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Article

Caring in Practice: How Final-Year Nursing Students Prepare for Professional Nursing Roles

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Abstract

Background: Caring attributes are essential for nurses to ensure optimal patient outcomes. Developing these attributes during clinical practice is crucial for nursing students' transition into professional roles. This study examines caring attributes of final-year undergraduate nursing students during their clinical placements. **Objectives:** This study examined caring attributes of final-year undergraduate nursing students during their clinical practicum. **Methods:** A cross-sectional design employing convenience sampling was used among nursing students during their clinical placements. The study was guided by Roach's 6C's of caring framework to investigate attribute development using the short-form 24-item Caring Behaviors Inventory. **Results:** A total of 102 baccalaureate nursing students (ages 22–26 years; mean = 22.49, SD = 0.78) participated. Overall, students demonstrated moderate caring attributes across four subscales. Those with prior healthcare training scored higher than their counterparts in the 5-year programme. Notably, respectful interactions and connectedness were scored relatively lower, indicating persistent gaps in skills. **Conclusions:** The findings underscore the development of caring attributes, especially communication and relational skills, progresses during clinical education. The moderate scores highlight the need for targeted interventions during training, such as video-assisted reflection, simulation-based practice, and mentorship programmes, to enhance relational competencies. Emphasizing early-year skill development in respectfulness and connectedness is critical for fostering their personal and professional growth. Nurse educators should adopt innovative, technology-supported teaching strategies and structured reflection opportunities to better prepare students for compassionate, patient-centered care in their transition to practice.

Keywords: caring attributes; nursing students; nursing education; professional development

1. Introduction

Nursing is a dynamic and essential profession dedicated to delivering safe, ethical, and holistic patient care. Grounded in compassion, safety, and human-centeredness, nursing integrates professional expertise with moral values within a framework of caring [1–4]. This foundation enables nurses to address patients' physical, emotional, and psychosocial needs, fostering therapeutic relationships critical for healing, recovery, and patient satisfaction [5,6].

Despite its significance, "caring" remains an abstract concept with varied interpretations. It encompasses compassion, empathy, respect, advocacy, and moral integrity, which are attributes that directly influence patient outcomes, satisfaction, and treatment adherence [7,8]. For instance, compassionate care alleviates anxiety, while advocacy safeguards patient autonomy, reinforcing trust and promoting recovery. These qualities are particularly crucial in today's technology-driven healthcare landscape, where nurses must balance clinical efficiency with humanistic care [7,8]. Maintaining this equilibrium is vital, as compassionate interactions enhance health outcomes, patient trust, and nurse resilience [8,9].

Caring is not only fundamental to individual nurse-patient interactions but also underpins the ethical integrity of nursing practice [3,10]. Without a strong emphasis on caring, the profession risks failing to meet patients' complex needs amid increasing healthcare complexity [11]. The multifaceted

nature of caring has been explored through various frameworks, the most influential is Roach's "6C's", comprising compassion, competence, conscience, comportment, commitment, and confidence, which serve as guiding principles for nursing professionalism [12]. Evolving perspectives have expanded these attributes to include creativity and cultural sensitivity, reflecting the contextual demands of diverse clinical environments [7,8,13,14]. These attributes are essential in fostering therapeutic relationships, promoting healing, and enhancing patient safety and satisfaction [5,15].

Nursing education plays a pivotal role in cultivating these caring attributes. Through theory, clinical training, simulations, and mentorship, students integrate caring behaviors into their professional identity [16,17]. However, evidence indicates that many nursing graduates still report insufficient confidence and proficiency in demonstrating caring behaviors, revealing gaps within current curricula and clinical training approaches [17,18]. The transition from student to practicing nurse presents additional challenges, as final-year students must reconcile theoretical knowledge with the emotional and ethical realities of clinical practice [19]. This critical phase shapes their self-perceived caring competence, yet its impact remains underexplored. This study aimed to examine the caring attributes of final-year undergraduate nursing students during their clinical practicum, focusing on their readiness to transition into staff nursing roles. This gap raises key questions: 1) To what extent do final-year nursing students embody caring attributes before graduation? 2) How do the challenges and responsibilities associated with transitioning into professional practice influence their capacity to sustain compassionate, patient-centered care? Addressing these questions is crucial for refining educational strategies, supporting students' professional development, and ensuring that future nurses are prepared to meet the emotional and ethical demands of their roles.

