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Nursing students in the stranglehold of gender roles: issues of career choice and professionalism

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Abstract

Aim: The aim of the study was to investigate the relationship between Hungarian nursing students' career choices and nursing professionalism in the context of sex and gender roles. **Design:** A cross-sectional study. **Methods:** The study, conducted between March 2023 and June 2023, employed a combination of a self-developed questionnaire and validated measurement instruments (Bem Sex Role Inventory 12 – BSRI-12; Nurse Professional Competence Scale – NPC Scale; 10-item Gender Role Beliefs Scale – GRBS). Statistical analysis was performed using SPSS software. The sample consisted of 252 BSc nursing students in Hungary (53 males, 199 females). **Results:** It was found that most students surveyed exhibited feminine traits ($n = 84$) and adhered to traditional gender roles ($n = 132$). Statistical analysis demonstrated significant associations between nursing students' gender roles ($p = 0.004$), adherence to traditional gender roles ($p < 0.000$), and levels of nursing professionalism. Notably, an androgynous gender role correlated with heightened nursing professionalism ($p < 0.001$). Additionally, career choice motivations were influenced by sex, gender role, and individual perceptions of gender roles. **Conclusion:** A diversity of gender roles which influence individuals' future careers in nursing was identified. Different motivating factors play a role in male and female nursing students' career choices, knowledge of which would be useful in student recruitment in order to reduce nursing staff shortages.

Keywords: career choice, gender balance, male nurse, nurse professionalism, nursing.

Introduction

Nursing is still perceived as a woman's profession. A caring attitude which is a fundamental component of nursing practice is widely regarded as a feminine trait (Sasa, 2019). However, empirical evidence contradicts the idea that an individual's biological sex predicts the extent of their caregiving (Khademian & Vizeshtar, 2008; Liu et al., 2019). Nevertheless, the belief that nursing is primarily a female profession has a significant impact on students' career choices. It affects nursing students not only before they enter the profession but also during their studies, and later affects their professional socialization and development. The consequences of this societal perception can be experienced by any nurse, regardless of their gender (Azadi et al., 2017; Carlsson, 2020; Sasa, 2019; Prosen, 2022). Male nursing students grapple with different

stereotypes, which draw their masculinity into question, and their career choice is not supported by all groups in their social environment, resulting in high drop-out rates (Azadi et al., 2017; Prosen, 2022). Female nurses must also deal with their own challenges. In their case, society's traditional views on gender are of male dominance and female subordination reflected in relationships between nurses and physicians (Stott, 2004). In addition, female nurses face pressure from the irreconcilable demands of their role as a nurse and as the person responsible for the household and family, a potential source of conflict (Feith, 2009).

Globally, men are less likely to pursue a career in nursing (Sasa, 2019). Although, since the end of the Second World War (1939–1945), most countries have consciously endeavored to increase the number of men in the nursing field and have taken important steps towards more gender-balanced workforces, the proportion of males among nurses remains disproportionately low. Male nurses comprise about 10–15% of the nursing workforce in Western countries, while only 1–2% of nurses are

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male in non-Western countries such as China (Prosen, 2022). As of February 2023, 125.327 healthcare workers were listed in the National Basic Register of Healthcare Professionals in Hungary, of whom only 10.35% were male. Historically, there is evidence that both women and men served as nurses, but the proportion of male nurses declined sharply with the advent of the Age of Reform and the mid-1800s (Szabó & Domonkos, 2023).

In Hungary, the nursing degree program was introduced in 1989. Today, students have a wide range of options for pursuing nursing education. They can enroll in a BSc (Bachelor of Science) nursing program offered by six major universities, which generally lasts eight semesters. Additionally, nursing training is available through vocational school frameworks. Furthermore, students have the opportunity to advance their education by enrolling in a master's degree program after completing a four-year bachelor training. The Advanced Practice Nurse Master's program, launched in 2017, offers further specialization options such as Emergency Care, Intensive Care, and Community Care Nurse Practitioner. Students can obtain a doctoral degree in the field of nursing science following the completion of a master's degree (Perkó et al., 2022). Despite these educational opportunities, Hungary faces significant challenges related to healthcare worker shortages. Data from 2021 indicate that Hungary had only 5.3 practicing nurses per 1000 population, significantly lower than the Organisation for Economic Cooperation and Development (OECD) average of 9.2. This figure has remained stagnant since 2011. In comparison, countries such as Finland, Switzerland, and Norway have much higher nurse densities, with 18 nurses per 1000 population. Among Central European countries, Hungary has consistently had the lowest density of nurses per 1000 population. By 2023, Poland and Slovakia had surpassed Hungary in nurse density, with values of 5.7 and 5.5 respectively. Moreover, the Czech Republic (9.0) and Slovenia (10.5) exceeded the OECD average (OECD, 2023), emphasizing Hungary's disadvantageous position in terms of healthcare workforce shortages.

