

Factors influencing nursing professionalism among nursing students in South Korea: a descriptive study

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Purpose: This study aims to explore the factors influencing nursing professionalism among nursing students, focusing on the image of nurses, satisfaction with their major, and career metacognition. **Methods:** We conducted a descriptive survey with 185 nursing students from D city and K region on June 10–30, 2024. Data were analyzed using IBM SPSS ver. 27.0 (IBM Corp.), employing descriptive statistics, t tests, one-way ANOVA, Scheffé tests, Pearson's correlation coefficients, and regression analysis. Multiple linear regression analysis was used to identify factors affecting nursing professionalism among nursing students. **Results:** The regression analysis revealed that the image of nurses ($\beta=.69, p<.001$) and monitoring aspect of career metacognition ($\beta=.13, p=.025$) were significant predictors of nursing professionalism, accounting for 64.5% of the variance. **Conclusion:** The findings indicate that the image of nurses and monitoring component of career metacognition are critical in shaping nursing professionalism among nursing students. Therefore, nursing education programs should aim to improve the image of nurses and promote self-reflective career practices as strategies to foster professionalism among nursing students.

Keywords: Career; Image; Nursing; Personal satisfaction; Professionalism

INTRODUCTION

Nursing professionalism encompasses the beliefs, concepts, and impressions central to the role of a nurse, forming the foundation of holistic nursing practice and closely aligning with values in nursing [1]. Recent studies show significant expansion in nurses' roles and responsibilities, with an increasing need for nursing professionalism within the healthcare sector [2]. As the field evolves, strong and positive nursing professionalism is vital for delivering high-quality care [3]. A well-established sense of nursing professionalism promotes quality care and improves performance, leading to higher organizational commitment and lower turnover intention, particularly among new nurses adapting to clinical

settings [4,5]. Nursing professionalism shapes individual motivation and aspirations, influences human perception and interpretation, and forms a perspective for seeing, feeling, and interpreting objects, scenes, and situations, thereby essentially acting as a lens through which the nursing world is viewed [1]. Education is crucial in shaping nursing professionalism, which is developed through theoretical learning and practical experience [6]. Given its importance in influencing future attitudes and behaviors, fostering strong professionalism in nursing students is essential [1,3,6,7].

The image of nurses refers to the belief that nurses hold about nursing and the profession and perceptions held by doctors, staff, patients, and guardians within the workplace, shaped by their cumulative experiences [8]. A positive image

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of nurses promotes the development of strong nursing professionalism and facilitates changes in values and attitudes toward the profession [9]. It fosters nurses' sense of pride, self-esteem, and professionalism, reinforcing their commitment to their roles [6]. Therefore, forming and maintaining a positive image is essential for strengthening nursing professionalism.

Satisfaction with one's major refers to how individuals evaluate and judge their current field of study relative to their career or professional standards [10]. Studies consistently show that nursing students who are more satisfied with their major often have higher clinical satisfaction and a stronger professional identity [11]. Given that nursing education integrates theory and practice, satisfaction with one's major directly influences learning persistence, which is crucial for developing nursing professionalism [12].

Career metacognition is a relatively new concept that deepens the understanding of how individuals navigate their career paths. It examines how metacognitive processes function in career performance and problem-solving, particularly among college students [13]. Career metacognition includes cognitive behavioral strategies used to achieve goals effectively and comprises four main components: planning, evaluation, monitoring, and regulation. Planning involves setting career goals and devising effective strategies [13]. Evaluation focuses on assessing the effectiveness of career plan implementation [13]. Monitoring involves consciously recognizing one's career-related thoughts, attitudes, and emotions and examining their influence on career development [13]. Regulation refers to strategically managing performance, including correcting errors and addressing challenges during the execution of career plans [13]. The role of metacognitive strategies in career development remains unexplored, particularly among nursing students with relatively well-defined career paths. However, the evolving job market may present diverse career opportunities and challenges beyond traditional clinical roles, suggesting that career metacognition could become increasingly significant in nursing students' professional growth.

Previous studies have identified factors that influence nursing students' professionalism, such as the image of nurses and satisfaction with their major [2,6,7,12,14]. However, these studies primarily focused on external factors, limiting their ability to fully reflect the active career development process of nursing students. Career metacognition is pivotal in shaping nursing students' professional identity and roles,

with research showing that career identity and preparation behavior influence nursing professionalism [15]. Although studies have explored nursing professionalism through career identity and preparation behavior, they have not addressed the deeper cognitive strategies that individuals use to navigate their career paths. Career metacognition, which involves cognitive strategies for planning, evaluating, and regulating career-related decisions and actions [13], offers a more comprehensive perspective. It provides insights into how nursing students actively shape and refine their career goals and strategies, potentially influencing the development of professionalism on a deeper level. Through enhanced self-reflection and cognitive approaches, career metacognition can support nursing students in setting and achieving their professional goals more effectively.