2. Materials and Methods

2.1. Design

This descriptive cross-sectional study evaluated caring attributes among final-year nursing students. To ensure methodological rigor and transparency, the research followed the Strengthening of Reporting of Observational Studies in Epidemiology (STROBE) guidelines [20]. The STROBE framework provides a 22-item checklist organized into six key domains: (1) study identification, (2) rationale and objectives, (3) methodology (design, setting, participants, variables, and analysis), (4) results presentation, (5) interpretation and limitations, and (6) ethical considerations. Adherence to these standards enhanced the study's quality, reproducibility, and reporting clarity.

2.2. Participants and Setting

The study recruited final-year baccalaureate nursing students (≥ 18 years) currently in clinical placements at one tertiary professional educational institution. The eligible students were mainly from 3-year and 5-year undergraduate nursing programmes. The differences between 3-year and 5-year programmes were in the admission requirement. Students on the 3-year programme had achieved a higher diploma or an associate degree in healthcare-related programmes at other institutions, while those admitted in the 5-year programme completed high school or secondary school level education.

Sample size estimation was performed using G*Power 3.1.9.4 [21], targeting a statistical power of 0.85, a significance level (α) of 0.05, and an effect size of 0.30, based on prior literature examining caring behaviors in nursing students [22]. The calculation indicated a minimum required sample of 93 participants. To account for potential attrition or incomplete data, a larger sample was targeted. Participants were approached through email, and informed consent was obtained prior to data collection.

2.3. Theoretical Framework: The 6C's Model of Caring Attributes

This study adopts Sister M. Simone Roach's 6C's model of nursing care [2,12], a comprehensive framework that articulates the core qualities defining humanistic nursing practice. The six attributes, including compassion, competence, conscience, comportment, commitment, and confidence, collectively underpin ethical, compassionate, and patient-centered care.

Compassion forms the foundation of safe and effective nursing, encompassing both knowledge and technical skills. It enables nurses to recognize subtle patient changes, perform complex procedures, and adapt to dynamic clinical environments. Conscience serves as the moral compass, guiding ethical decision-making and advocacy. Confidence emerges when competence and conscience align, empowering nurses to act decisively while acknowledging their limitations. Commitment reflects dedication beyond routine duties, such as investing extra time with patients and pursuing continuous learning, transforming nursing into a purposeful vocation. Comportment represents the visible expression of professionalism, through demeanor, communication, and appearance, fostering trust and respect.

These attributes are interconnected, elevating nursing from mere technical proficiency to a truly humanistic practice. The 6C's emphasize integrating humanistic values with professional competencies, providing a solid foundation for ethical practice, caring relationships, and patient-centered care.

2.4. Data Measures

To evaluate caring attitudes and behaviors among nursing students, the study employed the 24-item Caring Behaviors Inventory (CBI-24) [23], a validated instrument that measures four subscales: assurance, knowledge and skills, respectful, and connectedness. Assurance encompasses behaviors that foster trust and safety, such as expressing concern and providing reassurance. Knowledge and skills reflect clinical competence, including the application of expertise and the delivery of safe care. Respectful behaviors involve treating others with dignity, honoring individual differences, and respecting autonomy. Connectedness pertains to establishing emotional and therapeutic relationships that promote trust and empathy. Each item is a 6-point Likert scale, ranging from 1 (strongly disagree) to 6 (strongly agree). Higher scores indicate a greater demonstration of caring behaviors. The CBI-24 has demonstrated excellent reliability, with Cronbach's alpha coefficients ranging from 0.84 to 0.96. In this study, the overall scale's alpha was 0.93, and that of the subscales ranged from 0.75 to 0.84, confirming its reliability for assessing nursing students' perceptions and practices related to caring.

