

RESEARCH

Open Access



The role of professional autonomy in a healthy work environment: a mixed-methods study on intensive care nurses

Duygu Akbaş Uysal¹ and Ebru Ekiz^{2*}

Abstract

Introduction Professional autonomy is a key element of a healthy work environment, influencing nurses' job satisfaction, decision-making participation, and patient care quality. This study examines the level of professional autonomy among intensive care nurses in Türkiye and explores the individual and institutional factors that shape it.

Methods A concurrent mixed-methods design was used. Quantitative data were collected online from 293 intensive care nurses using the *Attitude Towards Professional Autonomy Scale for Nurses*. Qualitative data were obtained through semi-structured interviews with 15 nurses selected from the same sample. Theoretical framework was based on Benner's Novice to Expert Model. Quantitative data were analyzed using statistical methods, and qualitative data were analyzed through thematic analysis. Findings were integrated accordingly.

Results Overall, nurses reported high levels of professional autonomy ($\bar{X}=72.29$, $SD=10.91$). Autonomy scores showed positive correlations with age, education, and professional experience. A negative relationship was found between intention to leave the job and autonomy perception. Qualitative analysis revealed three main themes: (1) nurses' definitions of autonomy and their expectations for the future, (2) the role of education and experience gained in healthy work environments, and (3) the influence of institutional factors and working conditions on autonomy.

Conclusions Professional autonomy in intensive care nursing is shaped by both personal attributes and systemic factors. Supporting healthy work environments through organizational policies is essential to strengthen nurses' autonomy and improve care quality.

Keywords Intensive care, Intensive care nursing, Mixed methods, Nursing practice, Perception of autonomy, Professional autonomy, Working conditions

*Correspondence:

Ebru Ekiz

ebru.kaya@gop.edu.tr

¹Izmir Kavram Vocational School, Izmir, Turkey

²Tokat Gaziosmanpaşa University, Tokat, Turkey



© The Author(s) 2025. **Open Access** This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

Introduction

The concept of autonomy, defined as the ability to make decisions and the freedom to act in accordance with one's professional knowledge base, holds a significant place in the nursing profession [1]. Kramer and colleagues conceptualize autonomy in nursing in three dimensions: clinical/practice, organizational, and job autonomy. When these three dimensions are adequately supported by institutional structures, they promote a work environment that positively influences critical workplace outcomes such as motivation, collaboration, and job satisfaction [2]. In addition, within the context of current literature and nursing practice, professional autonomy in intensive care nursing is described as an evolving feature characterized by the nurse's ability to make independent decisions based on their personal and professional competencies, to take an active role in patient care processes in line with professional and ethical standards, and to have their contributions recognized and respected by other healthcare professionals [3].

Beyond its clinical implications, professional autonomy is increasingly recognized as a cornerstone of healthy and sustainable work environments, especially in high-intensity settings such as intensive care units (ICUs) [4]. A qualitative metasynthesis study suggests that professional autonomy is a vital component of a healthy work environment, as nurses feel empowered through autonomous practice [5]. However, studies indicate that perceptions of professional autonomy may vary across different countries [6, 7]. For example, in a study conducted in the Philippines, Labrague found that nurses had a moderate level of autonomy [7]. Another study comparing American and Jordanian nurses showed that both groups had moderate autonomy levels, but American nurses held a more advantageous position in patient care [8]. The varying and often limited levels of autonomy among nurses are discussed in relation to various factors. Although interprofessional collaboration is essential, hierarchical structures and power imbalances between physicians and nurses may restrict nurses' freedom to make critical decisions regarding patient care [4, 9].

This issue becomes more pronounced in ICUs. Given the rapidly changing clinical conditions and urgent interventions required in such settings, the ability of nurses to make independent decisions is crucial to the effectiveness of patient care [10]. The autonomy of intensive care nurses is generally regarded as a factor with the potential to improve patient outcomes [11]. Research has shown that ICU nurses with greater autonomy can intervene more quickly and effectively in patient care, thereby accelerating recovery processes [12]. For instance, in a large-scale study conducted by Rao and colleagues, hospitals that provided higher levels of nurse autonomy had lower 30-day mortality rates for surgical patients [12].

Furthermore, a recent study examining the relationship between professional autonomy and the quality of nursing care among ICU nurses found a strong correlation between autonomy and patient satisfaction with care [13].

In this context, the American Association of Critical-Care Nurses (AACN) published standards in 2005 to promote healthy work environments. According to these standards, a healthy work environment is based on six essential elements: effective communication, true collaboration, effective decision-making, meaningful recognition, appropriate staffing, and authentic leadership [14]. Professional autonomy stands out as a component directly linked to and reinforcing these elements.

Nurses' perceived level of autonomy is a significant indicator in evaluating whether a work environment is healthy or unhealthy [15].

Although there are numerous qualitative and quantitative studies on professional autonomy in the literature, only a limited number have used mixed-methods approaches to explore this concept in the context of healthy work environments [6, 9, 16].

This study aims to examine the levels of professional autonomy among intensive care nurses, the factors affecting it, and its relationship with a healthy work environment within the framework of Benner's Novice to Expert Model.

Conceptual framework

This study examines nurses' perceptions of professional autonomy and its relationship with education and experience through the lens of Benner's Novice to Expert Model. Developed by Benner in 1982, the model posits that as nurses gain clinical experience, their level of expertise and consequently, their autonomy increases [17, 18]. The model consists of five stages. In the first stage, novice nurses strictly adhere to rules and possess very limited autonomy. Although advanced beginners have some clinical experience, they still require support in decision-making processes. Competent nurses enhance their clinical decision-making abilities and assume greater responsibilities. At the proficient level, nurses adopt a holistic view of patient care and can make more independent decisions. In the final stage, expert nurses act intuitively, achieve high levels of autonomy, and maximize their clinical decision-making capabilities [17, 18].

During qualitative data collection, nurses' levels of professional development and perceptions of autonomy were explored in depth in accordance with the stages of the model. The five stages of the model served as a foundational guide in the development of the qualitative interview form; the questions presented to participants were structured to reflect each stage of Benner's model,

thereby enabling a comprehensive understanding of nurses' professional experiences.

Although previous literature has highlighted the multidimensional nature of autonomy in intensive care nursing, the concept has not been approached from a theoretical perspective. The Benner Model provides an ideal theoretical framework for this study by systematically examining the relationship between professional experience, expertise, and autonomy. This approach aims to fill a gap in the literature by making the multidimensional nature of professional autonomy more visible [3].

