


EMPIRICAL STUDIES

Development of caring behaviour in undergraduate nursing students participating in a caring behaviour course

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Abstract

Background: In today's complex healthcare organisations there is an increasing recognition of the need to enhance care quality and patient safety. Nurses' competence in demonstrating caring behaviour during patient encounters affects how patients experience and participate in their care. Nurse educators are faced with the challenge of balancing the demand for increasingly complex knowledge and skills with facilitating students' abilities essential to becoming compassionate and caring nurses.

Aim: The aim was to describe undergraduate nursing students' development of caring behaviour while participating in a caring behaviour course.

Method: This pilot study used a quantitative observational design. At a university in Sweden, video-recorded observational data from twenty-five students were collected in the first and last weeks of a full-time five-week Caring Behaviour Course (the CBC). In total, 56-min video-recorded simulation interactions between a student and a standardised patient were coded by a credentialed coder using a timed-event sequential continuous coding method based on the Caring Behaviour Coding Scheme (the CBCS). The CBCS maps the five conceptual domains described in Swanson's Theory of Caring with related sub-domains that align with Swanson's qualities of *the Compassionate Healer* and *the Competent Practitioner*. The CBCS contains seventeen verbal and eight non-verbal behavioural codes, categorised as caring or non-caring.

Results: Between the two simulations, most verbal caring behaviours increased, and most non-verbal caring behaviours decreased. Statistically significant differences between the simulations occurred in the sub-domains *Avoiding assumptions* and *Performing competently/skilfully* in the quality of the *Competent Practitioner*. Most observed caring behaviours aligned with the *Compassionate Healer*.

Conclusion: Generally, the students' development of caring behaviours increased while participating in the CBC. Using a structured observational behavioural coding scheme can assist educators in assessing caring behaviour both in education and

in practice, supporting caring as the universal foundation of nursing and a key to patient safety.

KEYWORDS

caring behaviour, nursing education, observational coding scheme, observational method, simulation, standardised patient, Swanson's theory of caring

BACKGROUND

In today's dynamic and complex healthcare organisations, there is an increasing recognition of the need to improve both care quality and patient safety. At the same time, nurses struggle between being with and doing for patients [1]. Nurses' competence in demonstrating caring behaviour during patient interactions affects how patients experience and participate in their care [2], which in turn impacts patient health outcomes [3]. The imperative for intentional focus on caring in nursing practice is supported by the close connection Taylor et al. [4] found between patients' health outcomes and nurses' caring behaviour. Educators are faced with the challenge of balancing the demand for increasingly complex knowledge and skills due to advancing healthcare demands with facilitating students' skills essential to becoming caring nurses [5].

Swanson's Theory of Caring [6, 7] defines caring as a 'nurturing way of relating to a valued other towards whom one feels a personal sense of commitment and responsibility' [13], p. 165. The theory is conceptualised in five domains: Maintaining Belief, Knowing, Being With, Doing For, and Enabling. Swanson [7] emphasises that Maintaining Belief is incorporated in the other domains and demonstrated in the qualities describing the Compassionate Healer (Knowing and Being With) and the Competent Practitioner (Doing For and Enabling) with the intended outcome of patient healing and well-being [6, 7]. Although findings support the need to facilitate caring, nursing curricula often focus less on practicing caring behaviour and more on developing knowledge and psychomotor skills [8]. Knowledge and psychomotor skills are critical to becoming a nurse, but they are not sufficient in themselves [9]. Students may not inherently know caring behaviours, and without explicit focus on caring, students may not demonstrate caring behaviours in nursing practice [10]. Thus, caring focused on each patient's needs must be emphasised and assessed in students learning experiences [11]. An intentional focus on learning to care allows students to reflect on their own caring behaviours, which promotes the growth of professional identity [12]. Facilitating the

learning of caring behaviour is a global concern among nurse educators seeking evidence-based learning didactics as nurses confront increasing pressures in complex care environments [13].