2.4.1. Interrelationships Between Caring Domains of CBI and 6C's

The attributes of the 6C's are deeply interconnected and mutually reinforcing, collectively shaping compassionate and professional nursing care. Assurance encompasses the assurance of quality, safety, and trust, which are closely connected to confidence, developed when students trust in their abilities and consistently demonstrate competence. Confidence reassures patients and colleagues, fostering trust and a sense of security. Knowledge and skills underpin competence, enabling effective performance and adaptability; ongoing development in these areas further enhances confidence and reinforces assurance. Compassion, a core element of caring, involves empathy and genuine concern for others' well-being, strengthening connectedness and fostering meaningful relationships. Respectful behavior reflects an awareness of others' dignity and aligns with conscience, the moral compass guiding ethical conduct; together, these qualities promote trust and emotional connection. Connectedness emphasizes building rapport through effective communication and professional demeanor, which are essential for establishing therapeutic relationships. A strong commitment to professional values sustains all these attributes by driving continuous learning, respectful engagement, and dedication to quality care. Collectively, these interrelated qualities foster a holistic approach to nursing, integrating humanistic values, ethical principles, and professional excellence, to deliver compassionate, ethical, and patient-centered care.

2.5. Data Collection

Eligible students were contacted via email to invite their participation in the study. They received an information sheet detailing the study's purpose, procedures, and confidentiality measures. Students who provided informed consent were instructed to complete an online questionnaire hosted on Google Forms. The questionnaire included a demographic form collecting data on age, gender, education level, marital status, and employment status. Using an online platform facilitated efficient, contactless data collection, allowing participants to complete the survey at their convenience [24].

2.6. Data Analysis

Data were analyzed using SPSS version 26.0 (IBM Corporation, Armonk, NY, USA). Descriptive statistics, including means, standard deviations, frequencies, and percentages, summarized participant characteristics and outcome variables, including the four caring behavior subscales (assurance, knowledge and skills, respectful, connectedness) and the overall caring score. Inferential analyses, such as chi-square tests, Pearson's correlation, independent samples t-tests, or one-way ANOVA, assessed associations between demographic variables and caring outcomes, chosen based on data level and distribution [25]. Statistical significance was set at $p < 0.05$, with two-sided p-values reported for all tests.

2.7. Ethical Considerations

Ethical approval was obtained from the research committee of the study institution (NUR/SRC/20200106/035). Participation was voluntary, and informed consent was obtained electronically from all students prior to data collection. To ensure confidentiality, participants were assigned anonymous serial numbers, and no identifiable information was linked to their responses during data analysis. All data, including personal information, were securely stored and kept confidential throughout the research process, in accordance with ethical standards for research involving human subjects.

3. Results

3.1. Demographic Characteristics

A total of 102 final-year undergraduate nursing students participated in the study. Among these, 86 students (84.3%) were enrolled in the 5-year baccalaureate nursing programme, while 16 students (15.7%) were from the 3-year baccalaureate programme. The participants' ages ranged from 20 to 25 years, with a mean age of 22.49 years (SD = 0.78). Specifically, students in the 5-year programme had a mean age of 22.34 years (SD = 0.59), whereas those in the 3-year programme had a slightly higher mean age of 23.31 years (SD = 1.14). Most participants were female, accounting for approximately 80.4% ($n = 82$) of the sample. Notably, about 58.8% ($n = 60$) of the students reported having previous experience working in healthcare settings, which may influence their perceptions of caring behaviors and attributes.

3.2. Caring Attributes

The mean scores for the four subscales of caring attributes and the overall caring score are summarized in Table 1.

Table 1. Mean scores of caring attributes.

