

RESEARCH NOTE

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Nursing students' attitudes toward cross-gender care: a cross-sectional study

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Abstract

Objectives This study aimed to assess nursing students' attitudes toward providing cross-gender care and to identify the factors influencing these attitudes.

Results A cross-sectional study of 338 nursing students in Northern India found that over half (50.9%) had unfavorable attitudes towards cross-gender care. Female students demonstrated significantly more positive attitudes than male students ($p < 0.01$). Multiple regression analysis identified gender ($\beta = 0.246, p < 0.001$), academic year ($\beta = -0.150, p = 0.009$), and prior experience with cross-gender care ($\beta = 0.100, p = 0.048$) as significant predictors of attitudes. The regression model explained 19.9% of the variance in attitudes ($R^2 = 0.199, p < 0.001$). Male students expressed concerns about providing quality physical care and emotional support for patients and felt inadequately prepared to provide physical and emotional support to opposite-gender patients. These findings highlight the need for enhanced gender-sensitive training in nursing education to improve attitudes and competencies in cross-gender care provision.

Keywords Cross-gender care, Nursing students, Attitudes, Patient care, Cultural norms, Gender sensitivity, Nurse-patient communication

Introduction

Nursing is fundamentally grounded in the principle of providing compassionate care to all patients, regardless of their individual characteristics or circumstances. At its core, nursing care involves more than just performing tasks. It requires deep empathy and holistic engagement

with patients' physical, emotional, and psychological needs [1, 2]. Effective nurse-patient communication is essential for delivering high-quality care and fostering trust, understanding, and mutual respect [3].

However, cross-gender care presents unique challenges, particularly in culturally conservative settings such as India [4, 5]. Deep-rooted societal norms and religious beliefs about gender separation and modesty can create discomfort for both patients and nursing students when cross-gender care is required [6, 7]. This is particularly pronounced in rural and traditional societies.

Watson's theory of human care offers a valuable framework for addressing these challenges. It emphasizes providing care that respects human dignity, regardless of gender, and highlights the development of humanistic-altruistic values [8, 9]. Building trusting relationships with patients is central to this theory and is the key to compassionate, non-discriminatory care [10]. However,

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cultural restrictions on cross-gender interactions in India can make it difficult for nursing students to apply these ideals in clinical practice.

Despite the increasing awareness of these issues, limited research has explored how Indian nursing students perceive and manage cross-gender care. Most studies have focused on Western healthcare settings with different gender dynamics [11–13]. Furthermore, few studies have examined the attitudes of male and female nursing students toward cross-gender care, despite gender's critical role in shaping these attitudes [14].

Northern India, with its mix of urban and rural populations and conservative views on gender roles, offers an important setting for studying these attitudes. Male students face cultural taboos regarding physical contact with female patients, leading to reluctance or feelings of inadequacy [15]. Female students may hesitate to care for male patients because of societal expectations of modesty [16].

This study focused on nursing students rather than registered nurses for several reasons. First, it allows for early intervention to address gender-related issues in nursing education, potentially shaping more gender-sensitive practitioners from the beginning. Nursing students, being in a formative stage of professional development, are more receptive to adopting new practices and perspectives than experienced nurses, who may have ingrained habits.

Understanding future healthcare leaders' perspectives can help predict and shape nursing practice trends. This study addresses a significant research gap in the Indian context, particularly among nursing students. While gender-sensitive care is globally recognized, research addressing India's unique cultural and societal influences is scarce. By focusing on male and female nursing students in Northern India, this study aligns with the goal of understanding and shaping the future of gender-sensitive care in Indian nursing practice. This study seeks to improve the quality of care for patients of all genders, aligning with the ethical imperative of non-discriminatory care outlined by the International Council of Nurses [17]. Ultimately, this study aims to contribute to the literature on gender-sensitive care in the Indian healthcare system and potentially influence future nursing education and practice.

The primary aim of this study was to assess nursing students' attitudes towards providing care to patients of different genders. The specific objectives were as follows:

1. To compare the attitudes of male and female nursing students regarding providing care to patients of different genders.

2. To identify and predict factors influencing nursing students' attitudes towards providing care to patients of different genders.