Benner et al. [14] emphasised that a variety of learning didactics, used through a student-centred learning approach (i.e., the student is an active learner), fosters professional growth. Levesque-Bristol et al. [15] found that active, student-centred learning approaches were more conducive to professional growth compared with more traditional teacher-centred learning approaches (i.e., the student is a passive learner). However, more research is recommended to document successful components in developing professional growth [16], particularly in engaging students in bridging theoretical knowledge with application in practice [17]. In line with this, Jefferies et al. [18] noted the importance of nurse educators increasing focus on students' learning caring behaviours to better understand how to initiate and respond to patient-initiated verbal and non-verbal care. Mårtensson et al. [19] found that students' participation in a caring behaviour course using a student-centred learning approach and a variety of learning didactics (i.e., reflective practice, narrative pedagogy, and simulation didactics) facilitated their learning and application of caring behaviour. Additionally, Lavoie et al. [20] highlighted that most instruments used during simulations focus on knowledge, psychomotor skills, or behaviour as separate components. However, Mårtensson et al. [21] developed the Caring Behaviour Coding Scheme (the CBCS) that assesses knowledge, psychomotor skills, and behaviour simultaneously. The CBCS was used in this study to describe undergraduate nursing students' development of verbal and non-verbal caring and non-caring behaviours while participating in a caring behaviour course using a student-centred learning approach and a variety of learning didactics.

AIM

The aim of this study was to describe undergraduate nursing students' development of caring behaviour while participating in a caring behaviour course.

METHOD

Design

This pilot study used a quantitative observational design to code video-recorded pre-course and post-course observational data [22] collected in a caring behaviour course at a Swedish university.

Setting

This study was conducted with students enrolled in the Caring Behaviour Course (CBC) at a Swedish university. Swedish undergraduate nursing education is built on the European standard for Nursing Education [23] with six semesters that is, 180 credits, leading to a Bachelor of Science and a professional nursing degree. In this study, undergraduate nursing students during the fourth semester could take an on-campus elective full-time five-week (7.5 credits) course, the CBC [19]. When entering semester four, students had completed 45 credits in the main area of nursing (of a total of 120 credits), 30 credits in medical science, and 15 credits in social behaviour (of a total of 60 credits) of the total required 180 credits.

The overall learning outcomes for the CBC were to deepen theoretical knowledge in caring, transform that knowledge into caring behaviour, and recognise how one's own and others' values and behaviours influence patient interactions [19]. The CBC used a student-centred learning approach intertwined with reflective practice and the didactic strategies of narrative pedagogy [24] and simulation [25].

The CBC included six lectures with voluntary attendance. Theoretical content was further explored in five seminars and two caring behaviour simulation days with mandatory participation. Students applied theoretical learning during two simulation scenarios with a standardised patient. Each student was individually video-recorded with GoPro cameras (Hero 5 Session, San Mateo, CA, USA) during the simulation with a standardised patient. Four females acted as standardised patients. Their ages ranged between 63 and 68 years, and they had no prior experience in nursing education. The simulation sessions were set up at the school's clinical training centre to replicate a home environment with a coffee table and two chairs. The standardised patient sat in one of the chairs. Each student was individually introduced to the simulation by the same educator using a scenario script (Table 1). The educator also gave the students a bag holding a blood pressure cuff, a stethoscope, dressing materials for wound care, and syringes. Instructions were given to students to conduct an appropriate assessment during the simulation. Each simulation lasted between 6 and 8 min.

TABLE 1 Description of the simulation scenario script to the student.

Elsa is a self-independent and socially active 70-year-old woman living alone with her dog in a country house. Before retirement, she ran a local garden business. She takes medication for high blood pressure, and 2 days ago she was discharged from the local hospital following planned hip surgery with no complications. Now she receives assistance from municipal care for getting dressed. This morning she told the assistant nurse that she was not feeling well as she felt anxious, dizzy, and nauseated. The student acting as the nurse was asked to go visit her [26].

Students interacted with the same standardised patient in both simulation scenarios. To obtain a passing grade, students had to actively participate in mandatory learning outcomes and submit individual written reflections, group assignments, and written and practical examinations [19].

