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RESEARCH ARTICLE

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Comparing feeling of competence regarding humanistic caring in Belgian nurses and nursing students: A comparative cross-sectional study conducted in a French Belgian teaching hospital

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Abstract

Aim: The aim of the study was to describe and compare feeling of competence regarding humanistic caring in Registered Nurses (RN) and nursing students (NS).

Design: A quantitative comparative cross-sectional research design was used.

Methods: A convenience sample of 196 RN and 47 NS in a teaching hospital in Belgium completed a self-administered questionnaire composed of a sociodemographic survey and the Caring Nurse-Patient Interactions Scale (CNPI-23) developed by Cossette et al.

Results: The four dimensions of the CNPI-23 were compared using the Skillings–Mack test. Both groups scored higher on "humanistic" and "comforting" than on "clinical" and "relational" care and both scored lowest on this last dimension. Linear regressions showed that none of the variables had a statistically significant influence on the CNPI-23 scores, except for NS "state of health," which influenced their feeling of competence regarding "relational care."

KEYWORDS

Belgium, caring, feeling of competence, humanism, nurses, quantitative research

1 | INTRODUCTION

1.1 | Choosing a model of nursing

Numerous conceptual models of nursing (CMN) have been developed since the 1950s. Fawcett defined a CMN as "a set of relatively abstract and general concepts and the propositions that describe or link those concepts" in connection with the discipline's four core metaparadigm concepts: the person, the environment, health, and nursing (Fawcett, 1993, pp. 1–2). Pepin, Ducharme, and Kérouac (2010, 2017) listed more than 20 "complete and explicit" CMN in their book on nursing thought. These authors specified that a CMN had to define the following elements in order to be considered complete and explicit: model's assumptions and values grounded in the discipline; purpose of nursing services; role of nursing professionals; how to consider service recipients; source of the problems that recipients

might encounter; how nursing interventions are conducted; and desired outcomes (Adam, 1999, cited in Pepin et al., 2017, p. 51).

In other words, CMN specify "how to consider specific services that nurses offer society and delineate their sphere of responsibility" (Pepin et al., 2017, p. 151). Consequently, choosing a CMN to guide nursing within healthcare institutions warrants reflection. Among other things, it is incumbent upon these institutions to define their management and continuing professional development (CPD) policies as a function of this choice in order to allow nursing professionals to implement the model through their care approach (Lee & Fawcett, 2013) in clinical practice on the field. Switching to a "new" CMN entails rethinking and ultimately reorganizing all care along specific guidelines (Saulnier, 2004).

Opened in 1977, "Cliniques Universitaires de Bruxelles – Hôpital Erasme" (CUBHE) is the teaching hospital of the Université libre de Bruxelles (ULB). Since their inception, CUBHE had used the CMN developed by Virginia Henderson, which is probably the CMN most widely used in French-speaking Europe (Henderson, 1964; Lecocq et al., 2017).

In 2014, eager to propose health care in synch with people's current expectations in terms of both technical care and human interaction, the executive management of the ULB Nursing Department (DDI) wished to review its choice of CMN in the aim of improving quality of care and giving fresh meaning to the work performed by nursing professionals. The Haute Ecole Libre de Bruxelles Ilya Prigogine (HELB-IP), another higher education institution under the administrative supervision of ULB, joined forces with CUBHE in this reflective exploration, motivated by the desire to adapt its Bachelor of Science in Nursing (BSN) programme. For a nursing education institution, to choose a CMN to provide perspective on nursing is to choose to train and educate its students to care a certain way. It follows that the institution must then devise learning-teaching mechanisms as a function of this choice in order to allow students to develop the competencies required to implement this nursing model in clinical practice in the field. Adopting a nursing model for the purposes of education and training allows laying down specific guidelines (Saulnier, 2004) that help students build a specific professional identity that will influence their approach to care (Lee & Fawcett, 2013). To opt for a "new" CMN is to rethink and eventually re-orient all of the learning-teaching mechanisms in order to educate and train professionals to practice caring differently.

Together with teacher-researchers at the School of Public Health of the Université libre de Bruxelles (ESP-ULB), the CUBHE DDI and teachers at HELB-IP recognized the "Modèle humaniste des soins infirmiers—UdeM" (UdeM-HMN), that is the humanistic model of nursing developed by the Nursing Faculty of the University of Montreal, as the CMN that best corresponded to their vision of nursing. This model places a heavy emphasis on the relational component of nursing and on the humanistic caring attitudes and behaviours that steer the care process based on the patient's aspirations and priorities (Cara et al., 2016). It does not give priority to technical care, except in emergency situations, nor it hierarchize the individual's needs. The DDI organized a series of discussion meetings with team managers in charge of care units to validate the choice of this model. At the end of these meetings, which confirmed the DDI's orientation, it was decided to explore, scientifically, and from a humanistic caring perspective, how nursing care was implemented in the field by both nursing professionals at CUBHE and nursing students at HELB-IP.

