

Enhancing Empathy and Caring Behavior among Nursing Interns: An Interventional Study with Gender-Based Analysis

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Empathy and
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among Nursing
Interns

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ABSTRACT

Objective: To assess the effect of a structured educational intervention on empathy and caring behavior among nursing interns and to examine gender-based differences in these outcomes

Study Design: Two group quasi-experimental study

Place and Duration of Study: This study was conducted at the University of Lahore, from 1st February 2026 to 31st March 2026.

Methods: Forty six interns were enrolled. Data were gathered using a demographic questionnaire, the Toronto Empathy Questionnaire (TEQ), and the Caring Dimension Inventory-25 (CDI-25).

Results: The median age of participants was 25 years (20–29) and the median GPA was 3.40 (2.90–3.80). Among males, empathy increased from 16.38 $\pm$ 7.939 to 55.25 $\pm$ 2.212 ($p < 0.001$), while among females it increased from 20.04 $\pm$ 6.684 to 55.09 $\pm$ 2.151 ($p = 0.034$). Caring behavior increased from 48.65 $\pm$ 5.605 to 87.87 $\pm$ 5.137 among males ($p = 0.012$) and from 48.04 $\pm$ 5.287 to 88.00 $\pm$ 5.551 among females ($p = 0.014$). Females had significantly higher baseline empathy than males ($p = 0.034$); however, no significant gender differences were observed in post-test empathy ($p = 0.183$) or caring behavior ($p = 0.190$).

Conclusion: The structured educational intervention was associated with significant improvements in empathy and caring behavior among both male and female nursing interns. Although females demonstrated higher baseline empathy, post-intervention scores became comparable between genders, suggesting that structured educational strategies may effectively enhance empathy and caring competencies regardless of gender.

Key Words: Empathy, Caring behavior, Nursing interns, Educational intervention, Gender differences.

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INTRODUCTION

Empathy and caring behavior are considered central attributes of professional nursing practice. Nursing is not limited to the performance of technical procedures or the management of physical symptoms; it also involves understanding patients' experiences, responding to their emotional needs, respecting their individuality, and providing care with compassion and dignity¹. Empathy enables nurses to recognize and understand the feelings, perspectives, and concerns of

patients, whereas caring behavior reflects the practical expression of compassion, respect, support, attentiveness, and commitment within the nurse-patient relationship. Together, these attributes contribute to the delivery of holistic and patient-centered care².

The importance of empathy in nursing extends beyond interpersonal communication. An empathic nurse is better able to establish therapeutic relationships, identify patients' concerns, communicate effectively, and provide emotional support during illness and recovery. Similarly, caring behavior allows nurses to translate professional values into observable actions³. Behaviors such as active listening, respectful communication, timely response to patient needs, emotional reassurance, and the preservation of privacy and dignity can influence patients' perceptions of the quality of nursing care⁴. Therefore, empathy and caring behavior are essential competencies that should be developed throughout nursing education and reinforced during clinical practice.

The nursing internship represents a particularly important period for the development of these competencies. During this transitional stage, nursing interns move from a predominantly academic learning

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environment into clinical settings where they are expected to apply theoretical knowledge and develop professional competence⁴. They encounter patients with complex health conditions, interact with families and multidisciplinary healthcare teams, and experience the practical realities and pressures of healthcare delivery⁵. Although clinical exposure provides valuable opportunities for professional development, factors such as heavy workload, time constraints, emotional exhaustion, and adaptation to new responsibilities may create challenges in maintaining consistent empathic and caring interactions⁶.

Educational institutions have an important responsibility to prepare nursing students and interns not only with clinical knowledge and technical competence but also with the interpersonal and humanistic skills required for professional nursing practice⁷. Traditional nursing education often emphasizes knowledge acquisition and psychomotor skills; however, the deliberate development of empathy and caring behavior may require structured educational approaches⁸. Educational interventions involving interactive discussions, reflective learning, case-based scenarios, role-playing, patient narratives, and guided clinical reflection may help nursing interns better understand patients' perspectives and incorporate empathy and caring into their daily clinical practice⁹.