One of the main recommendations in *The Future of Nursing* (Institute of Medicine, 2011) is to promote a better gender balance in nursing, thereby preparing the profession to meet the increased demand for care. This requires more nurses to be involved in healthcare. Since career choice is a complex process influenced by both internal and external factors, the association of nursing with gender roles and stereotypes may

discourage many potential students from entering the profession.

The assumption that only women can make good nurses clearly has an unfavorable impact on the career decisions of male students (Carlsson, 2020; Prosen, 2022; Sasa, 2019).

Aim

The aim of the study was to report the career choice motivations and the level of professional competence among Hungarian nursing students, as well as to investigate their relationship with sex and gender roles.

Methods

Design

A cross-sectional study.

Sample

Six major universities and one smaller institution offering nursing programs in Hungary took part in the study. Of these, the six major universities agreed to collaborate and allowed their students to contribute to the study sample. Convenience sampling was employed, allowing nursing students to voluntarily participate in the research. The final sample of the study consisted of nursing students who had completed at least four weeks of clinical practice, were proficient in Hungarian, and had provided consent for the use of their responses in the research. Participants who did not meet these criteria were excluded from the study. The final sample comprised a total of 252 undergraduate students, including 53 males (21%) and 199 females (79%).

Data collection

Data collection took place between March 2023 and June 2023. An online survey was conducted; the link to the online survey was shared in a targeted way in closed university groups by means of social media platforms and university platforms. Participation in the survey was voluntary and anonymous. In the introduction to the questionnaire, the respondents were provided with detailed information about the background and aim of the research, how their data would be used, and informed that they could only answer the questions after giving their consent.

Instruments

In addition to questions regarding socio-demographic data, the questionnaire used in the study included three topic-specific validated measurement tools.

The method of translation – back translation was used to adapt the three validated measurement tools, including a pilot study as part of the process. Twenty nursing students participated in the preliminary survey and provided detailed feedback before the form was finalized. With their comments and suggestions, they contributed to improving the quality of the questionnaire and helped eliminate potential difficulties in comprehension.

We used the ten-item short version of the Gender Role Beliefs Scale (GBRS) to measure adherence to traditional societal gender roles (Brown & Gladstone, 2012). The scale demonstrated satisfactory internal consistency in the examined sample (Cronbach's alpha = 0.866). The short version of the GBRS comprises ten items, which participants rated on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree).

During the assessment of the gender role of participating nursing students, we used the Bem Sex Role Inventory 12 (BSRI-12). The BSRI-12 consists of masculine (M) and feminine (F) subscales, on which participants rated themselves according to six characteristics (Mateo & Fernandez, 1991). The scale demonstrated adequate internal reliability in our study following translation (Cronbach's alpha: M = 0.89; F = 0.81). Responses were graded on a five-point scale, ranging from 1 (not at all) to 5 (very characteristic).

Participants' professional competence was assessed using the abbreviated version of the Nurse Professional Competence (NPC) scale (Nilsson et al., 2018). Following translation into Hungarian, the NPC scale demonstrated adequate internal reliability across all six subscales, as indicated by Cronbach's alpha values ranging from 0.71 to 0.83 for each subscale. The NPC scale measures the professional knowledge and abilities of nurses and nursing students across six dimensions (Nursing Care, Value-based Nursing Care, Medical and Technical Care, Care Pedagogics, Documentation and Administration of Nursing Care, Development, Leadership and Organization of Nursing Care). Participants rated their abilities by relating them to statements on a Likert scale ranging from 1 to 5.

Data analysis

The data analysis process made use of the SPSS 25.0 statistical software. Descriptive statistics, encompassing percentages, means, standard deviations, medians, and minimum and maximum values, were computed to examine the sociodemographic characteristics of the nursing student cohort. In adherence to established author

guidelines, we conducted assessments of three specific measurement instruments.

The chi-square test was used to explore statistical relationships between categorical variables, such as the biological sex and gender roles of nursing students. Additionally, one-way multivariate analysis of variance was conducted to ascertain the impact of gender role categories (feminine, masculine, androgynous, undifferentiated), as determined by the BSRI-12, on NPC scale scores.