1.2 | Humanistic caring

1.2.1 | An answer to today's care issues

According to Cara, caring can be defined synthetically as "a human and relational approach that demands attention, understanding, compassion and engagement" [free translation]. It makes individualized care possible. It rests on humanistic values that translate into attitudes and behaviours geared to protecting, enhancing, or preserving the human dignity of patients (Cara, 2010; Watson, 2001, p. 343–354). Cara et al. (2016) are the latest in a string of authors in the field of nursing science who, since the 1970s, have developed theories of humanistic caring. These include, in chronological order, Leininger (1978), Watson (1979), Roach (1984), Boykin and Schoenhofer (1990, 1993) and Halldorsdottir (1991).

Caring's contribution to the health and well-being of patients has been demonstrated time and again. In a metasynthesis of the literature published in 2008, several authors showed that caring provided psychological well-being to both patients and nursing professionals, and physical well-being to patients (Finfgeld-Connett, 2007; Swanson, 2013). By endowing nursing with new meaning, caring allows fighting against the risk of dehumanization, that is, the objectification of people caused by the growing technicity of care and to productivity pressures on healthcare systems, which increase the workload of nursing professionals and reduce the amount of time that can be spent with each patient (Cara, Nyberg, & Brousseau, 2011; Cara & O'Reilly, 2008; Krol & Lavoie, 2015).

1.2.2 | From Jean Watson's Theory of Human Caring to the Université de Montréal Humanistic Model of Nursing

For Watson (1979), caring is the core concept in nursing science and practice. Health is defined as harmony between body (biophysiological dimension), mind (psychological and cognitive dimensions) and spirit (spiritual dimension). Embracing the ideal of human caring leads nurses to engage consciously and deliberately in a transpersonal caring relationship during caring moments. These are moments where nurse and patient share their perceptions and experiences and thus afford the opportunity within the relationship to weigh options and determine what actions to take (Cara & O'Reilly, 2008; Watson, 2006, p. 300). Watson defined ten principles, referred to as carative factors, on which the nurse–patient relationship and nurse interventions should be based (Cara & O'Reilly, 2008; Watson, 1988, 2005). In a later version of her

theory, Watson operationalized these carative factors into a clinical caritas process whose concreteness made it easier for nurses to appropriate the factors and for humanistic caring practices to be implemented in the field (Cara & O'Reilly, 2008; O'Reilly, Cara, & Delmas, 2016; Watson, 2001, p. 347). Caring, according to Watson, is a guarantee of individualized quality care from the patient's point of view.

Caring is presented by Cara et al. as the first core concept of the UdeM-HMN. The model is intended to integrate this concept, which has been characterized at times as abstract, into the nursing process in order to render it more accessible and pragmatic for the nursing community and thus counter criticisms regarding its applicability in clinical practice (Cara et al., 2016).

1.2.3 | An all-encompassing vision of nursing competency

For different authors, caring entails being both relationally and technically competent. For instance, according to Finfgeld-Connett (2007), care comprises affective or humanistic aspects relative to attitude and engagement in addition to instrumental or technical aspects, and it is important not to separate them. The creators of the UdeM-HMN make competence the second core concept of their model. They specify that it is based at once on knowledge and on experience, which allow acquiring different types of knowing. They place great importance on the relational dimension of competence, which is acquired, in their opinion, through a humanistic reflective practice. Competence is developed through basic education and training and throughout life.

1.2.4 | Feeling of competence regarding humanistic caring

We found only one validated tool appropriate for measuring feeling of competence regarding humanistic caring: the Caring Nurse-Patient Interactions Scale (CNPI) developed in French by Cossette, Cara, Ricard, and Pepin (2005), Cossette, Cote, Pepin, Ricard, and D'Aoust (2006), Cossette, Pepin, Côté, and de Courval (2008), Cossette, 2015) (see section "instrument of measurement" for details). In their extensive search in the Cumulative Index to Nursing and Allied Health Literature (CINHAL) database covering 1984 to 2019 aimed at inventorying and summarizing all empirical instruments and studies concerned with assessing and measuring caring, Sitzman and Watson (2019) obtained the same results as we. They found only two published studies on the subject and both used the CNPI to measure feeling of competence. The first, by Jiang, Ruan, Xiang, and Jia (2015), reported a correlation between feeling of competence in nursing professionals and, respectively, age and experience. In the second study involving nursing students, Yılmaz and Çınar (2017) found no sociodemographic variable to have a statistically significant influence on feeling of competence regarding caring.