In this context, the study provides an in-depth exploration of how nursing students' image of nurses and satisfaction with their major, as well as the newly introduced concept of career metacognition, contribute to the development of nursing professionalism. Career metacognition involves cognitive strategies for setting and achieving career goals, offering a new perspective on how to cultivate professionalism among nursing students. Therefore, by examining this new variable, this study aims to provide insights that can inform the design of educational programs to enhance professionalism among nursing students. Accordingly, the objectives of this study are as follows: (1) to assess the levels of the image of nurses, satisfaction with their major, career metacognition, and nursing professionalism among participants; (2) to determine differences in nursing professionalism based on participants' general characteristics; (3) to examine correlations between the image of nurses, satisfaction with their major, career metacognition, and nursing professionalism; and (4) to identify factors influencing nursing professionalism among nursing students.

METHODS

Ethical statements: This study was approved by the Institutional Review Board (IRB) of Kyungpook National University (No. 2024-0211). Informed consent was obtained from all participants.

1. Study Design

This study used a descriptive survey to identify factors that

influence professionalism among nursing students.

2. Participants

The participants were nursing students enrolled in universities in Daegu and North Gyeongsang Province. The sample size was determined using G*Power 3.1.9.7, with a significance level, effect size, power, and predictor variable of .05, .15, .95, and 10 (7 general characteristics and 3 independent variables), respectively. The calculated sample size was 172, and to account for a potential 15% dropout rate, responses were collected from 198 students. After excluding 13 participants with incomplete responses, data from 185 participants were included in the final analysis.

3. Measurements

1) Nursing professionalism

Nursing professionalism was measured using 27 items from the nursing professionalism scale developed by Yeun et al. [1]. Two items that were difficult for nursing students to comprehend or could be misinterpreted owing to limited experience were excluded [16] from the original 29-item scale. The tool includes the following subdomains: professional self-concept, social awareness, nursing expertise, nursing practice roles, and nursing independence. Each item was rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated higher levels of professionalism. The reliability (Cronbach's α) was .92 in both Yeun et al. [1] and the current study.

2) Image of nurses

Participants' image of nurses was assessed using an instrument developed by Song [8] and later modified by Kim and Kim [17]. This tool comprises 40 items rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate a more favorable image of nurses. The reliability (Cronbach's α) was .95 in Kim and Kim [17] and the current study.

3) Satisfaction with major

Participants' satisfaction with the nursing major was evaluated using 18 items related to satisfaction with one's major, selected from the 27-item department satisfaction tool developed by Kim and Ha [10]. Each item was rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly

agree). Higher scores indicated greater satisfaction with the nursing major. The reliability (Cronbach's α) was .92 at the time of development [10] and .88 in the current study.

4) Career metacognition

Career metacognition was assessed using a tool developed by Kim and Lee [13]. This scale includes 20 items categorized into four subfactors: planning, evaluation, monitoring, and regulation. Items were rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicated greater use of career metacognition in effectively achieving career goals. The reliability (Cronbach's α) was .91 in Kim and Lee [13] and .93 in the current study.

4. Data Collection

Data were collected between June 10–30, 2024, via an online survey targeting nursing students in Daegu and North Gyeongsang Province. Permission was obtained to use all measurement tools in this study from their respective developers. Data were collected by posting recruitment notices containing links to online consent forms and questionnaires on social media platforms. The first page of the questionnaire required participants to confirm their voluntary consent, and only those who agreed could proceed to the survey. Participants were informed of their right to withdraw at any time without penalty and assured that the collected data would be used exclusively for research purposes and destroyed upon completion of the study. The online survey took approximately 10 minutes to complete, and participants received a mobile food coupon as a token of appreciation. All personal information was destroyed immediately after the coupons were distributed.

5. Data Analysis

Data were analyzed using IBM SPSS ver. 27.0 (IBM Corp.). Descriptive statistics were used to analyze the participants' general characteristics and image of nurses, satisfaction with their major, career metacognition, and nursing professionalism. Differences in nursing professionalism based on the general characteristics of the participants were analyzed using *t* tests and one-way ANOVA, with Scheffé tests used for post-hoc analysis. Statistical significance was defined as *p*-values < .05. Relationships between key variables were examined using Pearson's correlation coefficients. Multiple lin-

ear regression analysis was conducted using variables that showed statistical significance in relation to nursing professionalism.