Research questions

- What is the level of professional autonomy among intensive care nurses?
- How does the level of professional autonomy among intensive care nurses vary according to their personal and professional characteristics?
- How is the level of professional autonomy among intensive care nurses situated in the context of healthy work environment components?
- How do intensive care nurses perceive and experience professional autonomy within the context of a healthy work environment?

Method

Design

This study was designed to examine the effects of healthy work environment components-such as organizational culture, leadership support, and professional development-on nurses' perceptions of professional autonomy. A mixed-methods concurrent design was employed to comprehensively assess the professional autonomy levels of intensive care nurses. In this design, qualitative and quantitative data were collected simultaneously but analyzed separately and later compared and integrated during the interpretation phase. The mixed-methods study, conducted on the basis of complementarity, enabled the elaboration and presentation of the findings. In complementary mixed-methods research, both qualitative and quantitative data provide an opportunity to capture overlapping areas as well as to enrich and detail the phenomenon from different perspectives [19, 20]. The study is reported in accordance with the guidelines of the Mixed Methods Appraisal Tool [21].

Participants and sampling

To determine the sample size, an a priori power analysis was conducted using G*Power 3.1 software. Based on a 95% confidence level ($\alpha = 0.05$), 95% power ($1-\beta = 0.95$), and a medium effect size ($f^2=0.15$), a minimum of 184 participants was required. However, in order to increase statistical power and ensure a more comprehensive

analysis, data were collected from a total of 293 intensive care nurses. For the qualitative component of the study, a nested sampling approach was used since participants were selected from among those who had taken part in the quantitative phase [22].

Inclusion and exclusion criteria

Nurses who were actively working in intensive care units in Türkiye between November 15, 2024, and February 15, 2025, were included in the study. Nurses working outside of intensive care, those without clinical experience, and those who had been working in ICUs for less than six months were excluded from the study.

Measures

Demographic information

A total of 9 items were developed based on the literature to assess nurses' demographic and professional characteristics such as age, years of experience, educational background, and intention to leave the profession or institution [23].

Attitude towards professional autonomy scale for nurses (APASN)

Developed by Asakura et al. [24], this scale measures nurses' attitudes toward professional autonomy and was validated for Turkish by Atasoy and Baykara [23]. The 18-item scale uses a 5-point Likert scale ranging from "Strongly Disagree (1)" to "Strongly Agree (5)". It includes three sub-dimensions:

- Control over working conditions.
- Independence in job-related activities.
- Autonomous clinical judgment.

Total scores range from 18 to 90, with higher scores indicating higher levels of perceived autonomy. The Cronbach's alpha for the Turkish version was reported as $\alpha = 0.847$ [23]. In this study, the scale demonstrated high internal consistency (Cronbach's $\alpha = 0.92$). Internal consistency for each sub-dimension was also acceptable (Control over Working Conditions $\alpha = 0.88$; Independence in Job-Related Activities $\alpha = 0.80$; Autonomous Clinical Judgment $\alpha = 0.83$).

Qualitative interview guide

The interview guide consisted of open-ended questions designed to explore how nurses define professional autonomy, how their work environment influences their autonomous practices, and what challenges or facilitators they face in exercising autonomy in the ICU. The questions also addressed the perceived impact of autonomy on care quality, job satisfaction, and intention to remain in the profession. The format allowed for follow-up

Table 1 Qualitative interview questions

1. What does the concept of professional autonomy mean to you, and how do you relate it to the intensive care environment in which you work?
2. How does your experience in intensive care affect your level of professional autonomy within a healthy work environment?
3. How do you evaluate the impact of your educational background on your professional autonomy and your position within the work environment?
4. How do the culture of your institution and the characteristics of your work environment shape your feelings of professional autonomy?
5. What are your thoughts on the effects of job satisfaction on professional autonomy in the context of a healthy work environment?
6. How do the support and collaboration you receive within the team influence your professional autonomy and the healthiness of your work environment?
7. How do you evaluate the effects of management policies and leadership approaches on professional autonomy and a healthy work environment?
8. What are the challenges that limit your professional autonomy, and how do these challenges affect the healthiness of your work environment?
9. Do the problems you experience regarding professional autonomy reflect on your nursing care and the overall functioning of your work environment?
How do you think your level of professional autonomy and the healthiness of your work environment will change in the future

prompts, encouraging participants to elaborate on their experiences. This flexible structure enabled the collection of rich, contextual data that complemented the quantitative findings.

Data collection

Quantitative data were collected via an online survey form prepared using Google Forms. The survey link was distributed to nurses via email and online messaging applications. Announcements were made through social media to recruit participants, and emails were sent to members of the Turkish Society of Intensive Care Nurses. The survey link was also shared via the researchers' personal social media accounts (e.g., Facebook, Twitter, Instagram) and WhatsApp groups. Participants were asked to share the link with other ICU nurses in their networks. Informed consent was provided on the first page of the survey. Those who agreed to participate were directed to the questionnaire. The survey took approximately 10 min to complete. Quantitative data were collected using the demographic questionnaire and the Attitude Towards Professional Autonomy Scale for Nurses. In the final section of the questionnaire, participants were asked if they would be willing to take part in the qualitative interviews. Contact information was requested from those who agreed. Using a purposive sampling strategy, qualitative interviews were conducted with these individuals until data saturation was reached. The semi-structured interview form was developed through expert consultation and a review of the relevant literature (presented in Table 1; Fig. 1).

Data analysis

Quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS) Version 21.