1.2.5 | Feeling of competence in nursing professionals and nursing students at CUBHE

We were interested in exploring feeling of competence, or sense of competence, in nursing professionals and nursing students at CUBHE. How competent do nursing professionals today feel providing humanistic caring? Seeing how they are involved in providing care alongside professionals, how competent do nurse interns feel providing humanistic caring? Is the feeling of competence regarding humanistic caring similar in nursing professionals and nursing students?

1.3 | Aim of study

The aim of the study was to describe and compare feeling of competence in nursing professionals and nursing students regarding humanistic caring.

On the one hand, we wished to verify whether certain variables influenced feeling of competence. These included sociodemographic variables, variables related to respondent state of health, which might affect their view of the care relationship by way of their own possible experience as patients, and variables related to personal beliefs, which might colour their professional attitudes.

On the other hand, we wished to test two hypotheses. The first was to the effect that nursing professionals and nursing students alike would feel more competent delivering "clinical care" and "comforting care" than "relational care" and "humanistic care" as construed from a humanistic caring perspective because technical and comforting care are what their attention is focused on in the course of their work day. The second was to the effect that, according to Benner's "from novice to expert" model (1982), owing to their learner status, nursing students would feel less competent than their professional counterparts regarding all four dimensions of the care relationship as construed from a humanistic caring perspective (Benner, 1982).

2 | METHODOLOGY

2.1 | Research design, population and sample

2.1.1 | Research design

A quantitative and comparative cross-sectional research design (LoBiondo-Wood & Haber, 2014, p. 205) was used for the purposes of the study.

2.1.2 | Field of investigation

In the interest of homogeneity, we limited the field of investigation (FI) to the 21 medical and surgical care units at CUBHE (635 of its

858 beds), excluding specialty units such as maternity, paediatrics, intensive care and emergency, in order to focus on the interactions between nursing professionals and non-critical care adult patients (Table 5; see Appendix S1).

2.1.3 | Populations and inclusion and exclusion criteria

Two distinct populations were considered in the study. The first consisted of the Registered Nurses (RN) working in the FI, whether a) "permanent" staff members attached to a care unit, b) "floating" staff members backing up a care unit or c) "temporary" staff members. There were no exclusion criteria. The second comprised the nursing students (NS) completing an internship in the FI who met the following inclusion criteria: (1) BSN intern enrolled at HELB-IP and (2) in the second or third year of the programme. First-year NS were excluded because they only completed an observation internship in the course of their studies and, consequently, did not interact with patients. Students from other schools were excluded because each institution was free to devise its own education programme and to base it or not on a CMN.

2.1.4 | Sampling

A convenience sample was used. The target populations in the FI were composed of 333 RN and 51 NS. The accessible populations in the FI at time of study consisted of 299 RN and 51 NS.

Following the recommendations of LoBiondo-Wood and Haber (2014, pp. 245–246), we collected data from "the largest sample possible" in a small population.

Of the 299 RN effectively on the roster, 196 (66%) participated in the study. Of the 51 NS completing internships, 47 (84%) participated in the study (Table 1). No information was available regarding the characteristics of non-participants.

2.1.5 | Certificate of ethics approval

Pursuant to the law and to the rules of best practice concerning research involving human participants, we sought and obtained the approval of the Erasme-ULB Research Ethics Board (REB), which has jurisdiction over ULB and the hospital where the study was conducted. The REB issued approval for the clinical research proposal entitled "Mesurer le degré de Caring de l'accompagnement infirmier proposé au sein d'un hôpital universitaire Bruxellois" [Measuring the degree of caring in the nursing care offered at a teaching hospital in Brussels] on 29/02/2016 under the reference numbers "Erasme: P2016/077" and "EudraCT/ CCB: B406201627277."

TABLE 1 Samples, questionnaires returned and participation rates

	Sample (*n*)	Questionnaires returned (*n*)	participation rate (%)
Nursing professionals	299	196	66
Permanen	229	154	67
Floating and Temporar	70	42	60
Nursing students	51	47	84

2.2 | Procedure

The study was conducted from 7 a.m., Monday, 21 March 2016, to 6 p.m., Friday, 25 March 2016, in the 21 units listed in Table 5 (see Appendix S1). Where the RN are concerned, staff from the division in charge of new employee onboarding and CPD distributed the number of questionnaires corresponding to the number of persons on the roster in the units over the study period. Each questionnaire came with an information and consent form, as well as a self-adhesive envelope in which to seal the completed questionnaire. The anonymous envelope was to be dropped into a box specially installed for the purpose in each department. The boxes were emptied daily. Where the NS are concerned, a teacher who was a member of the research team handed out the questionnaires to those interested and collected the completed questionnaires sealed in an anonymous envelope. The completed questionnaires were forwarded to a specialized team at ESP-ULB for coding.