RESULTS

1. Image of Nurses, Satisfaction with Major, Career Metacognition, and Nursing Professionalism among Participants

The mean scores for participants' image of nurses and satisfaction with the nursing major were 3.83 ± 0.38 and 3.89 ± 0.47 , respectively. Career metacognition showed an overall mean score of 3.63 ± 0.61 , with subfactor scores as follows: planning (3.99 ± 0.65), evaluation (3.17 ± 0.94), monitoring (3.57 ± 0.84), and regulation (3.80 ± 0.66). The mean score for nursing professionalism was 3.72 ± 0.47 . All scores were based on a 5-point scale (Table 1).

2. Differences in Nursing Professionalism According to Participants' General Characteristics

Statistically significant differences in nursing professionalism were observed based on age, academic year, clinical practice experience, and acquaintance with nurses. Students aged 20–21 years showed higher levels of professionalism (3.85 ± 0.39) than those aged ≥ 22 years ($t = 2.88, p = .005$). First- and second-year students had higher professionalism levels

(3.84 ± 0.42) than third- and fourth-year students ($t = 3.53, p < .001$). Those without clinical practice experience scored higher (3.85 ± 0.43) than those with experience ($t = 3.81, p < .001$). Students with nurse acquaintances exhibited higher levels of professionalism (3.78 ± 0.47) than those without them ($t = 2.28, p = .024$). No significant differences in nursing professionalism were observed based on sex, motivation for choosing nursing, or final career path (Table 2).

3. Correlations between the Image of Nurses, Satisfaction with Major, Career Metacognition, and Nursing Professionalism

Participants' image of nurses ($r = .78, p < .001$) and satisfaction with their major ($r = .51, p < .001$) were positively correlated with nursing professionalism. All four subfactors of

Table 1. Levels of the Image of Nurses, Satisfaction with Major, Career Metacognition, and Nursing Professionalism among the Participants (N=185)

Variables	M±SD	Min	Max
Image of nurses	3.83 ± 0.38	2.95	4.78
Satisfaction with major	3.89 ± 0.47	2.50	4.83
Career metacognition	3.63 ± 0.61	1.90	5.00
Planning	3.99 ± 0.65	2.00	5.00
Evaluation	3.17 ± 0.94	1.00	5.00
Monitoring	3.57 ± 0.84	1.00	5.00
Regulation	3.80 ± 0.66	1.00	5.00
Nursing professionalism	3.72 ± 0.47	2.15	4.89

M, mean; SD, standard deviation.

Table 2. Differences in Nursing Professionalism According to General Characteristics of the Participants (N=185)

Variables	Categories	n (%)	M±SD	t or F (p)
Sex	Female	159 (85.9)	3.71 ± 0.46	1.01 (.314)
	Male	26 (14.1)	3.81 ± 0.54	
Age (year)	20–21	72 (38.9)	3.85 ± 0.39	2.88 (.005)
	≥ 22	113 (61.1)	3.64 ± 0.50	
Academic year	Freshman, sophomore	91 (49.2)	3.84 ± 0.42	3.53 (<.001)
	Junior, senior	94 (50.8)	3.61 ± 0.49	
Application motivation of nursing	Aptitude and interesting	59 (31.9)	3.79 ± 0.48	0.06 (.577)
	Well-employed	69 (37.3)	3.67 ± 0.47	
	Fitting to score	31 (16.7)	3.70 ± 0.40	
	Recommendation of other	26 (14.1)	3.72 ± 0.53	
Clinical practice experience	Yes	89 (48.1)	3.59 ± 0.48	3.81 (<.001)
	No	96 (51.9)	3.85 ± 0.43	
Final career destination	Domestic clinical nurse	82 (44.3)	3.73 ± 0.44	1.66 (.193)
	International clinical nurse	44 (23.8)	3.81 ± 0.43	
	Other	59 (31.9)	3.64 ± 0.53	
Nurse acquaintance	Yes	121 (65.4)	3.78 ± 0.47	2.28 (.024)
	No	64 (34.6)	3.62 ± 0.46	

M, mean; SD, standard deviation.

career metacognition also showed significant positive correlations with nursing professionalism: planning ($r = .33, p < .001$), evaluation ($r = .24, p = .001$), monitoring ($r = .27, p < .001$), and regulation ($r = .16, p = .029$) (Table 3).