Overall (n=102)		5-year programme (n=86)		3-year programme (n=16)	
mean	SD	mean	SD	mean	SD

Assurance (range 8-48)	36.42	4.87	35.93	4.50	39.00	6.02
Knowledge & Skills (range 5-30)	22.87	3.22	22.69	3.06	23.81	3.97
Respectful (range 6-36)	26.53	4.22	26.01	4.06	29.25	4.12
Connectedness (range 5-30)	20.00	3.53	19.51	3.21	22.63	4.06
Overall (range 24-144)	105.94	14.12	104.23	12.99	114.69	16.78

Results indicated that all subscales achieved mean scores exceeding two-thirds of the maximum possible, reflecting generally high levels of caring attributes among participants. However, the subscale of Connectedness recorded the lowest mean score (20.0 ± 3.53 out of 30), suggesting it was less prominent compared to other subscales. Analysis revealed statistically significant positive correlations among all four subscales (all $p < 0.001$), indicating that higher scores in one subscale were associated with higher scores in others, thus highlighting the interconnected nature of caring attributes among nursing students. Table 2 illustrates the correlations among four subscales of CBI-24.

Table 2. Associations among four subscales of caring attributes.

	Assurance		Knowledge & Skills		Respectful		Connectedness	
	γ	P	γ	P	γ	P	γ	P
Assurance	-	-	0.67	<0.001	0.82	<0.001	0.72	<0.001
Knowledge & Skills	0.67	<0.001	-	-	0.62	<0.001	0.59	<0.001
Respectful	0.82	<0.001	0.62	<0.001	-	-	0.80	<0.001
Connectedness	0.72	<0.001	0.59	<0.001	0.80	<0.001	-	-

γ : Pearson correlation

3.3. Demographic Characteristics Associated with Caring Attributes

Further analysis examined the association between demographic variables and caring attribute scores. Independent t-tests revealed significant differences in caring attributes based on programme type, with students enrolled in the 5-year programme demonstrating higher scores across all subscales compared to their 3-year counterparts. Notably, the subscale of Connectedness showed a significant difference [$t(100) = 3.41, p < 0.001$], with 5-year students scoring higher, suggesting more developed skills in establishing emotional and therapeutic relationships. Table 3 provides detailed results of these group comparisons, illustrating the impact of educational programme duration on various aspects of caring behaviors.

Table 3. Associations between independent variables and caring attributes.

	Assurance		Knowledge & Skills		Respectful		Connectedness	
	t	p	t	p	t	p	t	p
Age	-0.12	0.902	0.26	0.799	0.32	0.750	-0.06	0.953
Gender	-0.39	0.692	1.08	0.284	0.40	0.692	-0.15	0.884

Programmes	-2.37	0.020*	-1.28	0.204	-2.92	0.004**	-3.41	<0.001***
Family members working in healthcare settings	-0.27	0.790	0.44	0.663	-0.06	0.952	-1.44	0.153

*p<0.05, **p<0.005, ***p<0.001

4. Discussion

This study aimed to explore caring attributes among final-year undergraduate nursing students, primarily from the 5-year baccalaureate programme (84.3%), with a smaller cohort from the 3-year programme. The differences between the two programmes largely stem from their admission requirements: students in the 3-year programme typically hold higher diplomas or associate degrees in healthcare-related fields from other institutions, and often possess prior clinical experience, which may influence their perceptions and behaviors related to caring [26,27]. Conversely, students in the 5-year programme generally completed secondary education and may have less immediate healthcare experience.

Interestingly, students in the 3-year programme scored higher across all caring attribute subscales compared to their 5-year counterparts. This suggests that students in the 3-year programme have developed very strong caring qualities, exemplified by high scores in the six key attributes of the 6C's caring model. Specifically, they demonstrated excellent levels of assurance and respectfulness, which are the attributes that reflect confidence in their clinical competence and a respectful attitude towards patients and colleagues. The subscales of knowledge and skills, as well as connectedness, were also notably higher in the 3-year group, indicating a comprehensive development of both technical proficiency and relational capacity.