2.2.1 | Instruments of measurement

Our research tool was a self-administered questionnaire that combined two instruments of measurement.

Sociodemographic questionnaire

The first instrument served to collect various sociodemographic data from the two study populations. Most variables were selected on the basis of recommendations made in reference books on nursing research (Gray, Grove, & Sutherland, 2017, p. 186; Polit & Beck, 2017, p. 489) and the others based on suggestions from the research committee, which included nursing managers, academics and patient partners (see Table 6 in Appendix S1). Regarding the RN, the DDI explicitly requested that we not collect data regarding the care units that respondents belonged to because it did not wish the units to be compared with one another.

Caring nurse-patient interactions scale

There is as yet, unfortunately, no specific measurement tool based on the UdeM-HMN. However, Watson's theory of caring is cited as foundational by the authors of the UdeM-HMN (Cara et al., 2016). Consequently, we decided to use the Caring Nurse-Patient Interactions Scale (CNPI) developed in French at the UdeM by Cossette et al. (2008) as the second component of our research tool.

The long version of the scale comprises 70 items (CNPI-70) that describe observable caring attitudes and behaviours related to Watson's ten carative factors (Cossette et al., 2005). The scale was later reduced to 23 items (CNPI-23) based on two studies demonstrating face and content validity, reliability and construct validity using an exploratory and then a confirmatory factor analysis (Cossette et al., 2006, 2008). The 23 items are grouped under four dimensions: 1/**clinical care** (CLC; nine items) reflecting the nurse's response and the clinical skills needed to respond to patient health problems (teaching, environment and needs); 2/**relational care** (RC; seven items) emphasizing major elements of a therapeutic relationship that take into account the patient's perceptions of a particular situation (helping relationship, expression of emotions, problem solving and spirituality factors); 3/**humanistic care** (HC; four items) which reflect the interdependent philosophical aspect of caring and the individual's value system (humanism, hope and sensitivity); and 4/**comforting care** (COC; three items) "composed of items originally from the teaching, environment, and needs factors and in line with Watson's view of the caring relationship that protects, enhances, and preserves the patient's dignity, humanity, and wholeness" (Cossette, Pepin, & Fontaine, 2019). The items of both versions were formulated for use with patients, their family, nursing professionals and nursing students alike. They can be rated in terms of importance, frequency or satisfaction by patients and their families or in terms of feeling of competence or feasibility by nursing professionals and students (Cossette, 2015). For the purposes of our study, we used the CNPI-23 with its focus on competencies. The nursing professionals and students rated how competent they felt on a five-point Likert scale ranging from 1 (not at all)–5 (extremely). The score for each dimension was the sum of the responses to the items belonging to each subscale. To compare the means between the subscales, this score is divided by the number of items included in the dimension since each subscale does not comprise the same number of items (Cossette, 2015; Table 2).

Scores were still considered valid and included in the analyses if no more than one value was missing for a given dimension. If more than one value per dimension was missing, the observation was excluded from the analyses.

Total scores per dimension were calculated if no more than one value was missing. If two or more values were missing, the total score for the subscale was deemed missing and excluded from analyses. Missing values were not imputed.

TABLE 2 Possible score ranges and Cronbach's Alphas for different dimensions of the CNPI-23 according to Cossette (Cossette, 2015; Cossette et al., 2008)

Subscale	Number of items	Possible range	Cronbach's alphas†
Clinical care	9	9–45	0.82–0.93
Relational care	7	7–35	0.89–0.91
Humanistic care	4	4–20	0.64–0.73
Comforting care	3	3–15	0.61–0.74

†Vary depending on whether the scale is used to rate items in terms of importance, feeling of competence or frequency.

2.3 | Data analysis

Data analyses were run on RStudio, version 1.1.463. We checked the psychometric properties of the CNPI-23 in the selected setting and population by calculating the Cronbach's alpha coefficient for each dimension for both RN and NS. They proved acceptable by the standards proposed by Streiner, Norman, & Cairney, 2015 (see Table 7 in the Appendix S1). Descriptive results are given in terms of absolute and relative frequencies and, as applicable, in terms of measures of central tendency (mean or median) and dispersion (standard deviation or minimum–maximum). As the distribution of the data was asymmetrical in both samples, we used the Skillings–Mack test to compare the two in terms of the results on the four dimensions. We examined the influence of the sociodemographic variables on the respondents' scores by running linear regressions (generalized linear model) after checking the conditions for applying the test (linearity of data, normality of residuals, homogeneity of residuals variance, independence of residuals error terms). Statistical significance was set at 5%.