Data collection and participants

All students enrolled in the CBC during the fall and spring semesters were invited to participate in the study. All 22 eligible students in the CBC fall semester agreed to participate. In the CBC spring semester, 26 of 38 eligible students agreed. To achieve a manageable data set in the present pilot study, 13 participants from the 22 enrolled students in the CBC fall semester and 12 participants of the 26 eligible participants from the CBC spring semester, were randomly selected for a total of 25 participants (Table 2).

The Caring Behaviour Coding Schema (CBCS) [21] is based on Swanson's Theory of Caring. The CBCS maps five conceptual domains further defined by related sub-domains: Maintaining Belief, Knowing, Being With, Doing For and Enabling. Swanson [7] emphasises Maintaining Belief with related sub-domains is fundamental and threads through all domains and therefore is not a separate domain in the CBCS. The CBCS consists of seventeen verbal behavioural codes coded as events (i.e., capturing frequency) (Table 3), and eight non-verbal behavioural codes coded as states (i.e., capturing duration) (Table 4), all of which are categorised as caring or non-caring behaviours [21]. To allow for the creation of composite variables representing the verbal and non-verbal aspects of the theoretical domains and sub-domains, we treated the non-verbal codes as events.

Data analysis

Each of the 50 video recordings (25 from the first simulation and 25 from the last simulation) of the six-minute

TABLE 2 Characteristics of randomly selected participants from the CBC fall and spring semesters included in the analysis.

Characteristics of participants (n = 25)		
	Fall semester (n = 13)	Spring semester (n = 12)
Sex (n)		
Female	13	9
Male	0	3
Age (years)		
Mean	28	26
Range	21–51	20–52
Earlier care experience as (n, %)		
Healthcare provider	9 (69%)	9 (75%)
Patient	5 (38%)	3 (33%)
Significant other	8 (61%)	7 (78%)

interactions between the undergraduate nursing student and the standardised patient were coded based on the CBCS [21] using INTERACT® [27] software. A timed-event sequential continuous coding method (i.e., capturing frequency, duration, and timing) was used. A registered nurse with a master's degree and 12years of clinical work experience was credentialed after meeting the gold standard video observation requirement based on inter-rater reliability (IRR) [22]. The IRR between the coder and the first author was calculated in INTERACT® on 25% of all coded video recordings with a mean value of Cohen's kappa k=0.84 (range 0.79–0.86). This is in line with Bakeman and Gottman [22] who recommend calculating the IRR observer agreement on 10% to 25% of gathered data with an adequate level of Cohen's kappa near 0.80. All 25 videos from the first simulation were coded before coding the last simulation.

Initially, descriptive statistics were run separately for each of the sub-domains described in the CBCS for the first and last simulations. Secondly, to assess the proportion of caring behaviours, separate variables for each of the sub-domains were created in SPSS (Version 28.0) and comprised of the caring behaviours divided by the total of caring and non-caring behaviours (for both verbal and non-verbal). The Wilcoxon Signed-Rank Test in SPSS was performed for each variable to test whether the development was statistically significant. Statistical significance was set at a *p* value (exact, 2-tailed) of 0.05.

ETICAL CONSIDERATIONS

All students received both oral and written information about the study and were assured that participation was voluntary, confidential, and would not impact their grade.

After having had the opportunity to ask questions, participating students gave their written informed consent. The study was approved by the Research Ethical Review Board in Linköping, Sweden, (DNR 2017/503–31). The dean of the present university approved the study to be conducted.

RESULTS

Verbal caring behaviour

The most frequent verbal caring behaviours during the first and last simulations were observed in the sub-domains of Avoiding assumptions (114 vs 148), Centring on the one being cared for (129 vs 159), and Performing competently/skilfully (42 vs 54). For these three sub-domains, less non-caring behavioural codes (47 vs 20; 35 vs 25; and 10 vs 3) were demonstrated in the last simulation compared to the first simulation. Moreover, in the sub domains Avoiding assumptions and Performing competently/skilfully, almost the same number of students presented behaviours, but there were statistically significant differences between the first and last simulations, displayed as an increase of caring behaviours and a decrease of non-caring behaviours in both these sub-domains. For the sub-domain Informing explaining/Offering realistic optimism eight students displayed caring behaviour in the first simulation compared to 14 students during the last simulation. No students displayed verbal behaviour in relation to the sub-domains Seeking cues and Validating/giving feedback during the first and last simulations (Table 5).

