI strengthens as student's advance, most likely due to more clinical exposure and real world experience. To promote consistent PI development, focused support during early education is crucial, as seen by the increased standard deviation of second-year results.

Table 2 Mean Score of Perceived PI among Undergraduate nursing students

Groups	Number	Minimum PI	Maximum PI	Mean PI	Std. Deviation
Second Year	72	45	114	84.74	14.944
Third Year	82	41	111	88.55	12.966
Fourth Year	72	46	113	87.71	14.459
Overall	226	41	114	87.07	14.129

Distribution of mean score of subscales and overall PI

According to the research findings as seen in Table 3, the "Knowledge of Professional Practice" subscale showed the highest PI score (24.82) indicating strong awareness of professional practices. In contrast, the "Affinity to a Certain Profession" subscale had the lowest score at 5.14, suggesting a weaker personal preference for specific nursing specializations.

The "Professional Experience" subscale scored 16.07, showing moderate exposure to the field, while "Professional Self-Efficacy" (21.37) and "Role Model in Profession" (19.67) demonstrated moderate to high scores. These results imply that although students display variation in their professional experience and personal preferences, they exhibit strong knowledge and confidence in their field.

Table 3 Distribution of mean score of subscales and overall PI

Subscales	Mean	SD	Min	Max
Knowledge of professional practice	24.82	4.865	6	30
Professional experience	16.07	5.427	6	29
Role model in profession	19.67	4.143	5	35
Professional self-efficacy	21.37	3.771	9	30
Affinity to a certain profession	5.14	1.109	2	9
Overall	87.20	14.351	41	114

Association of Predicting factors with the level of Perceived PI

Significant association between nursing students' perceived PIs and demographic characteristics (predictors) were found using Chi-Square tests, as shown in Table 4 PI and age seem to be strongly correlated, with students between the ages of 18 and 21 showing the lowest perceived PI (115 students) and those between the ages of 22 and 25 having the highest perceived PI (45 students). There is a statistically significant difference ($p < 0.001$). Another important consideration is education level; students in their second year report a lower perceived PI, whereas students in their third and fourth years report higher levels, indicating that PI gets stronger as one moves through the program ($p < 0.001$). Similarly, 107 students in urban areas report having a lower perceived PI than students in rural areas, indicating that rural experiences may help students develop a stronger PI ($p < 0.001$). Since students who have enough knowledge about the field are more likely to have a high perceived PI ($p = 0.000$), access to information is a significant predictor. Future prospects are also important; students with more positive career outlooks had greater degrees of PI ($p < 0.001$).

It's interesting to note that students with nursing relatives have a greater sense of PI than those without such family ties ($p < 0.001$), suggesting the importance of personal networks in forming professional attitudes. Lastly, there is a substantial correlation between interest in nursing and PI, with students who pursued nursing because they were interested in the topic reporting greater levels of PI ($p < 0.012$). All things considered, these results imply that nursing students' perceptions of their PIs are greatly influenced by their age, educational attainment, and place of residence, information availability, career orientation, hobbies, and family ties.

Table 4. Association of predictors and level of PI

Predictors	Variable	Low Perceived PI	High Perceived PI	Chi Square	P. Value
Age	18-21 years	115	41	29.604 ^a	< 0.001
	22-25 years	25	45		
Year of BSN	2 nd Year	58	14	17.604 ^a	< 0.001
	3 rd Year	48	34		
	4 th Year	34	38		
Region	Urban	107	46	12.821 ^a	< 0.001
	Rural	33	40		
Enough Information	Yes	68	78	41.343 ^a	< 0.001
	No	72	8		
Future Prospective	Yes	91	83	29.862 ^a	< 0.001
	No	49	3		
Out of Interest	Yes	45	42	6.271 ^a	.012
	No	95	44		
Relatives in Nursing	Yes	15	37	31.393 ^a	< 0.001
	No	125	49		

Chi- Square test with p value <.05 as significant

CONCLUSION AND RECOMMENDATIONS

This study, conducted at AFPGMI College of Nursing in Rawalpindi, Pakistan, aimed to assess the level of perceived PI among undergraduate nursing students. The study also seeks to determine the association between predictors, including age, year of BSN, home residence, informed choice in selecting the nursing field, future career prospects, interest in the nursing profession, having family members in nursing, and perceived PI.