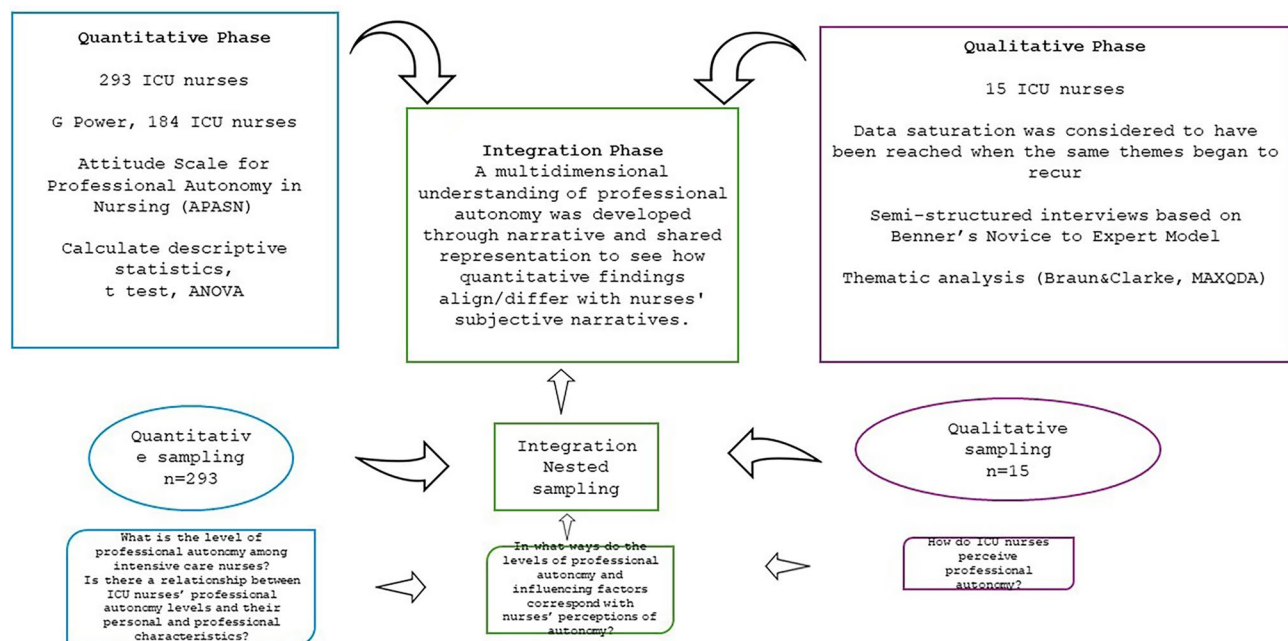


Fig. 1 Overview of the concurrent mixed methods design: This figure illustrates the concurrent mixed methods design used in the study, presenting the quantitative, qualitative, and integration phases, along with the sampling procedures and analytical approaches (Fig.)

Descriptive statistics such as mean, standard deviation, percentages, and frequencies were calculated. Normality tests were conducted; parametric tests (t-test, ANOVA) were applied to normally distributed data. Post hoc tests were used to determine the source of differences between groups. Cronbach's alpha coefficient was calculated to assess internal consistency. Internal validity was ensured through descriptive statistics, while external validity was achieved through power analysis. Statistical significance was set at $p < 0.05$.

Qualitative data were analyzed using MAXQDA 2024. As a first step, all interviews were transcribed verbatim, and thematic analysis was conducted based on the steps outlined by Braun and Clarke [25]. An inductive approach was adopted in analyzing the data imported into MAXQDA. The transcripts were read multiple times, and similar codes were grouped under themes and labeled accordingly. Main themes were presented in a clear and accessible manner. Coding and theme development were performed independently by the researchers and refined through consensus. Coding consistency was regularly reviewed. To ensure the validity and reliability of qualitative findings, results were compared and interpreted in relation to previous research. Negative or discrepant information was included to support validity. Triangulation was achieved by involving both researchers in the data analysis process. Member checking was conducted by sharing the themes with participants and collecting their feedback [26]. In line with Onwuegbuzie and Johnson's [27] view that quantitative research often seeks an external perspective and qualitative research an insider's perspective-while mixed-methods research aims to balance both-the researchers' firsthand ICU nursing experience contributed to internal credibility, while their role as researchers ensured external validity. Thus, trustworthiness in this mixed-methods study was established through "inside-outside legitimation." The combination of strong validity and reliability in both quantitative and qualitative components supports multiple validities legitimation, contributing to more robust meta-inferences [27].

Ethical considerations

Ethical approval for the study was obtained from the Ethics Committee of İzmir Bakırçay University (Decision No: 1848, Date: 14.11.2024).

Table 2 APASN total and subscale score

	M (SD)
APASN Total score	72.29 (10.91)
Autonomous clinical judgment	27.81 (4.64)
Control over operating conditions	24.75 (3.85)
Job-related independence	19.73 (3.91)

Results

Quantitative measurement of professional autonomy

Participants scored near the upper limits on the total APASN score ($M = 72.29$, $SD = 10.91$) and its subdimensions, indicating high levels of professional autonomy (Table 2).

Table 3 presents the distribution of professional autonomy scores according to the personal and professional characteristics of ICU nurses. According to the analysis of variance (ANOVA), significant differences were observed in the total APASN and its subdimensions across different age groups ($p < 0.05$). Post-hoc comparisons revealed that differences in the total APASN score, autonomous clinical judgment, and job-related independence were primarily between the 27–35 and 36–44 age groups. In the control over working conditions subdimension, the 27–35 age group reported significantly higher scores than the 45–54 age group.

In terms of education level, significant differences were found in the total APASN score and in the subdimensions of autonomous clinical judgment and job-related independence ($p < 0.001$). Post-hoc analyses using the LSD test indicated that the scores of nurses with bachelor's and postgraduate degrees were significantly higher than those of vocational high school graduates.

With increased work experience, significant differences were noted in the subdimensions of autonomous clinical judgment ($p = 0.015$) and job-related independence ($p = 0.026$). Nurses with 6–10 years of experience scored significantly higher than those with 6 months to 5 years of experience ($p < 0.05$).

Although no statistically significant differences were observed in the total APASN and subdimension scores based on ICU type, nurses working in surgical ICUs reported higher scores in job-related independence ($p = 0.012$).

Regarding job satisfaction, nurses who were dissatisfied with their profession had significantly higher scores in the total APASN, autonomous clinical judgment, and control over working conditions ($p < 0.05$). Similarly, nurses considering leaving the profession or their current institution also showed higher scores across all APASN dimensions ($p < 0.05$).

Qualitative findings

The qualitative phase of the study was conducted with 15 nurses, including 10 females and 5 males, aged between 26 and 42 years (Table 4). Three main themes were identified. Detailed information on the themes and subthemes is presented in Table 5. An evaluation of these themes based on Benner's model is also provided in Table 5.