Non-verbal caring behaviour

All students displayed non-verbal caring behaviours in six of eight sub-domains at both the first and last simulations. The sub-domain displaying the least caring behaviours during the first and last simulations was ‘Anticipating’ (2 vs 2). During the first and last simulations, a higher proportion of non-verbal caring behaviours were displayed in five sub-domains: Centring on the one being cared for/ Believing in or holding in esteem (50 vs 42), Seeking cues (107 vs 74), Conveying availability (40 vs 26), Sharing feelings (49 vs 32), and Performing competently/skilfully (22 vs 19) (Table 6).

The compassionate healer and the competent practitioner

There were no significant differences in the proportion of caring behaviours within Knowing, Being With, or

TABLE 3 Description of domains and sub-domains verbal caring and non-caring behavioural codes in the CBCS.

Domain	Sub-domain	Description of verbal caring behaviour	Description of verbal non-caring behaviour
Maintaining Belief Sustaining faith in the others 'capacity to get through an event or transition and face a future with meaning	Knowing/Maintaining belief Striving to understand an event as it has meaning in the life of the other's	<ul style="list-style-type: none"> Gathering information by asking mostly open-ended-questions Listen to Allow complete response Respond with confirmation Tries to understand the needs, skills, and capabilities Reflecting non-verbal expression of concern 	<ul style="list-style-type: none"> Asking question based on assumptions Judging the person's experience Interrupts Changing topics Miss opportunities Making assumptions based on what the needs, skills and capabilities are
	Being with Being emotionally present to the other	<ul style="list-style-type: none"> Conveying availability Sharing feelings Not burdening 	<ul style="list-style-type: none"> Disrespect (no greeting) Disrespect (leave without telling) Belittling feelings Shares personal information with focus on self.
	Doing for/Maintaining belief Doing for the other's as he/she would do for themselves	<ul style="list-style-type: none"> Enduring with Comforting Performing competently, skilfully Protecting Preserving dignity/Offering a hope-filled attitude 	<ul style="list-style-type: none"> Ignore important significant others Transfers the work that the nurse should have done themselves Lack of knowledge Unrealistic advocating Treating as incompetent or incapable Offering unrealistic hope
	Enabling/Maintaining belief Facilitating the other's passage through life transitions and unfamiliar events	<ul style="list-style-type: none"> Informing, explaining/Offering realistic optimism Supporting allowing Focusing, helping find meaning Generating alternatives, thinking it through Validating, giving feedback 	<ul style="list-style-type: none"> Complicated and/or incorrect explanations and instructions Misdirected support To be superficial and ignoring No or little participation in decision making Does not confirm and/or summarise
		<ul style="list-style-type: none"> Competently knowledge Realistic advocating With respect and dignity offering realistic hope Accurate and uncomplicated explanations and instructions Support Focus on the specific concerns Participation in decision making Confirms and affirms by summarising 	

TABLE 4 Description of domains and sub-domains non-verbal caring and non-caring behavioural codes in the CBCS.

Domain	Sub-domain	Description of non-verbal caring behaviour	Description of non-verbal non-caring behaviour
Maintaining belief Sustaining faith in the others' capacity to get through an event or transition and face a future with meaning	Knowing/Maintaining belief Striving to understand an event as it has meaning in the life of the other's	Centring on the one being cared for/Believing in or holding in esteem	Leaning backward, twist and turn
	Seeking cues		Staring at or flicking eyes around/nervous impression
	Engaging the self and other		Eye level is not at the same height (looking down or up) when possible or appropriate
	Being there /Going the distance		Body posture, facial expression is closed, harsh, twist and turn and directed away
	Conveying availability		Touches in a disrespectful way
	Sharing feelings		Being too close or too far away to touch when possible or appropriate
	Anticipating		Does not adjust and adapt the environment
Doing For Doing for the other as he/she would do for themselves	Performing competently, skilfully		Demonstrate no or little psychomotor skill

Enabling, but there was a significant difference in Doing For ($p < 0.01$) with a greater proportion of caring behaviours between the first and last simulations. Though not statistically significantly different, a positive trend was noted towards a greater proportion of caring behaviour in Being With ($p = 0.07$). A significant difference in the Competent Practitioner ($p < 0.01$) was found with a greater proportion of caring behaviours between the first and last simulations. Except in the case of Enabling, proportions of all other caring behaviour classifications rose between the first and last simulations (Table 7).