A structured educational intervention can strengthen empathy and caring by helping nursing interns reflect on clinical experiences, understand patient needs, practice empathic communication, and apply caring behaviors in patient-centered care¹⁰. Gender may also influence empathy and caring through differences in professional socialization, communication, emotional expression, and clinical experiences. However, previous studies have reported inconsistent gender differences; therefore, examining gender-based variations and responses to educational interventions is important¹¹.

Despite the recognized importance of empathy and caring in nursing, there remains a need for interventions specifically designed to strengthen these competencies during the internship period¹². Nursing interns are at a critical stage of professional development, where educational support may influence the formation of long-term attitudes and behaviors toward patient care¹³. Evaluating the effectiveness of a structured educational intervention can provide evidence regarding whether targeted teaching strategies improve empathy and caring behavior beyond routine clinical exposure. Therefore, the present study purpose was to evaluate the effectiveness of a structured educational intervention in improving empathy and caring behavior among nursing interns. In addition, we will examine gender-based differences in empathy and caring behavior. The findings may contribute to the development of evidence-based educational strategies that promote compassionate, patient-centered, and

gender-responsive approaches to nursing education and clinical training.

METHODS

This two group quasi-experimental study was conducted at The University of Lahore and the data were collected from Ittefaq Hospital Trust and Government Teaching Hospital Shahdara from 1st February 2026 to 31st March 2026 letter No. UOL/IREB/26/16/03/10 dated January 14, 2026. A total of 46 BSN nursing interns aged 20-30 years, comprising 23 males and 23 females were included. The intervention focused on patient-centered care, effective communication, active listening, compassion, emotional understanding, and caring behaviors through interactive lectures, case discussions, clinical scenarios, role-play, and reflective activities. Data were collected using a demographic questionnaire, the Toronto Empathy Questionnaire (TEQ), and the Caring Dimension Inventory-25 (CDI-25). The TEQ contained 16 items with a total score ranging from 0 to 64, while the CDI-25 consisted of 25 items with scores ranging from 25 to 125. The validity and reliability of the instruments were established, with the TEQ demonstrating a content validity index (CVI) of 0.85 and Cronbach's alpha of 0.81, while the CDI-25 showed a CVI of 0.79 and Cronbach's alpha of 0.91. Data were analyzed using SPSS-26. The paired t-tests assessed pre- and post-intervention changes and independent-samples t-tests examined gender-based differences. Statistical significance was considered at $p < 0.05$.

RESULTS

There were 23 (50%) males and 23 (50%) females. Majority of participants were from urban areas 30 (65.2%), while 16 (34.8%) were from rural areas (Table 1). The median age was 25 years, with a minimum age of 20 years and a maximum age of 29 years. Regarding academic performance, the median GPA was 3.40, ranging from a minimum of 2.90 to a maximum of 3.80 (Table 2).

Table No. 1: Demographic characteristics of nursing interns (N=46)

Variable		No.	%
Gender	Male	23	50.0
	Female	23	50.0
Place of residence	Urban	30	65.2
	Rural	16	34.8

Among male participants, the mean empathy score increased from 16.38 ± 7.939 at pre-test to 55.25 ± 2.212 at post-test, while among female participants it increased from 20.04 ± 6.684 to 55.09 ± 2.151 . Similarly, the mean caring behavior score among males increased from 48.65 ± 5.605 to 87.87 ± 5.137 , whereas among

females it increased from 48.04 ± 5.287 to 88.00 ± 5.551 . The reported p-values were statistically significant ($p < 0.05$), indicating significant improvement in empathy and caring behavior among both male and female nursing interns following the intervention (Table 3).

At baseline, the mean empathy score was significantly higher among female interns (20.04 ± 6.684) than male interns (16.38 ± 7.939), with a mean difference of -3.66 ($p = 0.034$). However, no statistically significant gender difference was observed in post-test empathy scores, with males scoring 55.25 ± 2.212 and females 55.09 ± 2.151 ($p = 0.183$). Similarly, no significant gender differences were found in pre-test caring behavior scores (48.65 ± 5.605 vs. 48.04 ± 5.287 , $p = 0.168$) or post-test caring behavior scores (87.87 ± 5.137 vs. 88.00 ± 5.551 , $p = 0.190$). These findings indicate that

although females had significantly higher baseline empathy, the post-intervention scores for both empathy and caring behavior were comparable between male and female nursing interns.