Methods

Study design and setting

This study employed a descriptive cross-sectional design to explore nursing students' attitudes towards providing care to patients of different genders. The study was conducted at the Career College of Nursing, affiliated with Atal Bihari Vajpayee University, Lucknow, Uttar Pradesh, India, between October and November 2022.

Sample and sampling technique

This study used a convenience sampling technique to select participants. Nursing students who met the inclusion criteria and were easily accessible were invited to participate. The inclusion criteria were as follows: (i) nursing students enrolled in diploma or undergraduate programs, (ii) aged 17 years or older, (iii) able to read and write in English, and (iv) had completed at least two months of clinical posting. Nursing students who were unwilling to provide informed consent were excluded. Prior to the main study, a pilot study was conducted with 30 nursing students (18 females and 12 males).

Data collection procedures

All nursing students who met the inclusion criteria were invited to participate. Participants were recruited during scheduled class times and clinical rotations. Students who agreed to participate were provided with paper-based questionnaires. The questionnaires were distributed and collected in person by a research team member (AS). Students completed the questionnaires individually in classroom or clinical settings, with the researcher available to answer any questions. Adequate time and private space were provided for students to complete the questionnaires.

We used paper-based questionnaires rather than electronic versions to ensure that all students had equal access to participate, regardless of personal technology access. To encourage participation, we explained the purpose of the study and its potential benefits to nursing education. The faculty members were asked to allow time during classes or clinical rotations for questionnaire completion. However, participation remained voluntary, and students could decline without any academic consequences. The in-person, paper-based approach helped achieve a high response rate among the eligible students.

Measurements

Data were collected using a structured questionnaire that included sociodemographic information such as age, sex, area of residence, marital status, type of family, religion,

academic year, and family monthly income, and a standardized attitude assessment tool.

The 'Attitude Towards Care Provision to the Opposite Gender' scale, developed by Cheraghi et al. (2019), is a standardized instrument designed to assess nursing students' attitudes towards providing cross-gender care [18]. This 21-item scale uses a five-point Likert scale (1 = strongly agree to 5 = strongly disagree), with items 5, 6, and 9 reverse scored. The total score ranged from 21 to 105, with higher scores indicating more positive attitudes. The instrument demonstrated high reliability, as evidenced by a Cronbach's alpha of 0.882 in the present study. The Cronbach's alpha of the original questionnaire was 0.705, and the test-retest correlation coefficient was 0.929, further confirming the reliability of the instrument [18].

Theoretical background for instrument selection

The 'Attitude Towards Care Provision to the Opposite Gender' scale was chosen for this study because of its strong theoretical foundation for understanding the nuances of gender dynamics in nursing care. The items covered various dimensions of cross-gender care, including concerns regarding the quality of physical and emotional care, stress, privacy, and professional competence. The items also addressed the impact of education, religious beliefs, family attitudes, and societal expectations on students' comfort with cross-gender care. This tool was specifically designed to capture nursing students' perceptions and self-assessments of their ability to provide cross-gender care, which is critical for ensuring equitable and effective healthcare delivery.

Sample size

The sample size was calculated using the formula $n = Z^2 P (1 - P) / d^2$, based on a 30% prevalence of positive attitudes towards providing care to patients of different genders, as indicated by our pilot study. The calculated sample size was 330 participants, with a 95% confidence interval and 5% precision. However, we enrolled 338 nursing students in this study.

Ethical considerations

This study was approved by the Ethics Committee of the Career College of Nursing (approval number 128/19.06.2022) and adhered to the principles of the Declaration of Helsinki. Written informed consent and assent were obtained from all the eligible participants. Signed consent forms were stored securely and separately from the questionnaire data to maintain confidentiality. For participants under 18 years of age, assent was obtained from the student along with consent from a parent/guardian. Confidentiality and anonymity were strictly maintained throughout the study by not collecting

personal information, coding all responses, and storing informed consent forms separately from the data. Copyright holders also granted permission to use the standardized tools.