3 | RESULTS

3.1 | Sociodemographic variables

The database for the RN comprised 196 questionnaires, of which 140 were fully completed. For the NS, the database comprised 47 questionnaires, of which 37 were fully completed (no missing data; see Table 6 in Appendix S1).

3.2 | Description of feeling of competence regarding caring in nursing professionals and students

Where the RN are concerned, feeling of competence scores varied in a statistically significant manner across dimensions ($p < .001$), from 3.5 (0.7)–4.3 (0.5), with the lowest obtained for "relational care" and the highest for "comforting care" (Figure 1). Regarding the NS, scores varied in a statistically significant manner across dimensions ($p < .001$), from 3.1 (0.8)–4.3 (0.5), with the lowest obtained for "relational care" and the highest for "humanistic care" (Figure 2).

3.3 | Comparison of feeling of competence regarding caring in nursing professionals and nursing students

When RN and NS were compared on each dimension, a statistically significant difference emerged on "clinical care" ($p < .001$) and "relational care" ($p = .002$). Professionals scored higher than students did in both cases (Table 3).

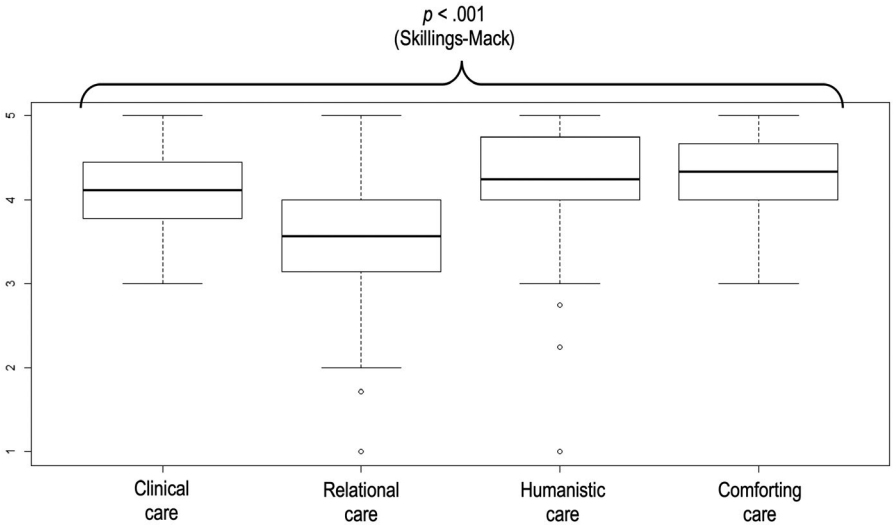

FIGURE 1 Intragroup comparison of means for four dimensions – professional sample

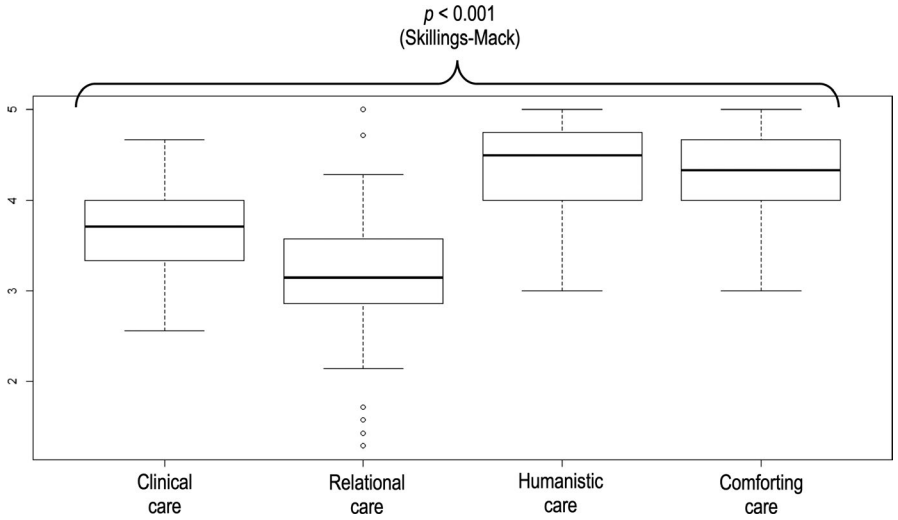

FIGURE 2 Intragroup comparison of means for four dimensions – student sample

TABLE 3 Comparison of nursing professionals' and nursing students' scores on each of four dimensions (Kruskal–Wallis)

	Clinical care	Relational care	Humanistic care	Comforting care
Nursing professionals	(*n* = 196)	(*n* = 196)	(*n* = 196)	(*n* = 196)
Mean(*SD*)	4.1(0.5)	3.5(0.7)	4.3(0.6)	4.3(0.5)
Median(Min-Max)	4.1(3.0–5.0)	3.6(1.0–5.0)	4.3(1.0–5.0)	4.3(3.0–5.0)
Nursing students	(*n* = 46)	(*n* = 46)	(*n* = 46)	(*n* = 46)
Mean(*SD*)	3.6(0.5)	3.1(0.8)	4.3(0.5)	4.3(0.6)
Median(Min-Max)	3.7(2.6–4.7)	3.1(1.3–5.0)	4.5(3.0–5.0)	4.3(3.0–5.0)
$\chi 2$ (Kruskal–Wallis)	30.361	9.310	0.519	0.083
p-value† (Kruskal–Wallis)	**<.001***	**.002***	.471	.772

†*p*-value calculated using the Monte Carlo simulation.

