

Nursing Students' Perspectives on Current Nursing Uniform in Iran: A Cross-sectional Study

Abstract

Background: The uniform plays a crucial role in establishing professional identity and recognition. In Iran, the inability to differentiate nurses from other healthcare team members has led to dissatisfaction among both patients and nurses. This research aimed to explore the perspectives of nursing students regarding nursing uniforms in Iran. **Materials and Methods:** This study was conducted as a cross-sectional descriptive study involving 457 nursing students from Isfahan, Iran. The survey was carried out between April and May 2024, utilizing a non-probability sampling method. The data collection instrument included a researcher-developed questionnaire with two sections: demographic information and students' opinions on uniforms. Data analysis was conducted utilizing both descriptive and analytical statistical methods, with the statistical significance threshold set at $p < 0.05$. **Results:** According to the results, 70.70% of students in terms of "appearance," 78.10% in terms of "comfort," 68.50% in terms of "a sense of professional identity," 65.20% in terms of "sense of self-confidence," 54.30% in terms of "infection control regulations," and 58.90% in terms of "influence on the nursing image" preferred scrubs to white coats. The factors of age, academic semester, and academic degree were significantly associated with the selection of uniform type ($f = 455$, $t = 2.87$, $p < 0.05$). **Conclusions:** Nursing students showed a preference for the scrub uniforms over the white coat across various aspects. Furthermore, they emphasized the importance of recognizing the variations in uniform colors across different units, deeming the use of white as unsuitable for all units.

Keywords: Iran, Isfahan, nursing, nursing students, uniform

Introduction

Uniforms often serve as a foundation for the immediate perceptions and opinions formed about those who wear them.^[1] The manner of dress plays a significant role in how individuals are identified by others.^[2] Nurses at a treatment center wear a distinctive uniform that sets them apart from other professionals within the facility.^[3] This uniform acts as a visual indicator, helping individuals identify the wearer's role, and is essential in influencing the public's perception of the nursing profession.^[4,5] The perception of nursing image has evolved significantly over the years. Each generation has brought its own distinct traits, which have greatly influenced the design of nursing uniforms. Individuals from the Silent Generation, born between 1925 and 1945, are often recognized for their adherence to rules and their preference for a consistent white coat. In contrast, Generations Y and Z, encompassing those born from 1980 to 2000, prioritize

diversity in their uniforms.^[6] This matter highlights the importance of recognizing generational shifts in nursing uniforms.^[7]

Uniforms play a significant role in the recognition of individual roles within an organization.^[5] Not having a recognizable uniform can lead to confusion for the patient and their family regarding who is responsible for their treatment and care.^[8] Nurses wearing identifiable uniforms can help reduce anxiety levels in their patients.^[9] In contemporary nursing, perceptions regarding nursing uniforms have evolved, leading to a shift away from traditional viewpoints.^[10] In developed nations, nurses often wear scrubs for their affordability, comfort, and ease of maintenance while also allowing for personal expression that resonates with the current generation.^[11] Research indicates that scrubs with short sleeves are more effective in minimizing the risk of infections. These findings support the potential for broader adoption of scrubs as standard nursing

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uniforms.^[12] A study found that patients view nurses in scrubs as more professional than those in traditional white uniforms. In many Iranian hospitals, the clothing of nurses often resembles that of other healthcare professionals, blurring the distinction intended to elevate the nursing profession.^[7] Nurses' white coats are viewed as a barrier to effective therapeutic communication.^[13] Furthermore, pathophysiological phenomena such as "white coat syndrome" can significantly impact patients' trust and confidence.^[14]

In Iran, the official attire for nursing staff varies across different provinces, and there is no standardized legislation governing nurses' uniforms. The official guidelines established by the Ministry of Health specify that nurses across various units are to wear white coats, with the exception of special units. A key characteristic that sets nursing staff apart from other personnel is their identification tags. This situation has resulted in significant disorder and uncertainty, to the point where patients often struggle to differentiate nursing personnel from other healthcare team members. Consequently, this has led to dissatisfaction among both patients and nurses.^[15] Many patients find the identification tags hard to read because they are small and often obscured.^[8] Scrub uniforms serve as an effective means of addressing the challenge of recognizing nurses.^[16] By distinguishing nursing attire, we can enhance the professional image of nursing and assist patients in easily identifying their caregivers.^[17] The nursing image significantly influences individuals' decisions to pursue, stay in, or advocate for the profession, with the style of nurses' uniforms playing a key role.^[18] It is crucial to explore the views of professionals, especially students, regarding the nursing uniform based on the discussed cases. Changes to key aspects of the field require a comprehensive review and input from professionals. This research aimed to explore the perspectives of nursing students regarding nursing uniforms in Isfahan, Iran, in 2024.