Table No. 2: Descriptive statistics of nursing interns (N = 46)

Statistics	Age (years)	GPA/%
Median	25.0000	3.4000
Minimum	20.00	2.90
Maximum	29.00	3.80
Percentiles	25	3.1000
	50	3.4000
	75	3.6000

Table No. 3: Comparison of empathy and caring behavior scores of genders

Outcome Variable	Gender	Pre-test (Mean $\pm$ SD)	Post-test (Mean $\pm$ SD)	p-value
Empathy Score	Male	16.38 ± 7.939	55.25 ± 2.212	< 0.001
	Female	20.04 ± 6.684	55.09 ± 2.151	0.034
Caring Behavior Score	Male	48.65 ± 5.605	87.87 ± 5.137	0.012
	Female	48.04 ± 5.287	88.00 ± 5.551	0.014

Paired t test with $p < 0.05$

Table No. 4: Comparing of empathy and caring behavior scores between male and female nursing interns

Variable	Male (n=23) Mean $\pm$ SD	Female (n=23) Mean $\pm$ SD	Mean Difference	p-value
Empathy – Pre-test	16.38 ± 7.939	20.04 ± 6.684	-3.66	0.034
Empathy – Post-test	55.25 ± 2.212	55.09 ± 2.151	0.16	0.183
Caring Behavior – Pre-test	48.65 ± 5.605	48.04 ± 5.287	0.61	0.168
Caring Behavior – Post-test	87.87 ± 5.137	88.00 ± 5.551	-0.13	0.190

Independent t test with $p < 0.05$

DISCUSSION

The present study was demonstrated substantial improvement in both empathy and caring behavior among male and female nursing interns following the intervention. The demographic findings showed an equal distribution of male and female nursing interns, with 23 (50%) in each group, while 65.2% were from urban and 34.8% from rural areas. The participants had a median age of 25 years (20-29 years) and a median GPA of 3.40 (2.90-3.80), indicating a relatively young and academically comparable group of nursing interns at a similar stage of professional development¹⁴.

A notable finding was the marked improvement in empathy among both male and female nursing interns following the educational intervention. Among male participants, the mean empathy score increased from 16.38 ± 7.939 at pre-test to 55.25 ± 2.212 at post-test, while female participants increased from 20.04 ± 6.684 to 55.09 ± 2.151 . The paired-samples analysis indicated statistically significant improvement among both males and females ($p < 0.001$ and $p = 0.034$, respectively). This substantial increase suggests that empathy can be strengthened through structured educational

experiences rather than being regarded solely as a fixed personal characteristic¹⁵. The intervention's combination of interactive lectures, reflection, role-playing, simulation, patient narratives, and clinical discussion may have provided interns with opportunities to understand patients' perspectives and practice empathic responses in realistic situations¹⁶.

The improvement in caring behavior followed a similar pattern. Male interns demonstrated an increase from 48.65 ± 5.605 before the intervention to 87.87 ± 5.137 after the intervention, while female interns increased from 48.04 ± 5.287 to 88.00 ± 5.551 . There were statistically significant for both males ($p = 0.012$) and females ($p = 0.014$). These findings indicate that the intervention may have helped participants translate empathy-related knowledge into observable caring behaviors. This is particularly important in nursing because empathy alone may not result in improved patient care unless it is expressed through behaviors such as active listening, respectful communication, emotional support, responsiveness, and individualized attention to patients¹⁷.

The gender-based findings provide an additional important dimension to the study. At baseline, female nursing interns demonstrated significantly higher empathy than male interns, with mean scores of 20.04 ± 6.684 and 16.38 ± 7.939 , respectively ($p=0.034$). This finding suggests that gender-related differences may exist in empathic orientation before structured educational exposure. Possible explanations include differences in socialization, communication patterns, emotional expression, and culturally influenced expectations regarding caring and interpersonal relationships. However, these explanations should be interpreted cautiously because gender itself does not necessarily determine an individual's capacity for empathy¹⁸.