**p*<.05

TABLE 4 Influence of sociodemographic variables on scores obtained by nursing professionals and students on the four dimensions of the CNPI-23 scale

	Nursing professionals beta (SD)				Nursing students beta (SD)			
Dimension	**CIC**	**RC**	**HC**	**CoC**	**CIC**	**RC**	**HC**	**CoC**
Gender	0.036 (0.145)	−0.216 (0.230)	−0.085 (0.172)	−0.135 (0.155)	0.314 (0.236)	0.269 (0.317)	0.130 (0.259)	−0.279 (0.282)
Native land	−0.023 (0.106)	−0.114 (0.172)	0.057 (0.127)	−0.047 (0.114)	N.A.[b]	N.A.[b]	N.A.[b]	N.A.[b]
Citizenship	0.103 (0.126)	0.016 (0.200)	−0.035 (0.150)	−0.138 (0.135)	N.A.	N.A.	N.A.	N.A.
French citizenship	N.A.	N.A.	N.A.	N.A.	−0.093 (0.206)	0.226 (0.276)	−0.195 (0.226)	−0.399 (0.114)
Other citizenship	N.A.	N.A.	N.A.	N.A.	−0.015 (0.247)	0.236 (0.331)	0.277 (0.271)	0.123 (0.295)
Age	N.A.[a]	N.A. [a]	N.A.[a]	N.A.[a]	0.018 (0.014)	0.012 (0.018)	0.007 (0.015)	0.003 (0.017)
State of health	−0.080 (0.083)	−0.153 (0.133)	−0.090 (0.099)	−0.169 (0.089)	0.047 (0.164)	**0.504**[*] (0.220)	0.314 (0.179)	0.324 (0.195)
Chronic condition	0.056 (0.113)	0.038 (0.179)	0.017 (0.134)	0.009 (0.120)	−0.267 (0.225)	0.416 (0.302)	0.053 (0.246)	−0.116 (0.268)
Limitation due to health	−0.013 (0.055)	−0.058 (0.087)	0.011 (0.065)	0.008 (0.058)	N.A.[c]	N.A.[c]	N.A.[c]	N.A.[c]
Religion	0.071 (0.099)	0.039 (0.159)	−0.055 (0.118)	0.129 (0.106)	−0.343 (0.184)	−0.141 (0.246)	−0.042 (0.201)	0.049 (0.219)
Staff status in unit	−0.135 (0.136)	−0.010 (0.217)	0.105 (0.162)	−0.060 (0.145)	N.A.	N.A.	N.A.	N.A.
Work seniority	0.002 (0.005)	0.003 (0.009)	−0.004 (0.006)	−0.001 (0.006)	N.A.	N.A.	N.A.	N.A.
Team seniority	0.006 (0.006)	0.010 (0.010)	0.006 (0.007)	0.003 (0.006)	N.A.	N.A.	N.A.	N.A.
Degree	−0.007 (0.090)	−0.109 (0.143)	−0.147 (0.107)	0.047 (0.096)	N.A.	N.A.	N.A.	N.A.
Program year	N.A.	N.A.	N.A.	N.A.	0.259 (0.177)	−0.159 (0.238)	0.019 (0.194)	0.175 (0.211)
Work experience/ health	N.A.	N.A.	N.A.	N.A.	0.073 (0.176)	0.146 (0.236)	−0.045 (0.193)	0.187 (0.209)
Intercept	4.300 (0.375)	4.077 (0.595)	4.382 (0.447)	4.788 (0.401)	1.193 (1.490)	1.116 (1.998)	2.99 (1.63)	3.430 (1.776)
Adjusted R^2	−0.029	−0.033	−0.051	−0.015	0.030	0.154	−0.048	−0.002
F-statistic	0.664	0.632	0.432	0.824	1.13	1.769	0.805	0.990

[a]For the nursing professionals, in all the models considered, "age" was removed after examination of variance inflation factors (VIF) suggested multicollinearity with "work seniority."

[b]For the nursing students, "native land" was removed after examination of variance inflation factors (VIF) suggested multicollinearity with "citizenship."