Materials and Methods

This research is a cross-sectional descriptive study conducted between April and May 2024. The objective was to explore the perspectives of nursing students in Isfahan. A total of 457 nursing students from Isfahan City, enrolled at Isfahan University of Medical Sciences and Islamic Azad University of Isfahan across various academic levels, participated in the study. The sample size was calculated according to $z = 1/96$, $p = 0/5$, $d = 0/04$, and $n = 1200$. The sampling was conducted using a non-probability convenience method from April to May 2024. The study instrument had two sections, with the first containing six demographic items. The second section of the questionnaire developed by the researcher, titled "Uniform," consists of 10 items. The initial six items focus on aspects such as "appearance," "comfort while performing tasks," "sense of professional identity and differentiation from other health team members," "self-confidence," "infection control regulations," and "influence on the nursing image." The student chose either the "white coat" or "scrub" uniform,

effectively highlighting the discussed factors. The following four items inquire about the color suggested by the student for uniforms in the general, emergency, intensive care, and neonatal/pediatric units, considering the unique nature of each unit. A questionnaire on nurses' uniforms was created using library and online resources and then distributed to 10 nursing faculty members for feedback before receiving approval. The questionnaire achieved a content validity index of 0.81 and a content validity ratio of 0.73, with satisfactory face validity above 1.5. After 20% completion, the Cronbach's alpha was 0.87, indicating acceptable reliability. The eligibility requirements for participation in the study encompassed a willingness to engage and enrollment in one of the nursing programs at the bachelor's, master's, or doctoral level. Following a detailed explanation of the study's objectives and obtaining approval from the relevant faculty authorities, a link to the online questionnaire was disseminated via social media. Additionally, students received essential training on how to complete the questionnaire and share it effectively. The response rate for the questionnaires was 72%. Descriptive analysis of the results was conducted using frequency reports, while qualitative indicators were assessed through mean and standard deviation, independent t-tests, and Chi-square tests. Data analysis was performed using SPSS version 26, with a statistical significance level set at $p < 0.05$.

Ethical considerations

This research received approval from the ethics committee at Isfahan University of Medical Sciences (IR.MUI.NUREMA.REC.1403.014) on April 20, 2024. The study's aim was communicated to all participants, who were considered prepared if they accessed and completed the questionnaire. Before starting, participants received the study's objectives and details on the initial page, ensuring informed consent. All students were assured that their information would remain confidential and that participation, including withdrawal, was entirely voluntary.

Results

This research analyzed 457 individuals, including 290 women (63.50%) and 167 men (35.50%). Participants' ages ranged from 18 to 42 years, with a mean age of 22.59 years and a standard deviation of 3.99 years. Out of 55 students, 12% were married and 88% were single. Most (84.20%) held a bachelor's degree, and 65.20% were enrolled at Isfahan University of Medical Sciences in the Faculty of Nursing and Midwifery [Table 1]. The findings presented in Table 2 indicate that the majority of students favored scrubs over white coats regarding various factors, including "appearance," "comfort," "a sense of professional identity and distinction from other health team members," "self-confidence," "infection control regulations," and "influence on the nursing image." The independent *t*-test results presented in Table 3 indicate that the average age of students selecting scrubs was significantly greater than that of those opting for the white coat ($f = 455$, $t = 2.87$, $p = 0.004$). The mean (SD) was

4.15. In addition, the average academic semester of students who chose scrubs was significantly higher than students who chose white coats ($f = 455$, $t = 2.97$, $p = 0.003$). The mean (SD) was 4/11. The analysis presented in Table 4 indicates that the Chi-square test revealed a significant association between education level and the selection of uniform type ($\chi^2 = 3.82$, $p < 0.05$). Specifically, students with higher educational attainment tend to favor scrub attire over white coats, particularly regarding comfort ($\chi^2 = 6.40$, $p = 0.04$), self-confidence ($\chi^2 = 7.75$, $p = 0.02$), and the influence on the nursing image ($\chi^2 = 9.19$, $p = 0.01$). The choice of uniform type was not significantly influenced by other factors such as gender, marital status, and educational background ($p > 0.05$). A key aspect of a uniform is its color. In this study, we gathered students' perspectives on uniform colors by analyzing the unique characteristics of various hospital units, including special units (CCU, ICU, dialysis, burn), emergency, pediatrics, neonatal, and general units. For this reason, a survey was carried out to assess the color of these sections. The findings indicate that based on frequency, 28% of students selected "navy blue" as the preferred color for nursing uniforms in general units. In special units, 31.90% opted for "blue." Additionally, 23%

of students favored "navy blue" for nursing uniforms in the emergency unit, while 45.10% chose "pink" for uniforms in the neonatal and pediatric unit.

