

Assessment of the Development of Nursing During Undergraduate Studies

Magdalena Brodowicz-Król*

Department of Nursing and Public Health, Institute of Health Sciences,
College of Medical Sciences, University of Rzeszów, Rzeszów, Poland.

Corresponding Author: Magdalena Brodowicz-Król, Department
of Nursing and Public Health, Institute of Health Sciences, College of
Medical Sciences, University of Rzeszów, Rzeszów, Poland.

Received: 📅 2026 June 02

Accepted: 📅 2026 June 22

Published: 📅 2026 July 02

Abstract

Background: In nursing education, considerable importance is attached to monitoring acquired skills that enable a holistic approach to patient care. The development of holistic competencies is defined as an enhancement of professionalism in nursing education.

Aim: To assess the development of holistic competencies during academic education among undergraduate nursing students.

Material and methods: The study was conducted among nursing students at the Medical University of Lublin. The respondents were aged 19–37 years. The research method applied in the study was a diagnostic survey. The research tool used was the Holistic Nursing Competence Scale (HNCS). The scale consists of two subscales and contains a total of 36 statements. A database was created and statistical analyses were performed using Statistica 9.1 software (StatSoft, Poland).

Ethical considerations: The research project received a positive opinion from the Bioethics Committee of the Medical University of Lublin, approval no. KE-0254/112/2014.

Findings: The holistic competencies of the surveyed students reached moderate levels. In the area of ethical orientation to practice, a statistically significant difference was observed between subsequent years of study ($p < 0.001$): the higher the year of study, the lower the values of these competencies. Sociodemographic variables (age) did not correlate with nursing holistic competencies or with the development of professional competencies. Analysis of the regression model indicates that team nursing care has a beneficial effect on professional development.

Conclusion: The conducted study is an original project illustrating the development of holistic competencies among nursing students in relation to the stage of education. The results allow the conclusion that nursing students achieved moderate levels of holistic competencies.

Keywords: Student, Nursing, Competencies, Holistic Competencies

1. Introduction

Concern for the human being and their health is the essence of nursing. It is unquestionable that there is a need to assess the development of nursing competencies. Perceiving the patient in a holistic manner, that is, as an individual functioning at least in biological, social, psychological, spiritual, and cultural dimensions, in accordance with ethical principles, is one of the dimensions of the development of holistic competencies. Holistic competencies in nursing care mean treating the patient as a complex individual embedded in an environmental and social context, but also perceiving the patient as a subject in relationship with the nurse. In professional practice, holistic competencies enable the nurse to define the patient's phenomenon by describing it in the

following terms: "knows who the patient is," "knows what is wrong with them," "knows what they like," and "knows how to help them." In defining individualized nursing care, V. Henderson assumed that it "recognizes the uniqueness of the human being, their individuality, personality, and human weaknesses. Individualized care will offer patients different ways of meeting their needs, enabling choice and involving nurses in listening rather than talking." At present, intensive development of the nursing profession can be observed in Europe. New tasks have been introduced into nurses' responsibilities, requiring the acquisition of holistic competencies during education. After graduation, nursing graduates are expected to possess competencies enabling them to independently perform their professional duties [1-

5]. Therefore, the education of students becomes particularly important, as it should provide the competencies necessary for efficient and safe practice. The development of nurses' holistic competencies should be evidence-based; however, analysis of the literature reveals a certain deficiency in this area. Therefore, a longitudinal study was undertaken to examine nurses' holistic competencies. A review of the international literature indicates that studies on the development of nursing competencies were conducted in Australia by Levett-Jones and Lathlean. Researchers in Taiwan conducted studies evaluating holistic competencies among nursing students at the beginning of the educational process and among those just before their graduation examination. Holistic nursing competencies are realized, among other things, through a patient-centered approach, identifying the patient's expectations regarding nursing care, proposing interventions that take into account the patient's balance and homeostasis, and establishing comprehensive nursing care.

2. Background

Holism in nursing care is based on a comprehensive, integrated perception of the patient as a whole person, not merely of the diseases negatively affecting their well-being. The characteristics of holistic nursing care include the nurse focusing not only on instrumental activities but, above all, on creating a caring environment and striving professionally to ensure patient safety and psychosocial stability. In professional relationships between the nurse and the patient, the model of the therapeutic process should be evident, with both parties engaged and both benefiting. This means not only mutual receiving, but also giving, and meeting human needs important for life, health, and human development [6,7]. Holistic competencies of nurses include respect for patients' cultural differences and the establishment of relationships with patients in accordance with the humanistic aspects of Jean Watson's theory. As demonstrated in the studies by Levett-Jones and Lathlean, holistic competencies enable the nurse to define the patient's phenomenon by describing it in the following terms: "knows who the patient is," "knows what is wrong with them," "knows what they like," and "knows how to help them." Clinical competencies among nursing students, both those at the beginning of the educational process and those just before the graduation examination, were examined by Liou and Ching-Yu. It was noted that the educational system places particular emphasis on shaping specialized holistic competencies [8-10]. Research shows that the educational process should pay special attention to the development of both professional and general competencies. Holistic competencies in nursing are treated as a set of characteristics necessary for the provision of nursing care. They are more than a collection of competencies; they are personal characteristics of conduct and interests.

