ORIGINAL ARTICLE

Caring Competency Among Nursing Students: a Quantitative Study

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ABSTRACT

Introduction: Newly graduated nurses are expected to be highly skilled and competent in incorporating professional caring to provide high-quality care. Therefore, nursing students who are unaware of the caring importance and lack of caring competence would be facing a great challenge with the complexity of the healthcare population. This study aims to explore the current status of nursing students' caring competency so that it could serve as a learning paradigm for nurse educators to constantly assimilate the caring input in nursing education. **Methods:** This study employed a quantitative design with a cross-sectional survey and was conducted in a public nursing college in Penang, Malaysia. Approximately, a hundred and thirty-seven nursing students with different years of study were recruited by stratified sampling approach. **Results:** Results indicate a satisfactory level of caring competency (M = 3.33, SD = 0.28) with the highest mean score in Year 3 students. Significant differences in caring competency and all caring domains across training years were observed (p < 0.001) and the caring competency level significantly correlates with the training years (p <0.001) **Conclusion:** This study revealed that the current caring knowledge integrated into the curriculum structure has imparted the caring input towards the future nursing workforce. However, there were significant differences in caring competency scores observed across the training years that signal the limitation and need for strategies to improve nursing educational outcomes.

Keywords: Caring behavior, Caring competency, Nurses, Nursing students

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INTRODUCTION

The nursing program aims to produce graduates who are highly skilled and competent incorporating professional caring in practice to provide high quality and holistic care. Professional caring involves a combination of technical and attitudinal behaviors that can be developed and trained by nursing education and influenced by innate caring which contributes to self-awareness while performing nursing actions (1). Caring occurs in therapeutic nurse-patient relationships where the patients value the nurses' act of constant care and barely forget the nurses' kindness and caring that resulting in patient-centered are and improve the overall patient experience (2,3).

Nursing students as the future nursing workforce need to develop caring competency before practice. The knowledge of professional caring and positive perception of how caring affects patient well-being should be imparted during the theoretical session and clinical placement. Currently, the concept of caring is introduced in the curriculum during the initial year of training whilst continuously integrate the caring approach in the consecutive training years in nursing courses in both pre-registration and post-registration nursing programs. The curriculum was developed to meet the comprehensive objectives to prepare future nurses to be sensitive to the needs of clients through a humanistic and holistic approach. Besides, the nursing practicum forms the integrative strand of the curriculum which enables the students to apply the knowledge gained to practice in real-life situations. Nursing students can be trained and develop their caring competence along with their lived experiences, with positive faculty modeling, instructors' caring behaviors, and mentoring strategies (1,4,5).

Human caring that is believed can be learned, taught, and measured through nursing education by preceptorship, role-modeling and reinforced throughout the years of study create the student awareness on the importance of caring thus able to develop them into caring practitioners (1). Caring competency was the extent to which the nursing student felt comfortable adapting attitudes

and behaviors necessary for the establishment of a professional relationship between patient and nurse (6). It can be measured with a quantitative tool such as the Nurse-Patient Interaction Scale – 23-Item Nurse Version (CNPI) developed by Cossette, Cote, Pepin, Ricard, and D'Aoust (2006) that is widely used. The tool was derived from Watson's theory of human caring and consisted of twenty-three items that captured behaviors necessary for the successful establishment of the transpersonal, nurse-patient relationship.

Recent studies argued on the notation that caring can be learned and adequate screening is suggested before accepting the potential students into a program to assess their innate caring ability. This was based on the fact that contemporary trends reveal increasing numbers of applicants to nursing programs are more driven by job security and career prospects instead of the desire to care (7). Therefore, it is a major responsibility for nurse educators to teach the caring importance and its value in both classroom and clinical teaching (8).

The caring aspect should be addressed in the emergence of professional nurses in the future. Nursing students who are unaware of the caring importance and lack of caring competence before entering the nursing workforce would be facing a great challenge with the complexity of the healthcare population. Besides, caring has been identified as the indicator of the quality and value of healthcare provision. Nurse educators crucially need to equip the future nursing workforce with caring competence so that they will not be suppressed in the current declining healthcare climate with finite resources (1). Although the beneficial impact of service-learning on the students' attitudes was documented, limited evidence focusing on the effects, in the long run, the caring behavior and student's self-transcendence were found (9). A local study found that "emotional intelligence, psychological ownership, and burnout influence the caring behavior of nurses, and each aspect of the findings are interrelated and mediates on one another" (10, p3200).