Statistical analysis

Data analysis was performed using SPSS version 26.0 (IBM Corp., Armonk, N.Y., USA), incorporating descriptive and inferential statistics. Descriptive statistics included frequency, percentage, mean, standard deviation, and range. K-means cluster analysis was chosen to segment nursing students into favorable and unfavorable attitude groups because of its ability to efficiently partition the data into distinct, non-overlapping clusters based on similarity. This method is ideal for identifying natural subgroups in data without making prior assumptions, which suits the study's goal of categorizing attitudes. The strong silhouette measures of cohesion and separation further validate the effectiveness of this approach in distinguishing between the two attitude groups. Chi-square and independent sample t-tests were used to compare the attitudes of male and female students. Multiple linear regression analysis was conducted to identify the predictors of attitudes towards providing care to patients of different genders. Statistical significance was set at $p < 0.05$.

Results

The study included 338 nursing students with a mean age of 20.62 ± 2.20 years. The demographic characteristics revealed that the majority of the participants were female (60.0%), came from joint families (53.0%), resided in rural areas (60.1%), and were in their third year of study (27.8%). Nearly two-thirds of the students reported having cared for patients of different genders (Table 1).

Attitudes towards providing care to patients of different genders

Using a two-step cluster analysis, the participants were divided into two distinct groups based on their attitudes towards providing care to patients of different genders. Cluster 1 ($n = 166$; 49.1%), with higher mean scores, was labeled as the Favorable Attitude group. In contrast, Cluster 2 ($n = 172$, 50.9%) with lower mean scores was labeled the Unfavorable Attitude group.

Comparison of attitudes between male and female students

A significant difference was found between male and female students' attitudes towards providing care to patients of different genders. Female students exhibited significantly more favorable attitudes than their male counterparts ($p < 0.01$). This result highlights gender as a critical factor influencing attitudes towards cross-gender care provision (Table 2). Participants' responses to the

Table 1 Socio-demographic characteristics of the participants (n = 338)

| Variables | Frequency (%) | | |
|---|-----------------------------|-------------------------------|--------------|
| | Male (n = 132; 39.1%) | Female (n = 206; 60.9%) | Total |
| Age (years) | 19.90 ± 2.43 | 21.08 ± 1.90 | 20.62 ± 2.20 |
| Area of residence | | | |
| Urban | 30 (22.7) | 105 (51.0) | 135 (39.9) |
| Rural | 102 (77.3) | 101 (49.0) | 203 (60.1) |
| Marital status | | | |
| Unmarried | 125 (94.7) | 190 (92.2) | 315 (93.2) |
| Married | 7 (5.3) | 16 (7.8) | 23 (6.8) |
| Type of family | | | |
| Nuclear | 27 (20.5) | 132 (64.1) | 159 (47.0) |
| Joint | 105 (79.5) | 74 (35.9) | 179 (53.0) |
| Religion | | | |
| Hindu | 22 (61.1) | 184 (60.9) | 302 (89.3) |
| Others | 14 (38.9) | 118 (39.1) | 36 (10.7) |
| Academic year | | | |
| 1 st | 64 (48.5) | 29 (14.1) | 93 (27.5) |
| 2 nd | 23 (17.4) | 57 (27.7) | 80 (23.7) |
| 3 rd | 26 (19.7) | 68 (33.0) | 94 (27.8) |
| 4 th | 19 (14.4) | 52 (25.2) | 71 (21.0) |
| Family income (per month) | | | |
| Rs. < 10,000 | 55 (41.7) | 83 (40.3) | 138 (40.9) |
| Rs. 10,000 - 40,000 | 52 (39.4) | 87 (42.2) | 139 (41.1) |
| Rs. 40,000 - 1,20,000 | 19 (14.4) | 27 (13.1) | 46 (13.6) |
| Above Rs 1,20,000 | 6 (4.5) | 9 (4.4) | 15 (4.4) |
| Cared for patients with different gender for atleast 2 months of clinical placement | | | |
| Yes | 76 (57.6) | 146 (70.9) | 222 (65.7) |
| No | 56 (42.4) | 60 (29.1) | 116 (34.3) |

attitude questionnaire are presented in Supplementary Table 1.

Factors influencing attitudes towards providing cross-gender care

Multiple linear regression analysis identified significant factors influencing nursing students' attitudes towards cross-gender care ($F = 9.052$, $p < 0.001$). The correlation coefficient (R) was 0.446, showing a moderate

relationship, while the coefficient of determination (R^2) was 0.199, indicating that these factors explained 19.9% of the variance in attitudes towards providing care to different-gender patients (Table 3).