Table 3 Effects of demographic and professional characteristics on APASN total and subscale scores (t/F values)

Characteristics	Category	n(%)	APASN Total score M (SD)	Autonomous clinical judgment M (SD)	Control over oper- ating conditions M (SD)	Job-related independence M (SD)
Gender	Female	218 (74.4)	72.15 (11.21)	27.78 (4.7)	24.77 (3.89)	19.61 (4.01)
	Male	75 (25.6)	72.69 (10.05)	27.89 (4.48)	24.72 (3.75)	20.08 (3.6)
t (p)			t=-0.374 (p=0.71)	t=-0.19 (p=0.85)	t=0.089 (p=0.93)	t=-0.906 (p=0.37)
Age	18-26 ^a	50 (17.1)	66.8 (12.34)	25.54 (4.9)	24.14 (4.03)	17.12 (4.35)
	27-35 ^b	143 (48.8)	75 (10.17)	28.67 (4.5)	25.48 (3.51)	20.85 (3.77)
	36-44 ^c	64 (21.8)	72.14 (9.61)	27.83 (4.24)	24.55 (3.77)	19.77 (3.11)
	45-54 ^d	36 (12.3)	69.39 (10.56)	27.47 (4.58)	23.08 (4.46)	18.83 (3.26)
F (p)			F=8.65 (p<0.001) ¹ b>a, b>d, c>a	F=5.992 (p=0.001) ¹ b>a, c>a	F=4.613 (p=0.004) ¹ b>d	F=13.453 (p<0.001) ² b>a, c>a, b>d
Marital status	Single	124 (42.3)	70.98 (11.54)	27.23 (4.81)	24.56 (3.9)	19.19 (4.22)
	Married	169 (57.7)	73.25 (10.35)	28.23 (4.48)	24.9 (3.82)	20.12 (3.64)
t (p)			t=-1.769 (p=0.08)	t=-1.84 (p=0.07)	t=-0.752 (p=0.45)	t=-1.965 (p=0.05)
Educational level	Health vocational high school ^a	65 (22.2)	66.58 (12.08)	25.25 (5.1)	24.03 (4.47)	17.31 (4.07)
	Bachelor's degree ^b	170 (58)	73.53 (10.21)	28.31 (4.29)	24.9 (3.67)	20.32 (3.68)
	Postgraduate ^c	58 (19.8)	75.03 (9.33)	29.21 (4.04)	25.14 (3.58)	20.69 (3.34)
F (p)			F=12.783 (p<0.001) ³ c>a, b>a	F=14.812(p<0.001) ³ c>a, b>a	F=1.562 (p=0.211)	F=18.043(p<0.001) ³ c>a, b>a
Experience	6month-5year ^a	127 (43.3)	70.7 (11.62)	26.85 (4.85)	24.8 (3.82)	19.05 (4.31)
	6-10year ^b	91 (31.1)	74.36 (10.28)	28.54 (4.39)	25.21 (3.7)	20.62 (3.56)
	11-15year ^c	60 (20.5)	72.07 (9.99)	28.28 (4.35)	24.17 (4.02)	19.62 (3.39)
	16years or more ^d	15 (5.1)	74 (10.6)	29.53 (4.24)	23.93 (4.33)	20.53 (3.48)
F (p)			F=2.151 (p=0.094)	F=3.549 (p=0.015) ² b>a	F=1.123 (p=0.340)	F=3.137 (p=0.026) ² b>a
Department	Internal ICU	181 (61.8)	71.37 (11.19)	27.45 (4.64)	24.62 (3.92)	19.3 (4.15)
	Surgical ICU	112 (38.2)	73.77 (10.3)	28.38 (4.59)	24.97 (3.75)	20.42 (3.39)
t (p)			t=-1.836 (p=0.067)	t=-1.658 (p=0.098)	t=-0.765 (p=0.445)	t=-2.519 (p=0.012)
Nursing Satisfaction	Yes	212 (72.4)	71.11 (11.27)	27.38 (4.78)	24.25 (3.92)	19.48 (4.07)
	No	81 (27.6)	75.36 (9.27)	28.91 (4.05)	26.07 (3.34)	20.37 (3.41)
t (p)			t=-3.021 (p=0.003)	t=-2.747 (p=0.007)	t=-3.703 (p<0.001)	t=-1.888 (p=0.061)
Intention to Leave the Nursing Profession	Yes	84 (28.7)	76.18 (8.86)	29.25 (3.91)	26.11 (3.04)	20.82 (3.35)
	No	209 (71.3)	70.72 (11.27)	27.22 (4.79)	24.21 (4.01)	19.29 (4.04)
t (p)			t=4.392 (p<0.001)	t=3.752 (p<0.001)	t=4.386 p<0.001	t=3.335 (p=0.001)
Intention to Leave the Institution	Yes	103 (35.2)	76.74 (9.46)	29.56 (4.05)	26.22 (3.2)	20.95 (3.71)
	No	190 (64.8)	69.87 (10.9)	26.85 (4.67)	23.96 (3.95)	19.06 (3.87)
t (p)			t=5.385 (p<0.001)	t=4.966 (p<0.001)	t=5.321 (p<0.001)	t=4.047 (p<0.001)

¹: one way ANOVA, Bonferroni ²: one way Tamhane's T2 ³: one way ANOVA, LSD

Theme 1. Understanding of professional autonomy and future expectations

Participants reported differing perceptions of professional autonomy. While some nurses indicated a certain level of independence in clinical decision-making, the majority stated that the physician-centered and hierarchical structure of the healthcare system significantly restricted their autonomy. Professional autonomy was described as a fundamental component of a healthy work environment and perceived to be influenced not only by

individual competencies but also by organizational culture and structural dynamics.

Nurses cited negative workplace experiences-such as unsupportive management policies, gender role expectations, mobbing, and lack of recognition-as barriers that suppressed autonomy, with adverse effects on motivation and institutional commitment. Despite these challenges, many expressed hope that the nursing profession would evolve toward greater independence, emphasizing that such a transformation would require both systemic and cultural shifts.