Amid rapid medical technological advancement, scarce evidence concerning the nursing students' caring behavior was found in the country. Understanding this issue is critically required because we believed that the discovery of nursing students' caring competency could serve as a learning paradigm for nurse educators to constantly assimilate the caring input in nursing education. Therefore, this study aims to explore the current status of nursing students' caring competency thus to be able to overcome the issue from the root of the nursing workforce. The study objectives were; 1) to determine the current level of caring competency among nursing students in a public nursing college; 2) to distinguish the difference of caring competency across the training years of nursing students, and 3) to examine the relationship between the caring competency with the training years.

MATERIALS AND METHODS

This study employed the quantitative design with a cross-sectional survey. It was conducted in a public nursing college in Penang, Malaysia from December 2017 to February 2018. The study area provides formal training for the basic diploma nursing that will accommodate for the future nursing workforce.

Population and sampling
The study population involves all nursing students enrolled in the basic nursing diploma program in the study setting. A total of 211 nursing students from three different training years were identified whereby they have been exposed to their clinical practicum.

The sample size was determined using the Krejcie and Morgan (1970) formula; N=137 and samples were then recruited using the stratified random sampling to allow the equal proportion of samples according to their training years. Nursing students who were accessible during the period of data collection, voluntarily involve in the study and have experience in their clinical practicum were considered eligible to participate.

Data Collection
This study employed a self-administered questionnaire form in a bilingual form; English/Malay language as English is not the mainstream of communication among study participants. The recruited samples were given brief information on the study purpose, consented, and voluntarily agreed to participate prior to collecting the data. This stage took approximately three months starting from December 2017.

Measures
This study utilizes a self-administered questionnaire form consists of two sections:

Demographic details
Gender, age, race, highest qualification level of education, marital status, years of training, and duration of clinical exposure to gather the information of sample characteristics.

Caring Measurement Tool adopting Caring Nurse-Patient Interaction Scale – 23-Item Nurse Version (CNPI)
Various quantitative tools were identified in literature measuring the nurse's caring competency including the Caring Behaviour Inventory (CBI-42 version), Caring Behavior Assessment (CBA), Caring Ability Inventory (CAI), and Caring Nurse–Patient Interaction Scale (CNPI-23). However, we decided to utilize a widely used tool in both clinical and educational contexts known as the Caring Nurse-Patient Interactions 23-item version (CNPI-23) developed by Cossette, Cote, Pepin,

Ricard, and D'Aoust (2006) based on Watson's theory of human caring. This tool consists of twenty-three items that captured behaviors necessary for the successful establishment of the transpersonal, nurse-patient relationship. The behaviors reflected both relational and clinical-technical dimensions of caring and were representative of professional caring. It utilizes the 5-point Likert scale (1: not at all, 2: a little, 3: moderately, 4: a lot, and 5: extremely) with four caring subscales namely the "Clinical Care" (9 items), "Relational Care" (7 items), "Humanistic Care" (4 items), and "Comforting Care" (3 items) (14). The potential range of total scores for the CNPI is 23 to115. The reported alpha coefficients for the total score ranged from .91 to .95 where the four domains ranged as; 1) clinical care (.82 to .93); relational care (.89 to .91); humanistic care (.64 to .73); and comforting care (.61 to .74).

Reliability and Validity

A pilot study conducted before the actual study indicates an internally consistent instrument ($\alpha=0.854$) and for each sub-theme; Clinical Care (0.707), Relational Care (0.784), Humanistic Care (0.722), and Comforting Care (0.802). has been reviewed by a panel of experts include a director of nursing college, a deputy director of nursing academics, a senior nurse educator, and a nurse manager from the clinical setting for its content validity. The necessary amendment has been made based on the expert review. The pilot study was conducted on 10% of the population to allow final evaluation of the questionnaires and to eliminate any possible limitations. For the stability assessment, the researcher has conducted a test and retest study on a similar 10% study population in the pilot study to determine the accuracy of the instrument. Two distinct occasions of data collection for the test and retesting will provide the possible variation. The less variation an instrument produces in a repeated measurement illustrates its high reliability (12). The test and retest done showed a similar trending of sample responses which indicated the instrument's high reliability.