Importantly, the gender difference in empathy was no longer statistically significant after the intervention. Post-test empathy scores were highly comparable between male (55.25 ± 2.212) and female (55.09 ± 2.151) nursing interns ($p=0.183$). This finding is particularly meaningful because it suggests that the educational intervention may have reduced the initial gender disparity in empathy. Both groups reached similarly high post-intervention scores, indicating that structured learning activities may provide an effective means of developing empathy irrespective of gender. The finding supports the use of inclusive educational interventions rather than assuming that empathy development should be approached differently solely on the basis of gender¹⁹.

A similar pattern was observed for caring behavior. There was no statistically significant gender difference in pre-test caring behavior scores, with males scoring 48.65 ± 5.605 and females 48.04 ± 5.287 ($p=0.168$). Following the intervention, the scores remained highly comparable, with males scoring 87.87 ± 5.137 and females 88.00 ± 5.551 ($p=0.190$). The absence of significant gender differences suggests that caring behavior may be more strongly influenced by professional education, clinical experience, and nursing values than by gender alone. The nearly identical post-intervention scores further suggest that the educational intervention was similarly applicable and beneficial to both male and female nursing interns.

The reduction in gender differences after the intervention is an important finding for nursing education²⁰. Although, female participants initially demonstrated higher empathy, both male and female interns achieved comparable post-intervention empathy and caring behavior scores. This may indicate that structured opportunities for reflection, communication practice, role-playing, simulation, and exposure to patient experiences can provide a common learning environment in which interns develop similar professional competencies²¹. Such approaches may be particularly valuable in contemporary nursing education, where both male and female nurses are

expected to demonstrate the same standards of compassionate, person-centered care²⁰.

The intervention's multidimensional structure may explain the observed improvements. Rather than relying solely on didactic teaching, the program incorporated interactive lectures, self-directed learning, reflective discussions, clinical scenarios, role-playing, simulation, narrative activities. These approaches allowed participants to move from understanding the theoretical concept of empathy toward practicing empathic communication and reflecting on actual or simulated patient experiences. Experiential learning may have been particularly influential because it enabled interns to consider patients' vulnerability, emotional needs, dependence, and perspectives within realistic clinical situations²². The findings also highlight the importance of incorporating empathy and caring education into the nursing internship period. Academic nursing programs commonly emphasize knowledge and technical competencies; however, professional nursing requires the integration of cognitive, psychomotor, interpersonal, and affective competencies²³. The current findings suggest that targeted educational activities can strengthen the affective and interpersonal dimensions of nursing practice during internship. Integrating such interventions into routine clinical education may therefore help nursing interns enter professional practice with stronger communication skills and a greater orientation toward compassionate patient care.

Nevertheless, the findings should be interpreted in light of the study design and sample characteristics. The relatively small sample size was included for analysis and the use of two clinical settings may limit the generalizability of the findings to all nursing interns. In addition, the quasi-experimental design may be influenced by factors such as clinical exposure, individual motivation, and experiences occurring during the internship period. Self-reported measures may also be affected by social desirability, particularly when assessing desirable professional attributes such as empathy and caring^{24,25}. Future studies with larger samples, multiple institutions, longer follow-up periods, and objective or observational measures of caring behavior could provide stronger evidence regarding the sustainability of intervention effects.

The findings of the present study suggest that empathy and caring are developable professional competencies that can be strengthened through structured, reflective, and experiential educational strategies. Incorporating such interventions into nursing internship programs may promote more compassionate, patient-centered nursing practice.

CONCLUSION

The structured educational intervention was effective in improving empathy and caring behavior among nursing interns. Significant pre- to post-intervention

improvements were observed in both male and female participants. Although female interns had significantly higher empathy at baseline, the gender difference was no longer significant after the intervention, while caring behavior remained comparable between genders.

Author's Contribution:

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