Two-sample t-tests were employed to investigate the association between biological sex and NPC subscale results. Similarly, associations between career motivations and respondents' gender in the nursing field were analyzed using two-sample t-tests. Pairwise comparisons were utilized to assess differences and associations within specific gender role categories in terms of professional competence outcomes measured by the NPC Scale.

Furthermore, Pearson correlation analyses were conducted to explore relationships between linear variables, such as the degree of adherence to gender norms, NPC scale scores, and the ordinal ranking of career motivations.

Statistical significance was established at the level of $p < 0.05$, and the interpretation of results and formulation of conclusions were grounded strictly in statistical evidence.

Results

A total of 252 undergraduate nursing students from six major Hungarian universities participated in the study. The demographic characteristics of the sample are presented in Table 1.

Table 2 reveals that a significant portion of surveyed nursing students experienced nursing stereotypes (51.6%) and gender-based differential treatment (65.4%). Additionally, half of the students reported encountering gender-related barriers in their studies. Male respondents overwhelmingly acknowledged these issues, indicating a serious concern regarding stereotypes. Notably, 73.6% of male students expressed apprehension about entering a profession traditionally associated with women.

Examining conformity to gender norms, defining gender roles and exploring correlations with nursing professionalism

Regarding the GRBS scoring procedure, responses were assessed according to Brown and Gladstone's guidelines (2012).

Table 1 Descriptive statistics of the students (n = 252)

		N (%)	Mean (SD, range)
Age			27.6 (7.8, 20–53)
Sex	male	53 (21.0)	
	female	199 (79.0)	
Academic year	1 st year	21 (8.3)	
	2 nd year	44 (17.5)	
	3 rd year	95 (37.7)	
	4 th year	92 (36.5)	
Marital status	single	104 (41.3)	
	partnered	99 (39.3)	
	married	44 (17.5)	
	divorced	5 (2.0)	
Location of residence	Budapest (capital city)	49 (19.4)	
	town	56 (22.2)	
	large village	89 (35.4)	
	municipality	56 (22.2)	
	farm	2 (0.8)	

SD – standard deviation

Table 2 Students' perceptions of stereotyping, different treatment and barriers

			N (%)
Have you encountered stereotypes about male and female nurses?	male	Yes.	47 (18.6)
		No.	1 (0.4)
		I don't know.	5 (2.0)
	female	Yes.	83 (33.0)
		No.	56 (22.2)
		I don't know.	60 (23.8)
Have patients behaved differently with you during your clinical practice because of your sex?	male	Yes.	49 (19.4)
		No.	4 (1.6)
	female	Yes.	116 (46.0)
		No.	83 (33.0)
Have you experienced any barriers during your clinical practice because of your sex?	male	Yes.	49 (19.4)
		No.	4 (1.6)
	female	Yes.	77 (30.5)
		No.	122 (48.5)
Have you had concerns with regard to entering a profession that is seen as a feminine one?	male	Yes.	25 (9.9)
		No.	14 (5.5)
		Sometimes.	14 (5.5)
	female	Yes.	8 (3.2)
		No.	172 (68.4)
		Sometimes.	19 (7.5)

Respondents obtained a mean score of 28.27 (SD: 8.08, range: 10–49), with 52.4% (132 students) scoring 26 or higher, indicating a prevalence of traditional gender role beliefs among nursing students.

The method of median split categorized students into four gender role groups based on the BSRI-12 (Carver et al., 2013). Median values for feminine (min.: 1.33, max.: 5.0, median: 4.33) and masculine (min.: 1.33, max.: 5.0, median: 3.66) scales were calculated, with respondents classified as androgynous, feminine, masculine, or undifferentiated. Table 3 provides a breakdown

of the sample's distribution by gender role, segmented by sex. Gender roles significantly differed between male and female respondents ($\chi^2 = 30.43$, $DF = 3$, $p < 0.001$), but did not correlate with marital status ($p = 0.13$) or age ($p = 0.92$).

One-way analysis of variance showed significant differences in GRBS scores among the four gender role groups ($F = 30.98$, $DF = 3-248$, $p < 0.001$). Feminine respondents scored significantly more highly ($p < 0.001$) on the GRBS scale (mean: 34.28, SD: 8.9), indicating adherence to traditional gender norms.