Statistical Analysis

All data were cleaned, arranged, and computed using SPSS Version 20. Descriptive statistics were performed on all variables and values for measurements were presented as frequency, percentage, and mean ±SD. The caring competency level with the CNPI scale was determined using the mean cut-off points that were referred to as low, satisfactory, and high level (3,13). The data normality test was performed using the Skewness and Kurtosis method and it was found to be normally distributed. Therefore, simultaneous comparisons across years of training and caring competency were performed using the One-way ANOVA. The bivariate Pearson correlational analysis was employed to examine the relationship between the caring behavior and training years. The statistical significance value was determined at $p < 0.05$ for all tests.

Ethical concerns

A letter of approval was granted from the college director of Penang Nursing College before conducting the study [(2) dlm.KKM.KKPP.510-5/1/1 Jld.1]. All participants were given the information on the study and consented with fully autonomous. The questionnaire form was maintained anonymous without individual information disclosed. The data was then kept confidential only for the purpose of study and publication. Hence, any conflict of interest within all parties involved has been avoided.

RESULT

The descriptive analysis was employed to describe the demographic characteristics (N=137). This study involves all-female participants. The age majority group was from the age of 19 to 21-year-old (51.8%). The majority of participants were from the Malay ethnic (95.6%) and the highest educational level was Sijil Pelajaran Malaysia (SPM) with 98 participants (71.5%). From the aspect of training years, the highest proportion was from Year 2; with 60 participants (43.8%), followed by Year 3, 54 participants (39.4%), and finally Year 1 with 23 participants (16.8%) (Table I).

Table I: Demographic profile of the nursing students

The descriptive analysis of the demographic data presents the characteristics of the studied population with the variation of age, ethnicity, educational background, and training years. Data are presented as frequency and valid percents (N=137).

Characteristics		Frequency (f)	Valid Percents (%)
Age	19-21yrs	71	51.8
	22-24yrs	55	40.1
	>25yrs	11	8.0
Race	Malay	131	95.6
	Chinese	1	0.7
	Indian	5	3.6
Educational Level	SPM/SPV	98	71.5
	Certificate	8	5.8
	Diploma	30	21.9
	Degree	1	0.7
Years of training	Year 1	23	16.8
	Year 2	60	43.8
	Year 3	54	39.4

Table II presents a descriptive analysis of the data retrieved from the CNPI-23 scale using the mean score interpretation of low, satisfactory, and high to indicate the caring competency level where Low = 1.00-2.33, Satisfactory = 2.34-3.66, and High= 3.57-5.00. The

Table II: The caring competency of nursing students
The descriptive analysis of the CNPI-23 Scale data using the mean score interpretation of low, satisfactory, and high to indicate the caring competency level by overall mean score, and each caring domain for all training years. Data are presented in mean $\pm$ SD.

	Mean	Year 3	Year 2	Year 1
Overall Mean	3.33 (0.22)	3.53 (0.24)	3.23 (0.20)	3.14 (0.32)
Clinical Care	3.28 (0.28)	3.46 (0.26)	3.21 (0.16)	3.05 (0.30)
Humanistic Care	3.31 (0.35)	3.52 (0.28)	3.20 (0.33)	3.09 (0.34)
Relational Care	3.33 (0.36)	3.51 (0.34)	3.22 (0.28)	3.20 (0.45)
Comforting Care	3.55 (0.46)	3.78 (0.39)	3.37 (0.48)	3.46 (0.42)

* Caring Competency Level: Low = 1.00-2.33, Satisfactory = 2.34-3.66, High= 3.57-5.00

overall mean score for caring competency was 3.33 (SD = 0.28). By training years, the highest mean score of caring competency was Year 3, M = 3.53 (SD = 0.24), followed by Year 2, with the mean score of 3.23 (SD = 0.20), and Year 1, M = 3.14 (SD = 0.32). The analysis performed on each domain of caring competency indicates Comforting Care as the highest mean score; 3.55 (SD = 0.46) and the least mean score was Clinical Care, M = 3.28 (SD = 0.28). Besides, Year 3 students scored the highest score in all caring domains whilst Year 1 scored the least mean in Relational Care, M = 3.09 (SD = 0.34). However, in Comforting Care domain, Year 1 scored the mean of 3.46 (SD = 0.48) compared to Year 2, M = 3.37 (SD = 0.42).