Discussion

This research explored nursing students' views in Isfahan, Iran, on uniforms, finding that 70.70% preferred scrubs over white coats for their appearance. Pearce *et al.*^[19] (2014) found that 72% of registered nurses favor monochromatic scrubs, a finding that aligns with the results of our study; 68.10% of the participants in the current study selected scrubs as their preferred "comfortable" uniform. Desta *et al.*^[3] (2015) noted that scrub uniforms for nurses facilitate freedom of movement and operational ease, supporting the findings of the present research; 68.50% of nursing students in the current study felt that scrub uniforms are more suitable than white coats for establishing professional identity and distinguishing themselves from other healthcare team members. Albert *et al.*^[20] (2013) also highlighted the importance of scrub uniforms in differentiating nurses from other professionals; 65.20% of students in the current study felt more confident in scrub uniforms than in white coats. Shaw K and colleagues noted in 2010 that wearing a unique uniform enhances self-image, boosting self-confidence and improving nursing performance;^[21] 54% of students in the current study preferred scrubs over white coats for infection control. Jang *et al.*^[12] (2021) also noted that scrubs significantly reduce the risk of hospital-acquired infections. In addition, Palazzo *et al.*^[16] (2010) suggested that scrub uniforms, due to their short sleeves, may effectively address infection control issues within hospital settings. A notable 58.90% of students in the current study preferred the scrub uniform as a better representation of the "nursing image." However, Roohafza *et al.*^[10] (2009) found that the association between nurses and the white uniform remains strong, with the white coat still seen as the enduring symbol of the profession. Students' views on uniforms and their impact on the nursing profession have changed since Roohafza *et al.*'s^[10] study. Additionally, a 2018 study by Tam *et al.*^[22] found that half of patients rely on the color of nurses' uniforms for recognition. In their 2015 study, Mobaraki *et al.*^[15] indicated that the color of a nurse's uniform

Table 1: Frequency distribution of marital status, education level, and place of study of students

Variable	n(%)
Gender	
Male	167 (35.5%)
Female	290 (63.5%)
Marital status	
Married	55 (12%)
Single	402 (88%)
Level of education	
Bachelor	385 (84.2%)
Masters	52 (11.4%)
PhD	20 (4.4%)
Education place	
Isfahan University of Medical Sciences	298 (65.2%)
Isfahan Islamic Azad University	159 (34.8%)

Table 2: Frequency distribution of students' answers to questions related to the type of nursing uniform

Question	Answer	n(%)
Which uniform do you prefer in terms of "appearance"?	Scrub	323 (70.7%)
	White coat	134 (29.3%)
Which uniform do you prefer in terms of "comfort" for doing the job?	Scrub	357 (78.1%)
	White coat	100 (21.9%)
Which uniform do you consider more suitable from the point of view of "sense of professional identity and differentiation from other health team members"?	Scrub	313 (68.5%)
	White coat	144 (31.5%)
Which uniform makes you feel more "self-confidence" as a nurse?	Scrub	298 (65.2%)
	White coat	159 (34.8%)
Which uniform do you think is more appropriate in terms of compliance with "infection control regulations" rules?	Scrub	248 (54.3%)
	White coat	209 (45.7%)
Which uniform do you consider to be the most suitable as a reflection of the "influence on the nursing image" for people in society?	Scrub	269 (58.9%)
	White coat	188 (48.1%)

Table 3: The average age and semester of the students according to the answers to the questions related to the type of nursing uniform