Table 3 Frequency of gender role groups (n = 252)

		N	Total (%)
Masculine	male	16	56 (22.2)
	female	40	
Feminine	male	2	84 (33.4)
	female	82	
Androgynous	male	28	77 (30.5)
	female	49	
Undifferentiated	male	7	35 (13.9)
	female	28	

Results from the NPC Scale, analyzed as recommended by Nilsson et al. (2018), are summarized in Table 4. The entire sample scored most highly on “Value-based nursing care” (mean score: 87.5, SD: 10.01), with the lowest scores in “Development, leadership and organization of nursing care” (mean score: 63.8, SD: 13.43). Two-sample t-test revealed male students scored significantly more highly than females on all competence areas. Multivariate one-way analysis of variance revealed significant differences in NPC scores among the four gender role groups defined by the BSRI-12 test across all six dimensions (“Nursing Care” – DF: 248, F: 13.49, $p < 0.000$; “Value-based Nursing Care” – DF: 248, F: 22.45, $p < 0.000$; “Medical and Technical Care” – DF: 248, F: 27.48, $p < 0.000$; “Care Pedagogics” – DF: 248, F: 7.65, $p < 0.000$; “Documentation

and Administration of Nursing Care” – DF: 248, F: 19.59, $p < 0.000$; “Development, Leadership and Organization of Nursing Care” – DF: 248, F: 18.66, $p < 0.000$). Table 4 indicates that androgynous gender role students performed exceptionally across all dimensions. Pairwise comparisons revealed that they achieved significantly higher scores in three areas (“Value-based Nursing Care” A–M $p < 0.000$; A–F $p < 0.000$; A–U $p < 0.000$; “Documentation and Administration of Nursing Care” A–M $p = 0.005$; A–F $p < 0.000$; A–U $p = 0.005$; “Development, Leadership and Organization of Nursing Care” A–M $p = 0.001$; A–F $p < 0.000$; A–U $p = 0.005$) compared to their feminine, masculine, and undifferentiated gender role peers. In contrast, feminine gender role respondents performed most weakly across all dimensions.

Table 4 NPC Scale scores by sex and gender role

Competence areas	Total mean	Sex	Mean	Gender role	Mean
Nursing care	83.7	male	90.4	masculine	85.07
				feminine	78.14
		female	81.9	androgynous	89.19
				undifferentiated	82.74
Value-based nursing care	87.5	male	91.7	masculine	85.71
				feminine	83.33
		female	86.3	androgynous	94.28
				undifferentiated	85.14
Medical and technical care	83.6	male	91.8	masculine	85.95
				feminine	74.88
		female	81.4	androgynous	91.25
				undifferentiated	84.00
Care pedagogics	78.8	male	84.8	masculine	77.28
				feminine	75.19
		female	77.2	androgynous	84.26
				undifferentiated	78.05
Documentation and administration of nursing care	84.5	male	90.4	masculine	84.86
				feminine	78.90
		female	82.9	androgynous	90.65
				undifferentiated	83.99
Development, leadership and organization of nursing care	63.8	male	72.1	masculine	63.33
				feminine	56.94
		female	61.6	androgynous	71.34
				undifferentiated	64.38

Pearson correlation analysis indicated negative correlations between GRBS scores and NPC Scale competence areas (e.g., “Care pedagogics” $r = -0.311$, $p < 0.000$; “Medical and technical care” $r = -0.447$, $p < 0.000$), suggesting higher nursing professionalism among students resisting traditional gender norms.

The analysis of career choice motivations and their interconnections

Regarding the factors behind students’ choice of the nursing profession, the nursing students participating in the survey ranked ten factors according to the extent to which they had been influenced by them. Table 5 indicates that “helping others”, “interest in the nursing profession”, and “stable employment, job security” emerged

as the most significant factors guiding career choice among the nursing students surveyed.

The two-sample t-test was employed to explore the gender; Table 5 presents the statistical findings. Results indicate varying degrees of influence among the factors, with significant differences observed in seven out of ten factors.

The Pearson correlation revealed a relationship between the extent to which adolescents conform to traditional gender roles (GRBS) and the factors influencing career choice. There was a positive correlation between the extent of gender role conformity and the factors “career prospects” ($r = 0.456$, $p < 0.000$), “stable employment, job security” ($r = 0.352$, $p < 0.000$), “media” ($r = 0.178$, $p < 0.000$) and “being interested in the nursing profession” ($r = 0.303$, $p < 0.000$).