From the one-way ANOVA, the caring competency differs significantly across the training years [F (2,134) = 26.004, p < 0.001). (Moreover, all domains of caring competency indicate significant differences across training years as well (p < 0.001). Meanwhile, from the Pearson correlational analysis result obtained, the caring competency was found to have a significant positive relationship with the training years (r = 0.534, p < 0.001) (Table III).

Table III: The correlational analysis results between caring competency with the training years of nursing students
The Pearson correlation coefficient was performed on the data representing the caring competency level with the training years ($p < 0.05$)

	Measure	1	2
1.	Training Years	-	.534*
2.	Caring Competency Score	.534*	-

* $p < 0.05$.

DISCUSSION

In general, the study has discovered the contemporary finding of caring competency of the future nursing workforce in the local context. The findings were significant as scarce evidence of documented caring competency among nursing students was found nationally. This study revealed a satisfactory score of caring competency which indicates that the current caring knowledge integrated into the curriculum structure has imparted the caring input towards the future nursing workforce. However, there were significant differences in caring competency scores observed across the training years and the caring competency significantly correlates with the training years. These findings were significant and relevant which is comparable to other related studies. The subsequence discussion will provide further details of our study findings.

The level of caring competency among nursing students
Traditionally, nursing was known as a female-oriented profession. With regards to the population of nursing students in the nation, apparently male nursing students are considered to be the minority group in public nursing institutions. However, our current study documented the caring competency of female nursing students. The study findings may be influenced by the woman stereotype which their role of a professional, daughter, wife, and mother, could interfere with the care delivered to patients (13). The difference in terms of ethnicity, age, and marital status was not significant as the group of participants was more likely in a similar character. The similarity in the educational level before entering the nursing program could indicate a similar level of understanding and comprehension of caring knowledge delivered. Students' characteristics including age, ability, and level of prior knowledge, are measures to be considered for effective learning strategies (14). The major variation of demographic characteristics was the years of training which consist of three different training years that have allowed us to distinguish the different levels of caring competency.

The caring competency was the extent to which the nursing students feel comfortable adopting the attitudes and behaviors necessary for a nurse-patient professional relationship establishment (6). Generally, the results provided evidence of a satisfactory caring competency score among nursing students. This finding is parallel to the study in Taif which nurses recognized overall caring behaviors (8). At the time of the study, the respondents have been exposed to the fundamental of caring knowledge for their notional input through lectures, tutorials, and practical sessions. This shows that students demonstrate caring in practice through both physical and interpersonal nursing activities and "they acknowledge the importance of promoting trust and promoting a positive experience as the caring component to make a distinctive difference towards patients' outcomes"

(4, p57). The foundational exposure to professional caring may have provided the impetus for students to begin formulating their ideas of competent caring and to develop self-awareness about their caring interactions with others (6). However, a satisfactory level of caring might not be sufficient enough to provide the foundation of professional caring behavior. Past literature shows that caring competency requires vigilant action that is drawn upon expert knowledge. The possible explanation for the current finding is the duration of clinical practicum that might be insufficient for the students to exercise professional caring behavior. These constraints of time limitation and variation in the clinical setting may hinder their connectedness with patients. The difference in clinical exposure may influence the concepts of caring among nursing students (6). Students grasp the knowledge information through observation, formal teaching input, and role modeling. One of the strategies to improve educational outcomes require efforts to assist students in "regulating their learning through the use of effective learning techniques" (6, p4). Henceforth, another probable explanation for this finding is the insufficient caring knowledge input from related parties. This could involve nurse educators, clinical instructors, local preceptors, and existing nursing staff in the clinical setting through the power of role modeling and mentoring that engage students in caring actions (5). The nursing students' observations and interpretations demonstrated a difference between nursing care and nurse caring (5). Their perception and application of caring elements depend on how they interpret what has been told in class and supervised and observed during clinical exposure.