DISCUSSION

This pilot study described undergraduate nursing students' development of caring behaviour while participating in a caring behaviour course, the CBC. Although students had experienced four semesters of undergraduate nursing education and our sample was small, there are interesting findings to highlight. Verbal and non-verbal caring behaviours varied among the sub-domains in the CBCS during both the first and last simulations. In almost all sub-domains, there was an increase in verbal caring behaviours and a decrease in non-verbal caring behaviours.

Few non-caring behaviours were observed among both verbal and non-verbal behaviours in both simulations. Verbal and non-verbal behaviours were more frequently displayed in the qualities of the Compassionate Healer than in those of the Competent Practitioner. Verbal and non-verbal caring behaviours varied greatly. The sub-domain Avoiding assumptions was one of the two with the most verbal caring behaviours and also showed a significant learning change from the first to the last simulation. The verbal caring behaviour Centring on the one being cared for/believing in or holding in esteem was the most frequently observed. This may indicate that the students had developed an active way of listening which enabled the importance of active listening for enabling inclusive questions without assuming and/or judging the patients' experience. Students participated in a variety of learning didactics during the CBC such as lectures, seminars, and simulations where they practiced listening and asking inclusive questions. Mårtensson et al. [19] previously reported that students experienced a deepened understanding of differences in a caring encounter compared with a non-caring encounter. Sandvik and Hilli [28] emphasised that understanding is needed to make meaning of learned knowledge.

Non-verbal caring behaviours were present in all eight sub-domains during both simulations. Non-verbal caring behaviours decreased between the first and last simulations in six of the eight sub-domains. The

TABLE 5 Description of verbal caring behaviours and non-caring behaviours in relation to domains and sub-domains in the CBCS during first and last simulation ($n = 25$ student).

			Verbal caring behaviour	
			First simulation	Last simulation
Domain	Sub-domain		Number of caring behaviours: Non-caring behaviours displayed as number of students in relation to domains and sub-domain	
Maintaining Belief	Knowing	Avoiding assumptions	114:47 (<i>n</i> = 25)	148:20** (<i>n</i> = 25)
		Centring on the one being cared for/ Believing in or holding in esteem	129:35 (<i>n</i> = 24)	159:25 (<i>n</i> = 25)
		Assessing needs	28:5 (<i>n</i> = 14)	51:8 (<i>n</i> = 18)
		Seeking cues	(<i>n</i> = 0)	(<i>n</i> = 0)
	Being With	Conveying availability	28:0 (<i>n</i> = 20)	24:0 (<i>n</i> = 19)
		Sharing feelings	0:6 (<i>n</i> = 5)	0:5 (<i>n</i> = 2)
		Not burdening	4:0 (<i>n</i> = 2)	8:0 (<i>n</i> = 5)
		Enduring with	3:0 (<i>n</i> = 2)	3:0 (<i>n</i> = 2)
	Doing For	Comforting	5:6 (<i>n</i> = 8)	11:4 (<i>n</i> = 8)
		Performing competently/skilfully	42:10 (<i>n</i> = 24)	54:3** (<i>n</i> = 22)
		Protecting	3:0 (<i>n</i> = 2)	8:0 (<i>n</i> = 4)
		Preserving dignity/offering a hope-filled attitude	7:0 (<i>n</i> = 4)	5:0 (<i>n</i> = 4)
	Enabling	Informing/explaining/Offering realistic optimism	15:0 (<i>n</i> = 8)	29:0 (<i>n</i> = 14)
		Supporting allowing	(<i>n</i> = 0)	1:0 (<i>n</i> = 1)
		Focusing/helping find meaning	1:1 (<i>n</i> = 2)	2:1 (<i>n</i> = 3)
		Generating alternatives/thinking it through	1:0 (<i>n</i> = 1)	1:0 (<i>n</i> = 1)
		Validating giving feedback	(<i>n</i> = 0)	(<i>n</i> = 0)