Variable	Question*	Answer	Mean (SD)	Independent <i>t</i> -test		
				<i>t</i>	df	<i>p</i>
Age	1	Scrub	22.90 (4.25)	2.87	455	0.004
		White coat	21.85 (3.22)			
	2	Scrub	22.96 (4.24)	4.96	455	>0.001
		White coat	21.27 (2.56)			
	3	Scrub	22.90 (4.25)	2.73	455	0.007
		White coat	21.91 (3.29)			
	4	Scrub	22.98 (4.15)	2.87	455	0.004
		White coat	21.86 (3.59)			
	5	Scrub	22.73 (4.06)	0.79	455	0.43
		White coat	22.43 (3.92)			
	6	Scrub	23.07 (4.34)	3.24	455	0.001
		White coat	21.90 (3.35)			
Semester	1	Scrub	4.13 (1.99)	4.25	455	>0.001
		White coat	3.25 (2.05)			
	2	Scrub	4.10 (2.04)	4.48	455	>0.001
		White coat	3.08 (1.90)			
	3	Scrub	4.11 (2.03)	3.58	455	>0.001
		White coat	3.38 (2.01)			
	4	Scrub	4.19 (2.02)	4/56	455	>0.001
		White coat	3.29 (1.98)			
	5	Scrub	4.18 (2/08)	3.52	455	>0.001
		White coat	3.51 (1.95)			
	6	Scrub	4.11 (2.03)	2.97	455	0.003
		White coat	3.54 (2.04)			

*1. Which uniform do you prefer in terms of “appearance”?; 2. Which uniform do you prefer in terms of “comfort” for doing the job?; 3. Which uniform do you consider more suitable from the point of view of “sense of professional identity and differentiation from other health team members”?; 4. Which uniform makes you feel more “self-confidence” as a nurse?; 5. Which uniform do you think is more appropriate in terms of compliance with “infection control regulations” rules?; 6. Which uniform do you consider to be the most suitable as a reflection of the “influence on the nursing image” for people in society?

Table 4: Distribution of the frequency of answers to the questions related to the type of nursing uniform by students' education level

Question*	Education Level	n/%		Chi-square test		
		Scrub	White coat	χ^2	df	<i>p</i>
1	Bachelor	268 (69.6%)	117 (30.4%)	3.82	2	0.15
	Masters	37 (71.2%)	15 (28.8%)			
	PhD	18 (90%)	2 (10%)			
2	Bachelor	293 (76.1%)	92 (23.9%)	6.40	2	0.04
	Masters	45 (86.5%)	17 (13.5%)			
	PhD	19 (95%)	1 (5%)			
3	Bachelor	256 (66.5%)	129 (33.5%)	4.52	2	0.10
	Masters	41 (78.8%)	11 (21.2%)			
	PhD	16 (80%)	4 (20%)			
4	Bachelor	241 (62.6%)	144 (37.4%)	7.75	2	0.02
	Masters	40 (76.9%)	12 (23.1%)			
	PhD	17 (85%)	3 (15%)			
5	Bachelor	207 (53.8%)	178 (46.2%)	0.35	2	0.84
	Masters	29 (55.8%)	23 (44.2%)			
	PhD	12 (60%)	8 (40%)			
6	Bachelor	215 (55.8%)	170 (44.2%)	9.19	2	0.01
	Masters	39 (75%)	13 (25%)			
	PhD	15 (75%)	5 (25%)			

can influence the perceptions (positive and negative) that patients and their families hold about the nurse. Additionally, it can enhance nurses' self-confidence and foster a sense of peace and security for patients. In this study, the majority of students preferred dark colors for general and emergency units, blue for special units, and pink for neonatal and pediatric units. A study by Pakseresht *et al.*^[23] in 2019 indicated that colorful or patterned uniforms were linked to positive emotions such as happiness and cheerfulness, whereas white uniforms tended to evoke more negative feelings, including sadness. On the contrary, the white uniform is seen as a barrier to effective communication, with white coat syndrome and its effects on patients discussed in scientific literature.^[24] In 2009, Gudarzi *et al.*^[25] found that both children and parents preferred pink as the uniform color, supporting this study's findings. The design and color of nursing uniforms greatly impact professional identity. Nursing managers and policymakers should acknowledge the role of evidence-based practices, including potential modifications to uniforms, to enhance nurses' professional identity. One limitation of this research is the constrained study environment, as it was limited to Isfahan due to a lack of facilities and resources. Future research should aim to include a broader selection of cities.

Conclusion

The results of this study indicated that nursing students, representing the new and future generation in the field, favored the scrub uniform over the white coat across various aspects. Additionally, they emphasized the importance of differentiating uniform colors based on specific units, expressing that the use of white is not suitable for all settings.

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Conflicts of interest

Nothing to declare.

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