- Gender emerged as the most significant predictor ($\beta = 0.246$, $p < 0.001$), with female students displaying more favorable attitudes towards providing care to patients of the opposite gender.
- The academic year was a significant predictor, negatively correlating with attitudes ($\beta = -0.150$, $p = 0.009$), suggesting that students in more advanced years of study had less favorable attitudes.
- Previous experience in caring for patients of different genders as part of the current nursing program for at least two months of clinical placement was another significant predictor ($\beta = 0.100$, $p = 0.048$), with those caring for patients of different genders demonstrating more favorable attitudes towards caring.

Discussion

To our knowledge, this is the first study conducted in an Indian setting aimed at examining nursing students' attitudes towards providing cross-gender care and identifying factors influencing these attitudes. Major findings revealed that over half of the students held unfavorable attitudes, with female students demonstrating more positive attitudes than male students. This study identified gender, academic year, and previous experience with cross-gender care as key predictors of attitude. Notably, male students expressed concerns about their ability to provide quality physical care and emotional support for patients and felt inadequately prepared to provide physical and emotional support to opposite-gender patients.

Attitudes towards providing care to patients of different genders

Our study found that most nursing students had unfavorable attitudes towards providing cross-gender care, which is consistent with the findings of previous studies [19, 20]. Notably, male students expressed concerns about their ability to provide quality care and felt inadequately

Table 2 Comparison of attitude of male and female nursing students (n = 338)

| Gender | Attitude score, n (%) | | Mean ± SD | t-value | p-value |
|-----------------|-----------------------|-------------|---------------|---------|--------------------|
| | Favorable | Unfavorable | | | |
| Male | 35 (26.5) | 97 (73.5) | 60.27 ± 12.44 | 6.710 | <.001 ^a |
| Female | 131 (63.6) | 75 (36.4) | 69.46 ± 12.16 | | |
| Chi-square (df) | 44.252 (1) | | | | |
| p-value | <.001 ^b | | | | |
| Total | 166 (49.1) | 172 (50.9) | | | |

^a Independent sample t test

^b Chi-square test

Table 3 Multiple linear regression analysis for predictors of attitude towards providing care to patients with different gender

| | B | Standard Error | β | t | p | R | R ² |
|---|--------|----------------|---------|--------|-----------|-------|----------------|
| Constant | 1.122 | 0.339 | - | 3.310 | 0.001 | 0.446 | 0.199 |
| Age | -0.015 | 0.013 | -0.064 | -1.10 | 0.268 | | |
| Gender | 0.252 | 0.059 | 0.246 | 4.250 | < 0.001** | | |
| Residence | 0.100 | 0.055 | 0.098 | 1.830 | 0.068 | | |
| Marital status | -0.032 | 0.102 | -0.016 | -0.309 | 0.757 | | |
| Type of family | 0.025 | 0.056 | 0.025 | 0.452 | 0.652 | | |
| Religion | 0.132 | 0.082 | 0.082 | 1.617 | 0.107 | | |
| Academic year | -0.068 | 0.026 | -0.150 | -2.645 | 0.009** | | |
| Monthly family income | 0.015 | 0.031 | 0.025 | 0.486 | 0.627 | | |
| Previously cared for patients with different gender | 0.106 | 0.053 | 0.100 | 1.982 | 0.048* | | |

Note: R = Multiple correlation coefficient; R² = Coefficient of determination; B = Unstandardized coefficient; β = Standardized coefficient; * statistically significant where $p < 0.05$ and two tailed

prepared for both the physical and emotional support of opposite-gender patients.

These findings align with those of a previous study in which male nurses reported minimizing physical contact with female patients due to fear of false abuse accusations [21]. Such apprehensions may negatively impact male nurses' attitudes towards opposite-gender care [15]. Moreover, our results echo those of another study in which over 95% of male participants agreed that care provision to opposite-gender patients could violate patient privacy [18]. Studies have highlighted deficiencies in training and suggested both theoretical and practical programs to improve nurses' capacity for cross-gender care [22, 23]. Additionally, some students believe that patients prefer same-gender caregivers, although most female students think that male and female nursing students are treated equally [24].