** $p < 0.01$.

decrease could be understood as the students deepened their understanding of the meaning of non-verbal caring behaviour. For example, in the sub-domain Seeking cues the student's non-verbal caring behavioural code displayed how the student gazed at the patient with warmth and friendliness. This behavioural code decreases between the first and last simulations. A decrease in behaviour may not represent less caring, but rather that the student may have maintained their warm gaze with less interruption. This could be confirmed with future analysis of duration data.

Blanch-Hartigan et al. [29] emphasised that providing students with examples of non-verbal behaviours helped students grow professionally and understand what a non-verbal caring behaviour can look like. Moreover, Kaldheim et al. [30] reported that nursing students found it easier to grasp both verbal and non-verbal caring behaviours when observing others. In addition, Mårtensson et al. [26] described that students participating in the CBC deepened their understanding of non-verbal caring behaviour when they observed their own caring behaviour in an encounter

with a standardised patient. However, learning caring behaviours could depend on cultural and contextual aspects [29]. Undergraduate nursing students' caring behaviours are influenced by cultural differences, the environment in which the nurse-patient interaction occurs, and their own personal characteristics [31]. When theory and practice, with the help of reflection, are intertwined through appropriation and understanding, caring becomes visible in values, action, and language. Understanding involves appropriation, which means absorbing what one has understood [32]. If there is not an appropriation but only an application of concrete methodological procedures, the new understanding is reduced to a technical execution of various measures, a repetitive action, an imitation [9]. As discussed by Eriksson [33], attaining understanding is only one step in the search for knowledge, and thus, knowledge can be viewed as the foundation for change.

Even though there were changes in behaviour between the first and last simulations, few significant changes were observed. Changing behaviour is difficult, especially in shorter time periods, and a five-week course might not offer

TABLE 6 Description of non-verbal caring behaviours and non-caring behaviours in relation to domains and sub-domains in the CBCS during first and last simulations ($n = 25$ student).

			Non-verbal caring behaviour	
			First simulation	Last simulation
			Number of caring behaviours: Non-caring behaviours displayed as number of students in relation to domains and sub-domain	
Domain	Sub-domain			
Maintaining Belief	Knowing	Centring on the one being cared for/ Believing in or holding in esteem	50:2 ($n = 25$)	42:1 ($n = 25$)
		Seeking cues	107:0 ($n = 25$)	74:0 ($n = 25$)
		Engaging the self and other	42:2 ($n = 25$)	44:4 ($n = 25$)
	Being With	Being there/Going the distance	21:3 ($n = 25$)	23:2 ($n = 25$)
		Conveying availability	40:1 ($n = 25$)	26:0 ($n = 25$)
		Sharing feelings	49:7 ($n = 25$)	32:0 ($n = 25$)
	Doing For	Anticipating	1:1 ($n = 1$)	2:0 ($n = 1$)
		Performing competently/skilfully	22:5 ($n = 24$)	19:0 ($n = 22$)

Quality	Behaviour	First simulation	Last simulation
The compassionate healer (knowing, being with)	Number of caring behaviours: Non-caring behaviours	612:111 ($n = 25$)	634:65 ($n = 25$)
The competent practitioner (doing for, enabling)	Number of caring behaviours: Non-caring behaviours	97:23 ($n = 25$)	132:8 ($n = 25$)**

** $p < 0.01$.

TABLE 7 Caring and non-caring behaviours describing the compassionate healer and the competent practitioner during the first and last simulations ($n = 25$ student participants).