Table 4 Sociodemographic characteristics of nurses

Participant	Age	Gender	Marital status	Educational level	Department	Intensive care experience
P1	32	Female	Married	Bachelor's degree	Internal ICU	10 years
P2	32	Male	Single	Master's degree	Internal ICU	6 years
P3	29	Female	Married	Master's degree	Internal ICU	4 years
P4	26	Female	Married	Master's degree	Internal ICU	3.5 years
P5	32	Male	Married	Bachelor's degree	Surgical ICU	6 years
P6	32	Male	Married	Bachelor's degree	Internal ICU	5 years
P7	29	Female	Single	Bachelor's degree	Internal ICU	5 years
P8	28	Female	Single	Master's degree	Surgical ICU	5 years
P9	32	Female	Single	Bachelor's degree	Internal ICU	10 years
P10	31	Male	Single	Bachelor's degree	Internal ICU	9 years
P11	40	Female	Married	Bachelor's degree	Surgical ICU	15 years
P12	37	Male	Single	Bachelor's degree	Surgical ICU	14 years
P13	42	Female	Married	High school graduate	Surgical ICU	13 years
P14	28	Female	Single	Bachelor's degree	Internal ICU	5 years
P15	31	male	Single	Bachelor's degree	Internal ICU	10 years

Table 5 Thematic structure of the qualitative analysis: Themes, sub-themes, codes, and sub-codes

Thema	Sub-theme	Codes	Sub-codes
Theme 1: Perception of Professional Autonomy, Future Expectations, and Limiting Factors Benner's Levels of Expertise Novice Advanced Beginner	Perception of Professional Autonomy	Code: The Concept of Professional Autonomy	Autonomy, ability to make decisions, independence, taking responsibility
	Hope and Disappointment Regarding Professional Autonomy	Code: Hope for Professional Autonomy	Hope for increased autonomy, belief in future change, professional dissatisfaction, perceived lack of appreciation, thoughts of leaving the profession
	Systemic and Managerial Barriers	Code: Effects of the System and Management	Mobbing, limitations by management policies, belief that system will not change, lack of professional adaptation, undervaluation of nursing identity
Theme 2: The Contribution of Education and Experience in a Healthy Work Environment to Professional Autonomy Benner's Levels of Expertise Competent Proficient	Education and Training Requirements	Code: Educational Requirements	Educational background and professional autonomy, Access to up-to-date knowledge, The necessity of education, Graduates of the pandemic period, Inadequacy of clinical internships, The vision provided by education
	Bachelor's Degree and Specialization	Code: Undergraduate Education and Specialization	The necessity of undergraduate education, The quality of undergraduate institutions, The establishment of areas of specialization, The lack of autonomy in education
	Intensive Care Experience and Professional Autonomy	Code: Intensive Care Experience	Holistic care, quality of care, unsupported profession of nursing, confidence gained through experience
Theme 3: Organisational Factors and Working Conditions Benner's Levels of Expertise Proficient Expert	Working Conditions and Team Communication	Code: Working Conditions	Long and exhausting work pace, intra-team conflict, resistance to change, multidisciplinary collaboration
	Organizational Culture and Work Environment	Code: Organizational Culture	Lack of organizational culture, The perspective shaped by the organizational culture of the institution, Pressures imposed by the institutional structure
	Perception of Professional Hierarchy	Code: Professional Hierarchy	Perception of professional hierarchy, Perception of nurses as intermediate staff, Crossing interprofessional boundaries / performing tasks assigned to physicians, Acting as a buffer professional in the absence of a physician

Within the framework of Benner's Novice to Expert model, this theme predominantly reflects the perspectives of nurses at the "advanced beginner" and "competent" stages. These nurses demonstrate a better understanding of clinical situations and are increasingly able to plan and interpret complex scenarios. As they reach the competent level, their decision-making processes shift from rule-based approaches to more situational reasoning, enhancing their confidence and

broadening their clinical perspective. However, participants indicated that they lacked sufficient experience and structural support to consistently implement autonomy in practice, suggesting that their professional identity and self-efficacy were still in development.

Participant excerpts include

As an ICU nurse, detecting changes in a patient's routine monitoring and independently reporting them to the physician is one of our autonomous practices. (P5)

When I can make decisions on my own, without constantly seeking approval, I feel like I'm truly doing my job. This, in my opinion, is an essential part of a healthy work environment. (P13)

The biggest barrier to autonomy in nursing is working under too much authority. Unfortunately, doctors do not see us as professionals and maintain a rigid chain of command. (P14)

We're often viewed as the passive group. The fact that most nurses are women exacerbates this and quickly renders us passive. (P15)

Theme 2. The contribution of education and experience to professional autonomy in a healthy work environment

Participants emphasized that educational level and clinical experience were critical determinants in the development of professional autonomy. Access to up-to-date knowledge, gaining adequate clinical experience, and the ability to make independent decisions based on this knowledge were seen as essential in fostering autonomy in a healthy work environment.

However, many nurses noted that undergraduate education fell short in preparing them for autonomous practice. Participants mentioned short internship durations and graduating unprepared during the COVID-19 pandemic. The lack of specialization in nursing education and the absence of institutional support for professional development were identified as barriers to achieving autonomy.

These findings align with Benner's Novice to Expert model, which posits that specialization in nursing develops through clinical experience and enhances clinical judgment and decision-making skills. Participants with ICU experience indicated that longer tenure helped them handle more complex patient populations and strengthen their professional autonomy. Nonetheless, nurses reported that their holistic care efforts were insufficiently supported by the system and that the nursing profession was undervalued. This suggests that professional growth and specialization require not only personal effort but also organizational support.

Participant excerpts include

I believe specialization through postgraduate education could be the most significant source of autonomy. Without specialization, nurses remain dependent on administrative decisions. (P9)

The best place is the faculty. Had I not gone to university, I would have had a much weaker understanding of the scientific and professional aspects of nursing. (P8)

The more years you spend in the profession, the more patient populations you see, and the better you understand how to respond to different cases. That's why autonomy grows with experience. (P11)

Theme 3. Institutional factors and working conditions

Long and exhausting shifts were reported to lead to burnout, weakening nurses' capacity for independent decision-making and diminishing both personal and professional self-efficacy. Moreover, the absence of a clearly defined institutional culture was said to render nursing values invisible, while physician-centered management approaches were perceived to limit nurses' autonomy.

Lack of interdisciplinary collaboration and workplace conflict hindered the development of cooperative environments where autonomy could be effectively exercised. In institutions where professional hierarchies persisted, nurses' ability to make independent decisions based on their knowledge and experience was frequently disrupted.

These findings highlight the need to strengthen not only the physical aspects of the work environment but also its managerial and cultural dimensions. Institutions aiming to enhance professional autonomy must revise their policies to support nurses' active involvement in decision-making processes.

Participant excerpts include

Working in the ICU for many years is exhausting... so you don't always have the same energy to make healthy decisions or to defend your rights. (P7)

Nurse managers often prioritize physicians and their demands over nursing practice, which means they're not truly nurse leaders. (P1)

Mixed methods interpretations

Quantitative findings revealed that nurses generally scored high on professional autonomy. However, the

qualitative data delved deeper into these scores, uncovering the underlying factors that influence autonomy. Educational level and clinical experience emerged as key determinants in the development of professional autonomy.