[c]For the nursing students, "limitation due to health" was removed owing to an absence of variability.

[*]$p < .05$.

3.4 | Influence of sociodemographic variables on CNPI-23 scores

For the RN, the regression analyses showed that none of the sociodemographic factors considered was significantly associated with scores obtained on the different CNPI-23 dimensions (See Table 4, as well as Tables 8–13 in the Appendix S1). In all of the models considered, "age" had to be removed for being too strongly correlated (Pearson's correlation coefficient = 0.92) with "work seniority."

For the NS, the regression analyses showed that "state of health" was significantly associated ($p = .0292$) with the scores obtained on the "relational care" dimension. The more deteriorated the state of health, the higher the "relational care" score. No other sociodemographic factor considered was found to be associated in a statistically significant manner to the scores obtained by the students on the different dimensions of the CNPI-23 (See Table 4, as well as Tables 14–19 in the Appendix S1). In all of the models considered, "native land" was removed after examination of variance inflation factors suggested collinearity with "citizenship." Owing to the absence of variability, "limitation due to health" was removed as well.

4 | DISCUSSION

The aim of our study was to describe and compare feeling of competence regarding humanistic caring in nursing professionals and students.

No sociodemographic variable was found to be significantly associated with scores obtained by RN on the four CNPI-23 dimensions. We sought to find out whether other researchers who had used the tools developed by Cossette et al. (2019) with nursing professionals identified any variables with a potential influence on these scores. Desmond et al. (2014) used the CNPI-70 to measure the impact of a one-day professional development activity on feeling of competence of nursing professionals. However, as theirs was a small sample, they did not seek to evidence the potential influence of sociodemographic variables on the respondents' scores. Only Jiang et al. (2015) reported a correlation between feeling of competence of professionals and, respectively, age and experience. However, they did not indicate clearly whether their results were obtained from multivariate analyses or by testing each variable's effect one at a time.

Where NS are concerned, Yılmaz and Çınar (2017) found no sociodemographic variable to have a statistically significant influence on feeling of competence regarding caring in their study using the CNPI-70 (Cossette et al., 2019). In our study, no sociodemographic variable was significantly associated with the scores obtained on the different dimensions of the CNPI-23, except for state of health reported by students. This variable proved significantly associated with the "relational care" score ($p = .011$): Students who rated their state of health as "neither good nor bad" were those who deemed themselves to be most competent. This result raises a number of questions. First and foremost, it could be a "false positive" in light of the *F*-statistic of the regression test. Otherwise, these students could have been sensitized to these dimensions of nursing because they themselves had been patients. If so, as patients, they perhaps experienced the positive effects of these attitudes and behaviours and identified with role models, a factor whose impact on professional development is well recognized (Kosowski, 1995; Nelms, Jones, & Gray, 1993; Rosser et al., 2019). On the other hand, they could have been exposed to "uncaring" professionals whom they did not wish to resemble (Kosowski, 1995; Paterson & Crawford, 1994). In this regard, Vanhanen and Janhonen (2000) explored why students chose to enrol in nursing studies. Some of the participants in their study reported that having been a patient or having been cared for was the reason they chose the programme. According to these authors, this was one way of experiencing caring and this life experience could have a lasting effect on nursing students throughout the curriculum. Vanhanen and Janhonen added that these students also hoped their studies would advance their personal development and give meaning to their life.

Elsewhere, Sadler (2003) used the *Caring Efficacy Scale* (CES) developed by Coates (1997, 2019) to measure self-reported caring competency among NS. Sadler reported that, according to the students surveyed, the factors that had a positive influence on their caring competency were their family environment and their work experience in health settings more so than the academic curriculum.

4.1 | Feeling of competence regarding caring in nursing professionals and nursing students compared

Our first hypothesis to the effect that nursing professionals and students alike would feel more competent delivering "clinical care" and "comforting care" than "relational care" and "humanistic care" was invalidated. Both groups felt more competent delivering "humanistic care" and "comforting care" than "clinical care" and "relational care."

Our second hypothesis to the effect that students would feel less competent than nursing professionals with respect to all four dimensions of the care relationship as construed from a humanistic caring perspective was invalidated as well. The scores obtained by the professionals and the students were significantly different on only two dimensions, namely, "clinical care" ($p < .001$) and "relational care" ($p = .002$). No statistically significant difference emerged between the scores obtained by the two groups on "humanistic care" and "comforting care."

It is interesting to note, also, that the two groups scored lowest on "relational care" (Table 3). This is congruent with the results of Jiang et al. (2015), who demonstrated in their study using the CNPI-23 with nurses that four of the five items with the lowest scores were items from the "relational care" dimension.