Factors influencing attitudes towards providing cross-gender care

Our study identified several key predictors of nursing students' attitudes towards cross-gender care, including gender, academic year, and prior experience with patients of different genders. Female students demonstrated more positive attitudes than their male peers. Interestingly, students in more advanced academic years had less favorable attitudes. Prior experience with cross-gender care positively influenced the attitudes of the participants. These findings are largely consistent with previous research that highlighted educational attainment, a history of providing care to opposite-gender patients, and clinical experience as crucial factors [18]. The influence of gender on attitudes towards cross-gender care is further supported by a quantitative study that suggests that gender influences nurses' perceptions of care [25]. However, it is worth noting that conflicting evidence exists, as another study found no significant association between gender, age, clinical practice experience, and students' caring behavior [26].

An interesting paradox emerged regarding work experience and attitudes towards cross-gender care. Students in more advanced academic years demonstrated less favorable attitudes, raising questions about whether progression through the nursing curriculum or increased clinical exposure contributed to this decline in attitudes. Advanced-year students, who typically experience more clinical placements, may experience increased stress or challenging cross-gender interactions in real-life settings [27]. These experiences could potentially reinforce discomfort or bias developed earlier in their education. The role of previous experience in caring for patients of different genders appears to be complex. While this study and some previous studies suggest that prior experience can positively influence attitudes, the observed decline in favorable attitudes among more advanced students indicates that the relationship between experience and cross-gender care competence is complex [28–30].

Limitations

Several limitations of this study should be considered when interpreting the results. The cross-sectional design limited our ability to make causal inferences from the data. Reliance on self-reported information may have introduced bias into the findings. The predominance of female participants may limit the generalizability of our results to male nursing students. The absence of similar studies makes it challenging to contextualize our findings within the broader literature. The model's R² value of 0.199 indicates that only 20% of the variance in attitudes was explained, suggesting that other influential factors remain unexplored. These limitations may impact the interpretation of the results, particularly in terms of the generalizability of the findings and a comprehensive understanding of the factors influencing attitudes towards cross-gender care.

Recommendations

To address these limitations and expand our understanding of the topic, future research should consider

conducting large-scale multicenter studies that incorporate both quantitative and qualitative data to better understand and address the factors influencing nursing students' attitudes.

Comparing first-year students with no clinical placement experience to fourth-year students with many academic hours in clinical placements is valuable for assessing the impact of clinical exposure on attitudes and competencies in cross-gender care situations. It is also important to investigate whether the trends observed in nursing students persist or change as they transition into professional practice and gain extensive clinical experience. Exploring the role of cultural and religious factors in shaping attitudes towards cross-gender care, particularly in diverse healthcare settings, and examining the effectiveness of targeted educational interventions in improving nursing students' attitudes and competencies in cross-gender care are additional areas for future research.

Practical implications

The study's findings have important implications for nursing education and practice. Nursing education programs should enhance training in gender-sensitive care by focusing on communication, emotional support, and physical care. Clinical placements should offer more opportunities for supervised care of patients of different genders to build confidence and reduce anxiety among nursing students. Ongoing professional development in gender-sensitive care is essential for practicing nurses to ensure high-quality, patient-centered care. Healthcare institutions should develop and implement policies to address the challenges of cross-gender care, including strategies to mitigate discomfort and ensure patients' dignity. Mentorship programs that pair experienced nurses with students or novice nurses could provide valuable guidance for navigating cross-gender care situations.

Conclusion

In conclusion, this study provides valuable insights into nursing students' attitudes towards providing care to opposite-gender patients and the factors influencing these attitudes. These findings underscore the need for improved education and training in gender-sensitive care in nursing programs. By addressing the complex interplay of factors that influence nursing students' attitudes towards caring for patients of different genders, we can better prepare future healthcare professionals to provide high-quality, patient-centered care regardless of gender differences.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s13104-025-07254-8>.

Supplementary Material 1

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Author contributions

SPS, SC, SKT, SRK, and AG designed the study; AS collected the data; SKT analyzed the data; and SPS, SKT, and SC drafted the manuscript; AS, SRK, and AG reviewed & edited the manuscript. All authors have read and approved the final manuscript. Additionally, SKT shares the responsibility of corresponding the manuscript.

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Data availability

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Declarations

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Ethical approval

The Ethics Committee of the Career College of Nursing, Lucknow, reviewed and approved the study (approval number 128/19.06.2022).

Consent to participate

Written informed consent was obtained from all the eligible participants.

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