The qualitative results further highlighted that heavy workloads, lack of managerial support, and institutional pressures negatively affected nurses' job satisfaction and shaped their perceptions of autonomy. These findings emphasize that the effective exercise of professional autonomy is not solely dependent on individual attributes, but also on the presence of healthy, supportive, and safe working conditions.

The use of mixed methods enabled a more comprehensive understanding of both the structural and emotional dimensions of autonomy. It allowed for the integration of objective data with in-depth personal experiences, offering a richer and more nuanced interpretation of how autonomy is perceived and practiced in intensive care settings.

Discussion

Our study sheds light on the gap in the literature and the institutional barriers that previous studies have not sufficiently explained, by demonstrating that nurses' perceptions of professional autonomy are associated with demographic factors and work experience. Most of the existing studies in the literature summarize the levels of professional autonomy in nursing [16], but there is a lack of systematic analysis regarding the impact of demographic factors, educational level, experience, and institutional barriers on professional autonomy [16, 28]. In this context, our study positions professional autonomy not only as an individual competence but also as a systemic indicator of workplace health and sustainability.

The findings show that demographic factors such as age, educational background, and length of experience have a significant impact on professional autonomy. An analysis across age groups revealed that professional autonomy levels tend to increase with age. This is consistent with other studies conducted in various nursing specialties and using different research designs, which also emphasize the role of age in enhancing professional autonomy [1]. For instance, in a study by Noh et al. [29], higher clinical judgment competence among oncology nurses was found to be associated with older age and greater clinical experience. Similarly, a hybrid study conducted by Taleghani et al. [4] demonstrated a direct relationship between nurses' age and their level of professional autonomy. These findings suggest that the maturity gained with age may contribute to increased autonomy in professional decision-making. Furthermore, age may be an important factor supporting professional autonomy due to its influence on clinical experience and nursing

skills [16]. In line with this, our study also observed that perceptions of professional autonomy strengthened as the length of experience increased. This indicates that the experiences of nurses working in high-risk settings such as intensive care units boost their confidence and support their professional independence.

However, differences arising from the early start of the profession due to variations in educational backgrounds may affect levels of professional autonomy. A study conducted by the Turkish Nurses Association reported that in 32 countries, most nurses graduated from vocational high schools, entered the profession at an early age, and many experienced burnout or permanent disability, ultimately leaving the profession at a young age [30]. These findings suggest that nurses' perceptions of autonomy and their sense of professional independence are not only shaped by clinical experience but also closely linked to the quality of their educational background, working conditions, and levels of job satisfaction.

Moreover, being a vocational high school graduate and starting the profession at an early age may expose nurses to greater challenges. This can lead to increased burnout and negatively affect their professional development. Findings indicating the relationship between education, experience, and professional autonomy highlight the need to strengthen nursing education. In our study, nurses were found to hold various levels of education, including vocational high school, associate, and bachelor's degrees, reflecting the diversity of nursing education in Türkiye [31]. Participants particularly noted the limited number of nurses with bachelor's degrees and that many newly appointed nurses during the pandemic were inadequately prepared for clinical practice. Today in Türkiye, undergraduate education has become the standard for basic nursing education, and graduates of vocational high schools are now given the title of assistant nurse [31]. However, in some countries, nursing education begins at the bachelor's level and offers more specialized postgraduate programs [32]. The variation in nursing education in Türkiye may negatively affect professionalization and autonomy in nursing and may reinforce the perception of nurses as auxiliary staff.

In our study, a significant relationship was also identified between nurses' level of education and their perception of autonomy. Nurses who had obtained postgraduate education reported higher autonomy scores. This finding aligns with Benner's Novice to Expert Model, which suggests that as nurses progress in expertise, their professional autonomy increases. In our study, nurses with higher levels of education appeared to be closer to the "proficient," "expert," or "master" levels and thus reported higher perceptions of autonomy. This supports the notion that educational attainment plays a critical role in professional development and highlights the need for

improvements in nursing education to foster autonomy. Similarly, the literature indicates that as nurses' education level increases, so does their autonomy, and a strong relationship exists between nursing education and both individual and professional autonomy [33, 34]. Furthermore, it has been emphasized that nurses must be equipped with the knowledge and skills required to make independent clinical decisions. Therefore, enhancing educational programs, improving working conditions, and providing access to psychological support are crucial for promoting both professional development and autonomy. In high-stress environments such as intensive care units, strategies and training programs that support autonomy can strengthen nurses' professional independence and improve their overall quality of work life [35].

Autonomy is considered one of the fundamental indicators of professionalism [16, 36]. However, autonomy remains one of the most debated concepts in the professionalization of nursing. Factors that hinder the development of professional autonomy among nurses include the dominant role of physicians in healthcare, the fact that nursing is largely practiced by women, the perception of nurses as obedient and compliant individuals, the assignment of "mother" roles to nurses and "father" roles to physicians within hospital settings, and ongoing debates about whether nursing is a profession [36, 37]. The qualitative data from our study similarly revealed these factors as significant constraints on nurses' autonomy. Participants highlighted that structural rigidity, lack of appreciation, workplace bullying, and administrative policies limited their professional autonomy. These findings indicate that essential standards of a healthy work environment, as defined by the American Nurses Association (ANA)-including open communication, organizational support, and effective leadership-are not adequately implemented. Particularly, management policies that suppress the voices of nurses act as a significant barrier to the development of autonomy.

In the literature, professional satisfaction is also identified as an important factor in the development of autonomy [38]. Nurses tend to experience greater job satisfaction and feel more autonomous when they work in environments where they are allowed to participate in decision-making and assume responsibility [39, 40]. Particularly, nurses in managerial positions, intensive care units, or specialty practice areas often take on more responsibility, which strengthens their sense of professional autonomy [39]. However, in our study, despite a high number of nurses reporting professional satisfaction, those with lower satisfaction levels were found to have higher autonomy scores.

This finding suggests that the relationship between job satisfaction and autonomy does not always progress in parallel. The fact that nurses with lower professional

satisfaction scored higher in autonomy implies that the dynamics between these two variables may be more complex and warrant further investigation. Especially within healthcare systems, identifying the factors that enhance nurses' participation in independent decision-making and increase their professional satisfaction is a critical issue for the advancement of nursing as a profession.

Our study shows that nurses generally have a high perception of professional autonomy, and that this perception is associated with age, education, and experience. Institutional and managerial factors that limit autonomy were identified, and the relationship between job satisfaction and autonomy was found not to always progress in parallel. The findings highlight the importance of not only educational and managerial practices that support professional independence but also the need to establish healthy working environments. Future studies should further investigate how experience and educational level influence autonomy, and explore the role of organizational policies in creating and maintaining healthy work environments.