sufficient reinforcing practice opportunities. The COM-B model [34, 35] helps explain factors that may be relevant to behaviour change. The model has three overarching aspects, that is, ‘capability’, ‘opportunity’, and ‘motivation’, that position the learner for both conscious and subconscious processes to take place. Applied to the present study, ‘capability’ can be understood as the students’ capacity and competence related to previous theoretical and practical experiences in learning caring behaviour; ‘opportunity’ can be linked to the variety of learning didactics provided in the CBC; and lastly, ‘motivation’ can be connected to the students’ willingness to learn caring behaviour. As described by Benner [36], it takes willingness and time to become an expert nurse. To be able to develop into an expert nurse, the nurse progresses through levels of proficiency, meaning that the novice nurse has no or little experience in a situation and the expert nurse has deepened their understanding and knowledge of the entire situation. Future studies could follow undergraduate nursing students over time (i.e., during their education) and assess (e.g., with the CBCS) development of caring behaviour and which educational approaches offer the most guidance over time.

In both simulations, caring behaviours were more frequent in the quality of the Compassionate Healer than in the Competent Practitioner. One explanation might be that the CBC learning outcomes generally focused on behaviours associated with the Compassionate Healer while the Competent Practitioner in the verbal sub-domain of Performing competently/skilfully demonstrated a significant learning change from the first to the last simulation. Developing behaviours associated with the Compassionate Healer may deepen students’ understanding of caring behaviour as including learning and applying knowledge blended with psychomotor skills. During the CBC, students participated in learning activities that combined the two qualities as a wholeness of caring nursing practice. Mårtensson et al. [19] reported that undergraduate nursing students wanted to increase their knowledge base during their education to become proficient in the quality the Compassionate Healer. Sandvik and Hilli [9] emphasised that students may have knowledge and psychomotor skills, but understanding is required to know which and when knowledge matters. Educators must realise, then, that students need both practice opportunities and

role modelling to instil the quality of the Compassionate Healer just as they do for the quality of the Competent Practitioner.

LIMITATIONS

This study took place at only one Swedish university during an on-campus elective five-week course in semester four of six nursing programme semesters, which may limit the generalisability of our findings. This study should be replicated beyond one university for increased diversity and to advance our understanding of the role of culture and context in learning and expressing caring behaviours. Another limitation is the total number of coded video-recorded observational data. A larger sample size and multi-site nursing education programmes with a larger data set may yield a higher degree of validity. However, the complexity and richness of the data are in line with recommendations by Haidet et al. [37], who emphasise that assessing the complexity of verbal and non-verbal behaviour can be applied to a relatively small number of video-recorded observational data. Moreover, the timed-event sequential continuous coding method is appropriate as it captures frequency, duration, and timing of observed behaviour [38]. However, a control group and more coded video-recorded observational data would add to the generalisability as well as further validation of the CBCS. Lastly, the findings represent a five-week caring behaviour course in the middle of the students' undergraduate nursing education, and thus, no conclusions can be drawn about retention or long-term effects that could be managed with a longitudinal design.

CONCLUSIONS

The presented findings demonstrate that participation in a caring behaviour course facilitated the undergraduate nursing students' development of caring behaviour. Incorporating caring into nursing education must be the foundation for nurses to learn caring behaviour. Intertwining caring with nursing practice is a prerequisite for undergraduate nursing students' learning to become professional nurses and, like this study's findings, cannot be left to chance in nursing curricula. This study highlights the need to facilitate students' verbal and non-verbal caring during their nursing education with the intended outcome of patient healing and well-being. Professional nursing practice requires students to become both Compassionate Healer and a Competent Practitioner. Caring is not unique to nursing and although this study focused on undergraduate nursing students, our findings could be applied in healthcare organisations both with

nurses and other healthcare providers to improve both care quality and patient safety.

AUTHOR CONTRIBUTIONS

Sophie Mårtensson: designing the study, training the coder, and performing IRR, analysing data, and drafting the manuscript. Susanne Knutsson: designing the study, analysing data, and drafting the manuscript. Eric A. Hodges: designing the study, analysing data, and drafting the manuscript, and providing language editing for the manuscript. Gwen Sherwood: designing the study, drafting the manuscript, analysing data, and providing language editing for manuscript. Anders Broström: designing the study, analysing data, and drafting the manuscript. Maria Björk: designing the study, analysing data, and drafting the manuscript.

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CONFLICT OF INTEREST STATEMENT

The authors declare that there is no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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