Among the five caring subscales, assurance and respectfulness emerged as the strongest qualities in both groups, with students from the 3-year programme showing particularly high scores. The emphasis on assurance and respectful behaviors aligns with the importance of fostering trust, dignity, and ethical practice, that are core elements of the 6C's model. The subscale of knowledge and skills was also well-developed, especially among the 5-year students, highlighting the priority placed on clinical competence for those with less prior healthcare experience. The connectedness subscale, which pertains to building meaningful relationships and demonstrating empathy, although slightly lower than other attributes, was still rated as good in the 3-year group. This indicates a growing awareness among students of the importance of compassion, communication, and emotional engagement that are integral components of the 6C's framework.

Aligning these findings with the 6C's theoretical model offers valuable insights. The subscales, including assurance, knowledge and skills, respectful, and connectedness, are interconnected facets of caring that collectively foster holistic nursing practice. For instance, the capacity to foster trust (assurance) is inherently linked to compassion, confidence, and commitment, that are central themes within the 6C's framework [28]. Compassion involves empathetic understanding and genuine concern, which underpin connectedness and rapport-building. Confidence and commitment support consistent, trustworthy care delivery, reinforcing patients' sense of safety and trust [29,30].

The knowledge and skills subscale, reflecting core clinical competence, directly reinforce confidence and assurance, enabling students to deliver safe and effective care. Respectful behaviors uphold dignity and align with the principles of conscience and ethical comportment, essential for fostering trust and professional integrity [31,32]. The connectedness subscale emphasizes emotional engagement and therapeutic relationships, resonating with compassion and sustained commitment, thereby enhancing the overall caring process within the 6C's framework.

Comparing the CBI-24 subscales between students from the two programmes reveals that, except for knowledge and skills, all other attributes, including assurance, respectfulness, and connectedness, show significant differences, favoring the 3-year programme. Both groups demonstrate adequate knowledge and skills for clinical practice, indicating that the curriculum effectively imparts core competencies. However, students in the 3-year programme, often with prior

healthcare experience, exhibit stronger relational and caring attributes, especially in connectedness, which emphasizes building therapeutic relationships characterized by empathy and compassion.

Integrating the 6C's framework with the measurable behaviors assessed by the CBI-24 allows nursing educators and practitioners to translate abstract caring concepts into specific, actionable behaviors that can be observed and evaluated in clinical practice [33]. For example, the attribute of assurance can be demonstrated through consistent communication of safety measures to patients, maintaining professional confidence when managing complex clinical situations, and providing clear explanations to foster trust [12,14]. Respectfulness can be reflected in behaviors such as actively listening to patients' concerns, respecting their dignity and cultural differences, and ensuring patient privacy is maintained [28]. The subscale of knowledge and skills translates into tangible actions like accurately administering medications, performing thorough assessments, and staying current with evidence-based practices [29]. Connectedness involves behaviors such as establishing eye contact, using empathetic language, and engaging in genuine conversations to build rapport [30].

Interpreting the study's findings through this lens provides a practical guide for developing competencies: students who score higher in assurance may be encouraged to lead patient education sessions; those with strong respectfulness might be mentored to advocate for patient rights; and students demonstrating connectedness can be supported to refine their communication and emotional engagement skills [34,35]. By explicitly linking these caring attributes to specific behaviors, educators can design targeted training, simulation scenarios, and reflective exercises that foster the translation of caring concepts into everyday clinical actions. Ultimately, this approach ensures that caring remains not just an abstract ideal but an integral, observable part of nursing practice, directly enhancing patient care quality and professional development [36,37].

Although both student groups demonstrated commendable performance across all subscales, the relatively lower scores in connectedness, particularly among the 5-year students, highlighted persistent areas for improvement. While foundational communication skills, including therapeutic communication, are widely incorporated into nursing curricula, challenges remain in effectively monitoring and enhancing these skills within clinical settings, especially given high student-to-faculty ratios and limited opportunities for personalized, formative feedback [38–40]. To address this, some programmes have implemented targeted strategies such as recording student-patient interactions during simulated or real clinical encounters, followed by peer and faculty-led video-assisted debriefing sessions. These reflective practices enable students to critically analyze their communication behaviors, recognize non-verbal cues, and refine relational skills [41,42].