The complexity and dynamic patients' characteristics hassle the need for competent nurses who are not only technically skilled but able to address the emotional needs to provide congruent nursing care (7). The Caring Nurse-Patient Relationship Inventory (CNPI) utilized for the study has able to project the four main domains of caring competency encompassing the "Clinical Care, Relational Care, Humanistic Care, and Comforting Care" (15). "The clinical care domain highlights the importance of integrating clinical competency that is the technical skills that are formally learned into the behaviors needed to establish a caring relationship between nurse and patient which is highly preferred by patients" (15, p207). However, our study found that Clinical Care contributes to the least mean score and similar to a previous study (6). Technical competency is one of the aspects that need to be addressed critically. Even though they have been exposed to the structured nursing curriculum to meet the need for clinical practice yet the development of competence is likely to be less prominent. Minimal clinical and technical exposure, lack of supervision, and personal insight could be the contributing factors. However, good caring behavior could overcome this matter. A nurse with a caring attitude will strive to deliver the very best nursing care and this includes the self-awareness to develop knowledge and technical skill. Although professional caring may be embedded in the innate ability of the nursing students, yet they may need to become more self-aware and learn to apply their caring ability in nursing (6). Comforting Care is the domain that contributes to the highest mean score for caring competency in this study. This domain was derived from items that address the need for gratification (15). In a possible assumption with regards to this domain, nursing students can identify and respond to the needs of patients with their innate caring ability. It was evidenced that their personal experience reflects their ability to comfort others. A moderate positive correlation occurs between caring ability and the comforting care domain (6).

The difference of caring competency across the training years of nursing students
The current caring competency of the respondents indicated that the professional caring attitude developed throughout the training years. The results indicated that there were differences between years of training in caring competency scores. Year 3 students scored the highest mean for overall mean score and each domain in caring competency compared to other training years and significant differences were found between them across all competency domains. This finding is similar to a study that found a significantly higher mean score for fourth-year nursing students as compared to the first semester students (6).

The relationship between the caring competency and the training years
The evidence of the positive relationship between caring competency and training years was also observed in this study (p < 0.001). The duration of training years and clinical exposure remains the main contributing factor that influenced the caring competency of nursing students. Third-year students have gone through most of the theoretical phase and had experienced multiple tasks with the dynamic patient condition compared to other years. Besides, the significant findings of this study indicate that the professional caring attitude developed throughout the training years. Numerous studies revealed that students acquire knowledge of professional caring and build technical competencies as they progress throughout the program (1,14). The more they learned, the development of professional caring will be established. The fact is that the more time they expose to caring knowledge and experience, the more they could achieve in caring competency score as underlined in the theory 'From Novice to Expert' by Benner (1982). It is, therefore, crucial to investigate "how caring practices are taught, prioritized, and evaluated in the baccalaureate curriculum" (5, p8). The complexity and dynamic patients' characteristics hassle the need for competent nurses who are not only technically skilled but able to address the emotional needs to provide congruent nursing care (16).

Limitations

The sample size is limited to a single college only which our study generalization on the whole population of nursing students in the region. Besides, the unavailability of male participants inhibits the comparison of caring competency between gender even though there is a significant increase in male enrolment into the nursing program within public nursing colleges. This condition impedes the comparison of caring competency between the gender variable. Besides, the variation in clinical practicum duration and placement may reflect on the caring competency perceived by the nursing students.

Directions for Future Research

Future research is needed to allow further exploration of the caring competency of nursing students. A bigger-scale study with the involvement of both genders could eliminate our present limitation. We also suggest the qualitative approach that may permit the discovery of their unique perspective of caring and longitudinal study that could illustrate contributing factors towards the positive changes in caring practices.

CONCLUSION

The most essential need of the nursing profession within the national healthcare delivery system is the production of highly skilled and competent nurse graduates who can incorporate professional caring in practice to provide high-quality and holistic care. We hope that our novel findings could contribute to establish an adequate level of caring competency for nursing students upon graduation and appraise the need for the overall improvement in advancing the teaching-learning process related to caring in nursing education to produce professional nurses' who are technically skilled, highly competent with outstanding caring attitudes.

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