According to the study's findings, the majority of undergraduate nursing students (61.90%) had a low perceived PI, which could indicate uncertainty or a lack of confidence in their responsibilities within the nursing profession. The fact that 38.10% of students have a high perceived PI is encouraging since it shows that a significant portion of undergraduate nursing students are confident in their future responsibilities. A previous study where the PI score was in the intermediate range produced consistent results. The future job positioning of undergraduate nursing students was not sufficiently obvious (Tang et al., 2022). The results of the current study are consistent with another study that revealed nursing interns' PI to be at a moderate level (mean score: 4.02 ± 0.63). Nursing interns, like the students in this study, may not have fully established their PIs yet, based on their moderate level score (Zeng et al., 2022).

The transitional period between theoretical learning and clinical practice was highlighted by Zeng et al. (2022), who also found that nursing interns had moderate PI levels (mean score: 4.02 ± 0.63). Li (2024) found that nursing students had poor PI, which was impacted by leadership positions, parental education, and academic achievement. On the other hand, 78.3% of nursing interns had high PI, according to Ahmed et al. (2024). However, while having a high professional self-recognition (94.22%), Mbalinda et al. (2024a) discovered that only 50.87% of nurses were content with their group affiliation. Third-year students scored the highest (88.55 ± 12.97), followed by fourth-year students (87.71 ± 14.46) and second-year students (84.74 ± 14.94), indicating a reasonable level of mean PI scores in this study. According to Haghghat et al. (2020), PI scores increased as students advanced in their studies. Other research, however, used the Professional Identity Five-Factor Scale to find different PI scores. For example, Jafarianamiri et al. (2022) reported a mean PI of 61.86 ± 9.34 , whereas Gilvari et al. (2022) reported a high mean PI of 4.03 ± 0.93 .

The study also showed that undergraduate nursing students' perceived PIs are influenced by various factors, including age, practical exposure, and educational level. Older students (22-25 years old) have a higher perceived PI, while third- and fourth-year students show stronger confidence due to increased practical exposure and higher nursing education. A study found that undergraduate nursing students from rural areas had a higher PI score (4.16 ± 0.04) compared to urban nursing interns (3.87 ± 0.05 , $p < 0.01$). Additionally, rural students had a significantly greater PI than those from metropolitan areas (Zeng et al., 2022). Another study indicated that PI was notably correlated with school level, educational background, and the decision to major in nursing ($p < 0.05$). Key factors in the clinical learning environment included students' choice of nursing major, teaching methods, and interpersonal interactions (Zeng et al., 2021).

Nursing interns who chose nursing as their first major had a higher PI score (4.15 ± 0.04) compared to those who chose a different major (3.73 ± 0.06 , $p < 0.05$). This reflects their greater expectations and passion for nursing, which should be respected in their major choice (Zeng et al., 2022). Additionally,

a strong correlation exists between PI and choosing nursing as a career (Ahmed et al., 2024). The current study supports findings by Gilvari et al. (2022b), showing significant differences in PIs based on how individuals made their career decisions ($p < 0.05$). Intrinsic motivation also plays a crucial role, with personal passion for nursing being less common among respondents (Gilvari et al., 2022). A study found significant differences in PI among nurse interns based on their pre-university education, with most students choosing nursing as their profession, indicating growth through knowledge building (Ahmed et al., 2024). Notably, rural students had a higher perceived PI compared to urban counterparts, with all p-values below 0.05 showcasing these differences, potentially due to cultural or experiential factors.

Research indicates that rural nursing students, whose families lived in those regions, exhibited a stronger sense of PI (Chen et al., 2020). A consistent investigation also revealed that rural nursing students scored higher in PI dimensions than urban students ($p = 0.038$) (Zeng et al., 2021). Factors influencing PI included residential area, the impact of the pandemic on employment intentions, reasons for choosing nursing, and early PI scores, while connections to relatives in nursing did not significantly affect PI (Gilvari et al., 2022).

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