Table 5 The relationship between sex and the factors that influence students to choose a career in nursing

Motivating factors	Total mean	Sex	Mean	t	DF	p value
Helping others	2.94	male	5.43	10.142	250	< 0.000
		female	2.28			
Being interested in the nursing profession	3.14	male	2.33	-3.504		0.001
		female	3.35			
Stable employment, job security	4.34	male	2.50	-6.834		< 0.000
		female	4.83			
Having friends and / or relatives already working in the healthcare sector	4.91	male	5.69	2.651		0.009
		female	4.70			
Recommendations from others (family, friends and / or teachers)	4.95	male	4.92	-0.099		0.921
		female	4.96			
Having a caring experience	4.97	male	5.60	2.355		0.019
		female	4.80			
Career prospects	5.87	male	3.75	-7.992		< 0.000
		female	6.43			
Media	7.38	male	7.24	-0.529		0.597
		female	7.42			
Social dignity	7.63	male	8.00	1.553		0.122
		female	7.54			
Religious reasons	8.82	male	9.49	2.888		0.004
		female	8.64			

T – t value; DF – degree of freedom

As a result, the respondents who obtained lower scores on gender role beliefs ranked those motivating factors as more important reasons to choose a career in nursing. Scores on gender role beliefs and the motivating factors “recommendations from others” ($r = -0.294$, $p < 0.000$), “having friends and / or relatives already working in the healthcare

sector” ($r = -0.230$, $p < 0.000$), “religious reasons” ($r = -0.475$, $p < 0.000$) and “helping others” ($r = -0.337$, $p < 0.000$) are negatively correlated, i.e., the students with higher scores on gender role beliefs ranked these factors more highly.

Discussion

The study investigated Hungarian nursing students' professional and career motivations, and their associations with sex, gender roles, and conformity levels. Achieving gender equality and questioning traditional gender role beliefs are crucial in addressing challenges in the nursing field. Confronting outdated gender views could reduce stress, create a healthier work environment, and enhance the mental well-being of both nurses and patients (Ushiro & Nakayama, 2010).

The survey was conducted in 2023, at a time when the topic of conformity to gender roles and gender stereotypes had become more open to debate around the world (including Hungary). A publication of the European Commission from 2017 reveals that, of the 28 EU Member States, Bulgarian respondents adhered most strongly to traditional gender norms, followed by Hungarian respondents (European Commission & Directorate-General for Justice and Consumers, 2017). It is therefore not surprising that, in our survey, a greater proportion (52.4%) of respondents embraced traditional and socially accepted ideas of masculinity and femininity.

Entering a profession heavily influenced by gender norms poses significant challenges for both men and women. Nursing, historically associated with femininity, remains predominantly female-dominated. Concerningly, 73.6% of male nursing students expressed apprehensions about pursuing nursing careers. This issue is not unique to Hungary; novice male nurses encounter similar difficulties in Iran, where societal gender norms and rigid gender roles hinder their integration into the nursing profession, potentially leading to loss of familial support in extreme cases (Azadi et al., 2017). Similarly, in Western countries such as the United Kingdom, persistent stereotypes portraying nursing as a feminine profession discourage men from entering the field (McLaughlin et al., 2010).

Gendered assumptions about the role, i.e., that the nursing profession is more suitable for women, due to the persistence of traditional gender norms, can result in negative behavioral, cognitive, and emotional experiences among nursing students, nurses, and patients (Sasa, 2019). Assessment of students' nursing professionalism highlights the profession's suitability for both genders, with men proving equally capable as women in nursing roles. Hungarian nursing students notably excelled in the competence area of "Value-based nursing care" (87.5), demonstrating a robust commitment to ethical principles and human dignity.

This commitment aligns with the Code of Ethics of the Hungarian Chamber of Healthcare Professionals, emphasizing patient autonomy and dignity (Hungarian Chamber of Health Professionals, 2014). Comparative data from various regions indicate consistently high scores in "Value-based nursing care", with mean scores of 89.8 in Saudi Arabia, 89.2 in southeast China, and 89.4 in Australia (Gardulf et al., 2016; van de Mortel et al., 2021, Xu et al., 2023). European-wide surveys reveal Hungarian students scoring slightly lower on competencies such as "Care pedagogics" (Hungarian students: 78.8, European students: 81.05) and "Leadership in and development of nursing care" (Hungarian students: 63.8, European students: 78.02). However, Hungarian students rated their competence more highly in "Nursing care" compared to their European peers (Hungarian students: 83.7, European students: 79.28) (Nilsson et al., 2019). Overall, nursing education in Hungary demonstrates a high European standard, with Hungarian students trailing behind European counterparts only in the competence area of "Leadership in and development of nursing care" (Nilsson et al., 2019).