Regarding innovative educational technologies, recent evidence indicates that high-fidelity simulations and VR environments can substantially improve communication competencies [43,44]. For instance, studies have shown that VR scenarios, such as managing emotionally charged patient interactions, can enhance empathy, emotional regulation, and interpersonal skills. A controlled trial by Wong et al. [44] demonstrated that students who engaged in VR-based simulations exhibited significant improvements in therapeutic communication skills, as measured by standardized assessment tools, compared to traditional role-play exercises. These immersive technologies allow students to repeatedly practice complex scenarios, receive immediate feedback, and develop confidence in managing sensitive conversations without risking patient safety [45,46].

Furthermore, embracing such technologies facilitates standardized, scalable, and objective assessments. Structured debriefing, a key element of simulation best practices, effectively reinforces communication strategies, emotional awareness, and relational skills, helping to overcome challenges posed by high clinical workloads and limited faculty availability [28,47]. When combined with immersive simulation, debriefing transforms the experience into a powerful learning event, fostering self-awareness and critical reflection that translate into improved clinical communication [44,48].

4.1. Limitations

This study has several limitations that should be acknowledged. Firstly, the cross-sectional design restricts the ability to infer causality or determine temporal relationships between variables.

While it provides a snapshot of caring attributes among final-year students, it cannot establish whether certain factors directly influence these attributes over time. Secondly, data collection through online questionnaires may introduce response bias or affect the reliability of responses, as participants might interpret questions differently or provide socially desirable answers. Additionally, reliance on self-reported measures limits the depth of understanding regarding actual caring behaviors in clinical practice; qualitative insights or observational data could offer a more comprehensive perspective. Future research incorporating longitudinal designs, mixed methods, or observational approaches would be valuable to deepen understanding of how caring attributes develop and manifest throughout nursing education and practice.

5. Conclusions

This study underscores the pivotal importance of caring attributes in shaping the professional identity and clinical competence of final-year undergraduate nursing students during their placements. As a fundamental component of nursing, caring influences patient outcomes, fosters therapeutic relationships, and sustains the integrity and humanistic essence of healthcare delivery. The findings highlight the critical role of the 6C's caring attributes, including assurance, respectfulness, knowledge and skills, and connectedness, in cultivating holistic nursing practice that is ethically sound, empathetic, and patient-centered. To effectively nurture these qualities, nursing education must incorporate targeted strategies that integrate theoretical frameworks with experiential learning, including deliberate clinical reflections, innovative simulation technologies, and community-based experiences. Aligning curricula with the 6C's framework enables educators to foster compassionate, competent nurses capable of delivering high-quality care in diverse settings. Ongoing assessment, personalized interventions, and the adoption of innovative pedagogical approaches are essential to support students in internalizing and embodying these caring qualities. Moreover, nurse educators and clinical supervisors should actively prioritize the intentional cultivation of caring attributes, recognizing their influence on professional identity development, ethical practice, and the delivery of compassionate healthcare. Embedding a strong caring ethos within nursing education and practice not only enhances individual competence but also elevates the overall standard of care, promotes human dignity, and ensures a responsive, effective healthcare system that meets the evolving needs of society.

Supplementary Materials: The following supporting information can be downloaded at website of this paper posted on Preprints.org, Table S1: The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines

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Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki and approved by the Research Ethics Committee of Tung Wah College (Reference number: (NUR/SRC/20200106/035) on 6 January 2020.

Informed Consent Statement: Implied consent was obtained from all subjects involved in the study prior to data collection on Google form.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available to maintain confidentiality.

Public Involvement Statement: There was no public involvement in any aspect of this research.

Guidelines and Standards Statement: A complete list of reporting guidelines can be accessed via the equator network: <https://www.equator-network.org/>.

Use of Artificial Intelligence: An AI-assisted tool, ChatGPT 3.5, was used for grammar checking. AI or AI-assisted tools were not used in drafting any aspect of this manuscript.

Conflicts of Interest: The author declares no conflicts of interest.

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