4. Factors Influencing Nursing Professionalism among Participants

To identify factors that influence nursing professionalism, variables with significant differences (academic year, clinical practice experience, and having nurse acquaintances) and those with significant correlations (image of nurses, satisfaction with major, and career metacognition) were set as independent variables. Multiple regression analysis was performed with nursing professionalism as the dependent variable to evaluate the explanatory power and predictive strength of each factor (Table 4). Although nursing professionalism showed differences across age groups, age was excluded as a variable in the final regression analysis because

of its nonsignificant correlation with nursing professionalism ($r = -.07, p = .368$). Nominal variables (academic year, clinical practice experience, and having nurse acquaintances) were converted into dummy variables for analysis.

Multicollinearity was assessed using tolerance and variance inflation factor (VIF) values. Tolerance values ranged from 0.178 to 0.948 (within 0.1 to 1.0), while VIF values ranged from 1.06 to 5.63 (< 10), indicating no multicollinearity issues. The Durbin-Watson test showed a value of 2.13, confirming no autocorrelation in errors. The regression model analyzing the effects of the independent variables on nursing professionalism was statistically significant ($F = 35.31, p < .001$). The final influential factors identified were the image of nurses ($\beta = .69, p < .001$) and monitoring of career metacognition ($\beta = .13, p = .025$). Overall, the regression analysis revealed that the independent variables accounted for 64.5% of the variance in nursing professionalism (Table 4).

Table 3. Correlations Between the Image of Nurses, Satisfaction with Major, Career Metacognition, and Nursing Professionalism (N=185)

Variables	Image of nurses	Satisfaction with major	Career metacognition				Nursing professionalism
			Planning	Evaluation	Monitoring	Regulation	
			<i>r</i> (<i>p</i>)				
Image of nurses	1						
Satisfaction with major	.51 (<.001)	1					
Career metacognition							
Planning	.33 (<.001)	.48 (<.001)	1				
Evaluation	.34 (<.001)	.29 (<.001)	.44 (<.001)	1			
Monitoring	.24 (.001)	.31 (<.001)	.37 (<.001)	.53 (<.001)	1		
Regulation	.20 (.006)	.25 (.001)	.50 (<.001)	.59 (<.001)	.56 (<.001)	1	
Nursing professionalism	.78 (<.001)	.51 (<.001)	.33 (<.001)	.24 (.001)	.27 (<.001)	.16 (.029)	1

Table 4. Factors Influencing Nursing Professionalism among the Participants (N=185)

Variables	B	SE	β	t	<i>p</i>	Tolerance	VIF
(Constant)	-0.06	0.27		-0.23	.816		
Academic year (freshman, sophomore) ^{a)}	-0.07	0.10	-.08	-0.74	.459	.18	5.54
Clinical practice experience (no) ^{b)}	-0.13	0.10	-.14	-1.33	.185	.18	5.63
Nurse acquaintance (no) ^{c)}	0.05	0.05	.05	1.16	.250	.95	1.06
Image of nurses	0.85	0.07	.69	11.95	<.001	.61	1.64
Satisfaction with major	0.10	0.06	.10	1.68	.094	.60	1.67
Career metacognition							
Planning	0.05	0.04	.07	1.25	.215	.59	1.69
Evaluation	-0.05	0.03	-.10	-1.56	.121	.54	1.86
Monitoring	0.07	0.03	.13	2.27	.025	.60	1.65
Regulation	-0.03	0.05	-.05	-0.76	.447	.51	1.94
$R^2 = .645, AdjR^2 = .627, F(p) = 35.31 (<.001)$							

^{a)}Dummy variables (ref. junior, senior); ^{b)}Dummy variables (ref. yes); ^{c)}Dummy variables (ref. yes); SE, standard error; VIF, variance inflation factor.

DISCUSSION

This study explored strategies to enhance nursing professionalism among nursing students by analyzing the relationships between participants' image of nurses, satisfaction with their major, and career metacognition, as well as their combined effect on professionalism. The lack of prior studies focusing on career metacognition in nursing students creates challenges for developing a comprehensive discussion on the topic. To address this, comparisons were drawn from studies that examined related variables to guide the discussion. Although this may be considered a limitation of the study, understanding the potential role of career metacognition in shaping nursing professionalism provides valuable insights into preparing future nurses to meet the dynamic needs of the healthcare field.