Nursing, at its core, embodies care of and responsibility towards patients. However, to excel as autonomous professionals in the healthcare sector, nurses must acquire a diverse set of competencies. These include not only a dedication to patient care but also a passion for research, strong leadership skills, pedagogical knowledge, and involvement in nursing care development. Unfortunately, these competencies are often stereotypically associated with men, leading to the undervaluation of women's skills in nursing (Prosen, 2022). Our findings indicate that male respondents rated their competence significantly more highly than female respondents on the NPC Scale. Interestingly, individuals classified as androgynous scored most highly across all competence areas. In contrast, Swedish female nursing students rated their competence more highly than male counterparts in specific areas such as "Value-based nursing care" and "Documentation and administration of nursing care", while males excelled in "Leadership in and development of nursing care" and "Medical and technical care" (Carlsson, 2020). In the Hungarian context, male respondents perceived themselves as more competent in areas traditionally associated with femininity, such as caregiving and a responsible attitude towards others. This aligns with Sandra Bem's theory of androgyny, suggesting that individuals adopt traits regardless of their gender categorization (Starr & Zurbriggen, 2016).

Thus, for example, androgynous students scored more highly in the competence area “Leadership in and development of nursing care” even though leadership is still widely associated with masculinity. It is imperative to provide students with a comprehensive understanding of nursing careers, encompassing aspects beyond direct patient care. Analysis of career choice factors revealed that male students were primarily motivated by career prospects, including stable employment and advancement opportunities, while female students were driven by intrinsic satisfaction in helping others. Consequently, diverse recruitment strategies are needed to attract more students to nursing, especially considering the gendered perceptions of the profession. Despite nursing’s intrinsic appeal, men often face familial and educational barriers to pursuing nursing careers. The primary motivating factors behind the decision of those born between 1980 and 1995 to become a nurse were altruism, desire to help others and caring (O’Connor, 2015). Motivating factors such as job security and economic stability are important factors in choosing nursing in developing countries (Azadi et al., 2017), while career growth, further education and nurse scientist career are also important motivating factors but do not play any role in recruitment (Prosen, 2022).

The study encountered several limitations. Primarily, it relied on self-reported measures, potentially introducing response bias. Additionally, the level of professional competence could have been affected by the inclusion of first- and second-year students, who were still in the nascent phases of their education. Furthermore, the sample exclusively comprised nursing students. Future research would benefit from including practicing nurses with several years of experience post-graduation, as well as considering the inclusion of patients to provide insights from a societal standpoint.

Conclusion

In light of our research findings and the international implications of the topic, it is paramount to emphasize that nursing is a profession open to all students, regardless of their gender or gender roles. The level of professionalism among Hungarian nursing students aligns with the European average. However, the persistent perception of nursing as a predominantly female profession remains a significant challenge. Therefore, it is crucial to employ strategies that not only reshape public perceptions but also shape the opinions of potential students before they make career choices. Stressing

that nursing encompasses more than just direct patient care is essential for enhancing the societal prestige of the profession, which our research indicates has a limited impact on students’ career decisions. Additionally, targeted recruitment efforts should be implemented, recognizing the factors that influence both male and female individuals differently, to attract a diverse pool of nursing candidates. It is essential to emphasize the complexity of nursing practice and the depth of its interdisciplinary knowledge.

While our data suggest that male students encounter more challenges during their education due to their gender, it is imperative to take appropriate steps to support both male and female nursing students, thereby preventing attrition in the short and long term.

Ethical aspects and conflict of interest

By its Decision BM/3049/2023, the Scientific and Research Ethics Committee of the Medical Research Council granted ethical approval of this research project in accordance with the ethical principles of the Helsinki Declaration. In addition, by drawing up declarations of consent, the universities offering nursing programs in Hungary granted approval for the inclusion of their students in the research project. Participation was anonymous and voluntary, thereby ensuring the protection of the respondents’ personal data and providing them with freedom of choice regarding whether they wished to participate in the research.

The authors declare no conflict of interest.

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Author contributions

Conception and design (RGSZ, ND), data analysis and interpretation (RGSZ, ND), manuscript draft (RGSZ), critical revision of the manuscript (RGSZ, ND), final approval of the manuscript (RGSZ, ND).

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