Limitation

The sample size of the quantitative phase may limit the generalizability of the findings. Since the qualitative sample was based on voluntary participation, it is possible that nurses who were more sensitive to the concept of autonomy or more willing to express dissatisfaction with their working conditions were overrepresented in the results. The interpretation of qualitative data involves the subjective evaluations of researchers, which carries the risk that different researchers might derive different interpretations from the same data. As the integration of quantitative and qualitative findings also relies on researchers' judgments, the potential for bias may have increased. Finally, because the qualitative findings are context-specific, their direct transferability to other institutions and cultural settings may be limited.

Conclusion

The findings of this study indicate that nurses' perceptions of professional autonomy vary according to factors such as age, educational level, and length of experience; however, institutional factors may significantly constrain these perceptions. Strengthening nursing education and improving working conditions may help enhance levels of professional autonomy. In this context, reinforcing nursing education at undergraduate and postgraduate levels, encouraging experienced nurses to take on mentoring roles, and structuring managerial policies to support autonomy emerge as key areas for promoting nurses' professional development and independence. Furthermore, healthcare institutions should be restructured to enable nurses to make independent decisions, thereby fostering

professional autonomy. Future research should explore strategies to enhance nurses' perceptions and experiences of autonomy in greater depth.

Abbreviations

ICU	Intensive care unit
AACN	Association of Critical-Care Nurses
APASN	Attitude towards professional autonomy scale for nurses

Acknowledgements

We would like to thank the intensive care nurses for their participation and support during the research process.

Author contributions

Study conception, study design, Data collection and Drafting of the article: DAU, EE; Data analysis and interpretation: DAU; Critical review of the manuscript: DAU, EE. All the authors have carefully reviewed the article and approved the final draft.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Data availability

The data collected from the nurses during this study contain personal information and are therefore not publicly available to protect participant confidentiality. However, anonymized data may be made available from the corresponding author upon reasonable request.

Declarations

Ethics approval and consent to participate

For the study, İzmir Bakırçay University Ethics Committee permission was obtained (Decision No: 1848, Date: 14.11.2024). "Questionnaire use permission" was obtained via e-mail from the authors who adapted the questionnaire into Turkish. The questionnaires were distributed to the participants via e-mail and Google Forms. In addition, all participants were informed about the study, and written informed consent was obtained from nurses who agreed to participate. This study was conducted in accordance with the Declaration of Helsinki.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Received: 12 August 2025 / Accepted: 20 October 2025

Published online: 11 November 2025

References

1. Rouhi-Balasi L, Elahi N, Ebadi A, Jahani S, Hazrati M. Professional autonomy of nurses: a qualitative meta-synthesis study. *Iran J Nurs Midwifery Res.* 2020;25(4):273–81. https://doi.org/10.4103/ijnmr.IJNMR_213_19.
2. Kramer M, Maguire P, Schmalenberg CE. Excellence through evidence: the what, when, and where of clinical autonomy. *J Nurs Adm.* 2006;36(10):479–91. <https://doi.org/10.1097/00005110-200610000-00008>.
3. Okpaluba F, Liu F. Analyzing autonomy in critical care nursing: unveiling the distinctive aspects. *Nurs Forum.* 2025;2025:3396999. <https://doi.org/10.1155/nuf/3396999>.
4. Taleghani F, Dehbozorgi R, Babashahi M, Monemian S, Masoumi M. Analysis of the concept of nurses' autonomy in intensive care units: a hybrid model. *Investig Educ Enferm.* 2023;41(2):e17. <https://doi.org/10.17533/udea.iee.v41n2e17>.
5. Mabona JF, van Rooyen D, Ten Ham-Baloyi W. Best practice recommendations for healthy work environments for nurses: an integrative literature review. *Health SA Gesondheid.* 2022;27:1788. <https://doi.org/10.4102/hsag.v27i0.1788>.
6. Oshodi TO, Bruneau B, Crockett R, et al. Registered nurses' perceptions and experiences of autonomy: a descriptive phenomenological study. *BMC Nurs.* 2019;18:51. <https://doi.org/10.1186/s12912-019-0378-3>.
7. Labrague LJ, McEnroe-Petitte DM, Tsaras K. Predictors and outcomes of nurse professional autonomy: a cross-sectional study. *Int J Nurs Pract.* 2019;25(1):e12711. <https://doi.org/10.1111/ijn.12711>.
8. Hamaideh S, Mrayyan M, Mudallal R, Ammouri A, Khraisat O, Al-Nami O. Nurses' autonomy: comparative study between American and Jordanian registered nurses. *Jordan Med J.* 2009;43(4):308–15.
9. Parizad N, Lopez V, Jasemi M, Gharaaghaji Asl R, Taylor A, Taghinejad R. Job stress and its relationship with nurses' autonomy and nurse–physician collaboration in intensive care unit. *J Nurs Manag.* 2021;29(7):2084–91. <https://doi.org/10.1111/jonm.13343>.
10. Ito Y, Oe R, Sakai S, Fujiwara Y, Kishimoto H. Intensive care unit nurses' professional autonomy: a scoping review. *Cureus.* 2024;16(3):e57350. <https://doi.org/10.7759/cureus.57350>.
11. Carbone R, Ferrari S, Belperio S, Bravi S, Mancinelli C, Soave E, et al. Advanced competence in intensive care unit: expectations, role ambiguity between physicians and nurses in intensive care units. Multi-method survey. *Acta Biomed.* 2021;92(Suppl 2):e2021332. <https://doi.org/10.23750/abm.v92i52.12670>.
12. Rao AD, Kumar A, McHugh M. Better nurse autonomy decreases the odds of 30-day mortality and failure to rescue. *J Nurs Scholarsh.* 2017;49(1):73–9. <https://doi.org/10.1111/jnu.12267>.
13. Muhammad Saeed M, Mukhtar M, Afzal M. Professional autonomy among nurses and its effect on quality of care among patients transferred from intensive care unit to general unit. *J Health Rehabil Res.* 2024;4(3):1–5. <https://doi.org/10.61919/jhrr.v4i3.1396>.
14. American Association of Critical-Care Nurses. AACN standards for establishing and sustaining healthy work environments: a journey to excellence. 2016. Available from: <https://www.aacn.org/WD/HWE/Docs/HWEStandards.pdf>.
15. Yuk S, Yu S. The effect of professional autonomy and nursing work environment on nurses' patient safety activities: a perspective on magnet hospitals. *J Nurs Manag.* 2023;2023:5587501. <https://doi.org/10.1155/2023/5587501>.
16. Pursio K, Kankkunen P, Sanner-Stiehr E, Kvist T. Professional autonomy in nursing: an integrative review. *J Nurs Manag.* 2021;29(6):1565–77. <https://doi.org/10.1111/jonm.13282>.
17. Koç Z, Çınarlı T, Şener A, Kızıltepe SK. Patricia benner: hemşirelik uygulamalarında klinik Bilgelik ve beceri Edinimi. *Hemşirelikte Eğitim Araştırma Derg;* 2018.
18. Başlı M, Metin T. Hemşirelikte önemli Bir kavram: hemşirelikte uzmanlık ve ülkemizdeki Mevcut Durumu. *Genel Sağlık Bilimleri Derg.* 2022;4(2):18796. <https://doi.org/10.51123/jgehes.2022.55>.
19. Schoonenboom J, Johnson RB. How to construct a mixed methods research design. *Kolner Z Soziol Sozialpsychol.* 2017;69(Suppl 2):107–31. <https://doi.org/10.1007/s11577-017-0454-1>.
20. Demkowicz O, Chatburn E, Archer C, Thompson R, Plackett R. Advancing mixed methods in mental health research. *BMJ Ment Health.* 2025;28:1–5. <https://doi.org/10.1136/bmjment-2024-301401>.
21. Hong QN, Fàbregues S, Bartlett G, Boardman F, Cargo M, Dagenais P, et al. The mixed methods appraisal tool (MMAT) version 2018 for information professionals and researchers. *Educ Inf.* 2018;34(4):285–91. <https://doi.org/10.3233/EFI-180221>.
22. Nayir F, Sarı T, Sarıdaş G. Karma yöntem araştırma sorularının doğasını keşfetmek. *Pamukkale Univ Soc Sci Inst J.* 2024;60361–72. <https://doi.org/10.30794/pausbed.1384311>.
23. Atasoy N, Baykara ZG. Hemşirelerin Mesleki Özerkliğe Yönelik tutum Ölçeği'nin Türkçeye uyarlanması: geçerlilik ve güvenilirlik çalışması. *Türkiye Klin J Med Ethics Law Hist.* 2020;28(2):206–15.
24. Asakura K, Satoh M, Watanabe I. The development of the attitude toward professional autonomy scale for nurses in Japan. *Psychol Rep.* 2016;119(3):761–82. <https://doi.org/10.1177/0033294116667390>.
25. Braun V, Clarke V. Reflecting on reflexive thematic analysis. *Qual Res Sport Exerc Health.* 2019;11(4):589–97. <https://doi.org/10.1080/2159676X.2019.1628806>.
26. Creswell JW, Creswell JD. Research design: qualitative, quantitative, and mixed methods approaches. 5th ed. Thousand Oaks: Sage; 2018.
27. Onwuegbuzie AJ, Johnson RB. The validity issue in mixed research. *Res Sch.* 2006;13(1):48–63.
28. Kurt D, Gurdogan EP. Professional autonomy and patient advocacy in nurses. *Collegian.* 2023;30(2):327–34. <https://doi.org/10.1016/j.colegn.2022.07.010>.