In this study, nursing students' image of nurses received an average rating of 3.83 ± 0.38 out of 5 points, aligning with the 3.83 points reported by Gu and Lee [14]. Recent shifts in the healthcare environment, increased demand for nurses, and evolving social perceptions of their dedication have generally improved the image of nurses [9]. Considering previous research [7] indicating that a positive image of nurses significantly influences the development of nursing professionalism, a systematic approach to fostering such an image is crucial in nursing education [12]. Despite progress, nurses are still often perceived as lacking autonomy in patient care. Therefore, highlighting their professional responsibility and dedication is vital for improving the public's view of nursing as a respected profession [2]. Effective strategies could include maintaining and reinforcing positive images, improving media portrayals, implementing various campaigns to enhance the recognition that nurses receive, and integrating relevant programs into nursing curricula. Examples of such initiatives are the Korean Nursing Association's badge-wearing campaign [18] and problem-based learning programs that combine nursing and media studies to enhance the public image of nurses [19]. These multifaceted approaches can improve the social perceptions of nursing students and foster their professional identity.

In this study, nursing students' satisfaction with their major was, on average, 3.89 ± 0.47 out of 5 points. This is lower than the 3.92 points reported by Lee and Seo [6] but higher than the 3.66 points reported by Lee and Kim [11]. These differences may be attributable to variations in participant characteristics and sample sizes across studies. Overall, the find-

ings suggest that the nursing students in this study showed a relatively high level of satisfaction with their major compared to those in previous studies. Satisfaction with their major is crucial for nursing students, as it positively influences values and attitudes toward the profession [6] and enhances job satisfaction among newly graduated nurses [11]. Conversely, a student's dissatisfaction with their major may contribute to a negative view of the nursing profession, potentially hindering the formation of positive nursing professionalism [20]. Therefore, nursing education institutions should adopt multifaceted strategies to improve students' satisfaction with their major. Enhancing academic achievement and fostering a deep understanding of and attachment to nursing can be achieved through mentoring programs, career exploration opportunities, and stronger connections to clinical settings. Additionally, refining curricula, improving learning environments, and enhancing student support services could further promote satisfaction. These approaches can help students develop a comprehensive understanding of their field, potentially leading to greater satisfaction and a significant commitment to nursing.

Nursing students' average level of career metacognition was 3.63 ± 0.61 out of 5 points. Career preparation behavior, defined as the practical actions taken to identify the aptitude of an individual and achieve career goals for informed and appropriate career decision-making [21], was rated 3.1 out of 4 points in a study by Sim and Joung [20]. Although direct comparison is challenging owing to different concepts and measurement tools, these results are broadly comparable to the career metacognition scores in this study. Career metacognition is a critical competency for nursing students as they navigate their development path as healthcare professionals, highlighting the need for further research on this topic. This study serves as a foundational investigation into career metacognition among nursing students; however, additional research is necessary. In particular, studies are needed to develop and verify the effectiveness of programs that aim to enhance career metacognition among nursing students.

Nursing students' professionalism reached an average of 3.72 ± 0.47 out of 5 points, which is slightly higher than that found by Nam and Kim [22]. However, scores varied significantly by academic year, with first- and second-year students scoring higher than third- and fourth-year students. This decline among upper-year students may be due to increased educational and employment pressure and challenges during

clinical practice, which can negatively affect nursing students' self-esteem and professional identity [23,24]. Therefore, developing targeted curricular and extracurricular activities is critical for reinforcing professionalism throughout students' academic journeys. These activities include pre-clinical education, psychological preparation for clinical environments, and mentoring programs with experienced nurses to bridge the gap between ideals and clinical realities [25]. Strengthening these initiatives will provide support to students in maintaining and enhancing their professionalism as they progress through their nursing program, ultimately fostering a stronger professional identity and preparedness for future practice.

Two primary factors were found to influence nursing professionalism among nursing students in this study: the image of nurses ($\beta = .69, p < .001$) and monitoring of career metacognition ($\beta = .13, p = .025$). Combined, these two factors accounted for 64.5% of the variance in nursing professionalism in this study. Consistent with previous findings, the image of nurses is a strong predictor of nursing professionalism [2] and career preparation behavior similarly influences nursing professionalism [15].