None of the studies that have used the instruments developed by Cossette et al. did so to compare RN and NS in terms of feeling of competence of. In their work, Desmond et al. (2014) demonstrated with the help of the CNPI-70 that a CPD activity increased the feeling of

competence of participants regarding caring. In our research, the NS felt just as competent as the RN did regarding "humanistic care" and "comforting care," which suggests that whether the basic nursing curriculum is completed or not makes no difference. One explanation for this might be that the students overestimated their competence regarding these two dimensions and particularly "humanistic care," whose corresponding items seem easy to rate though they refer to fundamental theoretical concepts of which there is yet no consensual definition. For example, "consider [patients] as complete individuals; show that I am interested in more than their health problem" refers to the concept of "person," which is central in nursing but the definition of which varies across authors. This over-confidence constitutes a subconscious cognitive bias known in psychology as the "Dunning–Kruger effect." It is a metacognitive problem found among novices, who lack the necessary knowledge to recognize their incompetence and assess their true capabilities (Berner & Graber, 2008; Kruger & Dunning, 1999). On the other hand, the NS, who received teaching grounded in humanistic caring, might have rightly assessed their competence regarding "humanistic care" while the nursing professionals might have overestimated their own for lack of knowledge of the theoretical fundamentals of humanistic caring, which is indispensable for proper self-evaluation (Costello & Barron, 2017; Krol, 2010; Lavoie, Boyer, Pepin, Goudreau, & Fima, 2017).

4.2 | Implications for practice

Human interaction in the health system is an integral aspect of the modern vision of quality of care (Hanefeld, Powell-Jackson, & Balabanova, 2017). Aside from humanistic considerations, a relationship that is steeped in kindness, compassion and understanding, that is supportive at the emotional and psychological levels, that is respectful of the patient's dignity, that involves the patient in the decision-making process and that takes account of their knowledge, beliefs, values, concerns and preferences has a positive impact on treatment adherence and health outcomes (Doyle, Lennox, & Bell, 2013). Consequently, patient satisfaction with the care relationship warrants systematic exploration (Akachi & Kruk, 2017). Applying nursing conceptual models to quality improvement projects as suggested by Fawcett (2016) can be helpful to achieve the "quadruple aim" of modern health systems: enhancing patient experience, improving population health, reducing costs and improving the work life of healthcare providers (Bodenheimer & Sinsky, 2014). It seems important to promote humanistic caring considerations across the entire health system, including in the clinical field, education, management and public policies (Brousseau, Cara, & Blais, 2017). Mindful, well-trained, competent nursing professionals can be key actors in this transformation process.

5 | LIMITATIONS AND BIAS

Our study presents various limitations. First, the convenience sample used does not guarantee representativeness. Second, the CNPI-23 is constructed on the basis of the theoretical concepts of Watson's human caring, concepts with which the RN were not necessarily acquainted. This was congruent with the objectives of both institutions involved in the research but this relative lack of familiarity might have introduced a bias in their self-evaluation. Consequently, some responses may have been over- or under-estimated. Third, as presented in the section "instrument of measurement," CNPI is a measurement tool based not on the UdeM-HMN but on Watson's theory of caring. Fourth, the mere fact of using a questionnaire entails a possible social desirability bias. Finally, at the hospital's request, we did not collect any information that would have allowed comparing the care units among themselves. Such information could have yielded interesting results given that inter-unit differences are a factor evidenced in the literature (Genet, Lheureux, & Truchot, 2018).

6 | CONCLUSION

Regarding feeling of competence within the framework of the humanistic caring relationship, both nursing professionals and nursing students scored higher on "humanistic care" and "comforting care" than on "clinical care" and "relational care," and both scored lowest on this last dimension. Our study demonstrated also that none of the sociodemographic variables considered had a statistically significant influence on the calculated scores on the four dimensions of the CNPI-23, with the exception of state of health reported by nursing students, which influenced their feeling of competence regarding "relational care."

Contrary to our hypothesis, the students felt as competent as the professionals regarding "humanistic care" and "comforting care." Further research using both quantitative and qualitative methods is necessary to gain a deeper understanding of these phenomena.

"Relational care" was the dimension that both nursing professionals and nursing students felt least competent in. This finding is important as much for managers as for nursing instructors. As a result of this study, CUBHE implemented a mandatory CPD module centred on the humanistic care relationship. HELB-IP, for its part, incorporated in its nursing curriculum a series of simulation exercises involving patients to allow students to practice their relational skills. Nursing professionals must gain a sharper awareness of the issues in this regard and must be properly trained to address them. Conceptual models of humanistic nursing care and the tools that they have inspired constitute an apt frame of reference for research and quality improvement projects.

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CONFLICT OF INTEREST

None.

DATA AVAILABILITY STATEMENT

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.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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