29. Noh S, Kang Y. The relationships among communication competence, professional autonomy and clinical reasoning competence in oncology nurses. *Nurs Open*. 2024;11(8):e70003. <https://doi.org/10.1002/nop.2.70003>.
30. Turkish Nurses Association. Nurse migration tendency report. Turkish Nurses Association; 26 March 2023. Available from: https://www.thder.org.tr/uploads/subeler/THD%202023/hemsire_goc_egilimi_calismasi_ra.2023-.pdf
31. Çamlıca T. Historical development of nursing education. *Türkiye Klin J Med Ethics Law Hist*. 2021;29(1).
32. Hassmiller SB, Wakefield MK. The future of nursing 2020–2030: charting a path to achieve health equity. *Nurs Outlook*. 2022;70(6 Suppl):S1–9. <https://doi.org/10.1016/j.outlook.2022.05.013>.
33. Both-Nwabuwe JMC, Lips-Wiersma M, Dijkstra MTM, Beersma B. Understanding the autonomy–meaningful work relationship in nursing: a theoretical framework. *Nurs Outlook*. 2020;68(1):104–13. <https://doi.org/10.1016/j.outlook.2019.05.008>.
34. Mrayyan MT, Abu Khait A, Rababa M, Algunmeeyn A, Al-Rawashdeh S, Al-Atiyyat N, et al. Professional autonomy in nursing: a concept analysis. *Sage Open*. 2024;14(4):21582440241302129. <https://doi.org/10.1177/21582440241302129>.
35. Asl RG, Taghinejad R, Parizad N, Jasemi M. The relationship between professional autonomy and job stress among intensive care unit nurses: a descriptive correlational study. *Iran J Nurs Midwifery Res*. 2022;27(2):119–24. https://doi.org/10.4103/ijnmr.IJNMR_75_21.
36. Erikmen E, Vatan F. Examining the individual and professional autonomy of nurses. *J Health Nurs Manag*. 2019;2(6):141–52. <https://doi.org/10.5222/SHYD.2019.36036>.
37. Georgiou E, Papathanassoglou E, Pavlakis A. Nurse–physician collaboration and associations with perceived autonomy in Cypriot critical care nurses. *Nurs Crit Care*. 2017;22(1):29–39. <https://doi.org/10.1111/nicc.12126>.
38. Şahan S, Özdemir C. Determining the relationship between nurses' attitudes to professional autonomy and job satisfaction. *Mediterr Nurs Midwifery*. 2023;3(2):90–7. <https://doi.org/10.4274/MNM.2023.22144>.
39. Hsu HY, Tung HH, Kau K, Huang SS, Tsay SL. Effects of professional autonomy and leadership style on the team-based practice of acute care nurse practitioners in Taiwan. *J Nurs Res*. 2022;30(1):e191. <https://doi.org/10.1097/jnr.000000000000461>.
40. Cao H, Song Y, Wu Y, Du Y, He X, Chen Y, et al. What is nursing professionalism? A concept analysis. *BMC Nurs*. 2023;22(1):34. <https://doi.org/10.1186/s12912-022-01161-0>.

Publisher's note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.