The image of nurses emerged as the most significant factor shaping nursing professionalism, underscoring its crucial role in the formation of professional identity among nursing students. Therefore, initiatives to enhance nursing professionalism should prioritize the cultivation of a positive image of nurses. For instance, in child health nursing, a positive image may not only encourage students to feel prouder of their role as nurses but also increase their interest in specializing in the field. Image-making classes designed to instill pride and core nursing values can effectively increase professionalism [26]. Educational strategies should incorporate media literacy programs to help students critically evaluate how nurses are portrayed, thus fostering more realistic and positive perceptions of the profession. Additionally, "Nursing Ambassador" initiatives, which include mentorship by role models and shadowing opportunities in diverse healthcare settings, can further reinforce the professional image of nurses, aiding students in developing aspirational and realistic career goals.

The significant effect of monitoring suggests that students' ability to reflect on their career-related thoughts and emotions is vital for developing nursing professionalism. Clinical practicums in nursing education offer an ideal environment for students to actively monitor their career aspirations and receive valuable feedback on their professional growth [27].

For instance, exposure to specialized fields such as pediatric nursing allows students to assess their suitability and interest in specific nursing areas [28]. However, limited practicum opportunities, primarily in regions affected by societal changes such as declining birth rates [27], may restrict students from exploring various specialties and gaining the necessary hands-on experience. Integrating structured reflective practices and career-monitoring activities into the nursing curriculum is crucial for addressing this limitation. For instance, reflective journaling exercises [29] can encourage students to consciously evaluate their career-related thoughts, attitudes, and emotions. Peer coaching sessions [30] in which students share reflections and receive feedback from peers could further enhance these skills. By providing such structured opportunities, nursing programs can support students in actively monitoring their career progress despite limited practicum opportunities. This approach helps maintain a positive outlook on diverse nursing fields while fostering professional growth. Combining efforts to promote a positive image of nurses and encourage active career monitoring could enable educational institutions to better support students in developing nursing professionalism, thereby preparing them for the demands of the healthcare environment.

Based on the results of this study, although monitoring career metacognition was found to significantly influence nursing professionalism, other components, including planning, evaluation, and regulation, did not show significant effects. This finding may be attributable to several factors. First, as a relatively new concept, career metacognition may not yet be fully integrated into nursing education, thus limiting students' opportunities to develop and apply these skills. Second, given that nursing students often have a defined career path, the planning and regulation aspect of career metacognition may be less critical compared to fields with more diverse or uncertain career trajectories. Finally, these subfactors may influence nursing professionalism indirectly through other variables rather than having a direct effect. Future research should explore the roles of different career metacognition components and their relationships with the development of nursing professionalism.

This study has some limitations that can provide suggestions for future research. The study involved nursing students from specific regions, limiting the generalizability of the findings to nursing students nationwide. The limited research on career metacognition among nursing students provides insufficient data for direct comparison. Therefore, fu-

ture research should include nursing students from diverse regions to improve generalizability, further examine the relationship between career metacognition and nursing professionalism, and develop and verify the effectiveness of programs designed to improve nursing students' image of nurses and monitoring of career metacognition. These studies would contribute to a deeper understanding of the factors affecting nursing professionalism and help develop effective strategies to enhance it among nursing students.

CONCLUSION

This study identified the image of nurses and monitoring of career metacognition as key factors influencing nursing professionalism among nursing students, accounting for 64.5% of the variance. Improving nursing students' image of nurses and fostering their monitoring of career metacognition are crucial for strengthening nursing professionalism.

The findings of this study indicate the need for educational institutions to implement strategies that promote positive perceptions of the nursing profession and support students' development of career-related metacognitive skills, ultimately resulting in stronger professional values. Effective strategies may include media literacy programs, positive role modeling, reflective journaling, and peer coaching. Incorporating these approaches into nursing education can foster professional values and identity and prepare students for future challenges in healthcare. Future research should evaluate the effectiveness of these interventions and examine the link between career metacognition and nursing professionalism.

ARTICLE INFORMATION

Authors' contribution

Conceptualization: all authors; Methodology: Bokyoung Kim; Software: Jiyeon Park, Gain Seo; Validation: Bokyoung Kim; Data collection: Jiyeon Park, Gain Seo, Bokyoung Kim; Formal analysis: Jiyeon Park, Gain Seo, Bokyoung Kim; Investigation: Jiyeon Park, Seon Woo Ko, Na Yeon Kim, Jiyeon Park, Gain Seo; Resources: Bokyoung Kim; Writing-original draft: all authors; Writing-review & editing: all authors; Supervision: Bokyoung Kim; Project administration: Bokyoung Kim.

Conflict of interest

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Data availability

Please contact the corresponding author for data availability.

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