2.1. Aim

To assess the development of holistic competencies during academic education among undergraduate nursing students.

2.2. Design

A longitudinal study lasting three years was applied in the project, from the first to the third year of undergraduate nursing studies. The same group was studied three times, after the completion of each year of study, namely the first, second, and third years. The research method applied in the study was a diagnostic survey.

2.3. Setting

The study was conducted between 2013 and 2016 at the Faculty of Health Sciences of the Medical University of Lublin.

2.4. Research tools

The Holistic Nursing Competence Scale (HNCS) was used in the study to assess holistic nursing competencies. It consists of two subscales and contains 36 statements in total. HNCS A contains 7 items and evaluates nurses' behavior in everyday life. HNCS B contains 29 items and evaluates holistic nursing competencies. In both subscales, a seven-point Likert scale was used.

HNCS B contains 29 items and assesses holistic nursing competencies in four areas:

- **HNCS EM** – education and management,
- **HNCS EO** – ethical orientation to practice,
- **HNCS NC** – nursing care in a team,
- **HNCS PD** – professional development.

The HNCS describes general and specialized nursing skills, as well as competencies in education and management, professional ethics, and professional development. A procedure for adaptation and validation of the Holistic Nursing Competence Scale was carried out, and permission to use the scale was obtained from its authors, Miyuki Takase and Sachiko Teraoka, who developed the scale in 2011. Studies demonstrated that the two areas included in the Holistic Nursing Competence Scale were characterized by high reliability (Cronbach's beta coefficient of 0.921 for section A and 0.962 for section B).

2.5. Procedure of data collection

The authors designed the study themselves. The inspiration for the research arose from their own professional experience in nursing. The study included 90 students and was carried out during the 2013–2016 educational cycle at the Faculty of Health Sciences, Medical University of Lublin. A three-year longitudinal design was applied, covering the first to third year of undergraduate nursing studies. The same group was studied three times after the completion of each academic year. The first study was conducted after completion of theoretical and practical classes in the first year, the second after completion of theoretical and practical classes in the second year, and the third after completion of all theoretical and practical classes in the third year. Student participation was voluntary, free of charge, and anonymous. The students were surveyed without the presence of teachers, and no one influenced their answers. Completion of the questionnaire took approximately 15 minutes.

2.6. Ethical aspects

The project received a positive opinion from the Bioethics Committee of the Medical University of Lublin, approval no. KE-0254/112/2014. Permission to conduct the study was also obtained from the Dean of the Faculty of Health Sciences of the Medical University of Lublin, and nursing students gave their consent to participate. The study was conducted in accordance with the Declaration of Helsinki of the World Medical Association: Ethical Principles for Medical Research Involving Human Subjects.

2.7. Analysis and rigour

The database was created and statistical analyses were performed using Statistica 9.1 software (StatSoft, Poland). The following tests were used to analyze the collected data: the Mann-Whitney U test (Z), applied to examine differences between two groups, and Spearman's rank correlation (R),

used to assess relationships between variables. The level of significance was set at $p < 0.05$, indicating statistically significant differences or relationships.

3. Results

3.1. Participants

The study involved 90 students from whom complete data from all three years of the study were collected. There were 86 women (95.56% of the total) and 4 men (4.44% of the total), aged between 19 and 37 years (age recorded in the first year of study). Within the study group, five subgroups were distinguished (students who participated in the three-year study). The distribution of the entire group of 90 participants who took part in all three surveys is presented in the table below. The study group was homogeneous in terms of age.

Independent variables	N	%
Gender		
Women	86	95.56
Men	4	4.44
Age*		
19 years	5	5.56
20 years	64	71.11
21 years	10	11.11
22 years	6	6.66
23 years and over	5	5.56
Total	90	100.00

* age determined at the beginning of the study

Table 1: Characteristics of the Study Group of Students who Participated in all three Surveys

3.2. Development of nurses' holistic competencies after the first, second, and third year of studies

Table 2 presents the development of holistic nursing competencies in the scales of education and management (HNCS EM), ethical orientation to practice (HNCS EO), nursing care in a team (HNCS NC), and professional development (HNCS PD) among respondents participating in the three-year study cycle. Possible scores in these components ranged from 1 to 7. The analysis revealed statistically significant changes over the three-year cycle in three of the four analyzed scales. In the case of HNCS EO, respondents achieved a score of $M = 5.20$ after the first year, followed by a slight decrease to $M = 5.09$ after the second year (a difference not statistically significant compared with the first year), and then a marked decrease to $M = 4.66$ after the third year. A statistically significant difference was found between subsequent years in this scale ($p < 0.001$); post-hoc analysis showed significant differences between the first and third years and between the second and third years. A similar distribution of results was found for HNCS NC. In this

case, respondents obtained $M = 4.94$ after the first year, $M = 4.89$ after the second year, and $M = 4.57$ after the third year.

Differences between subsequent years were statistically significant ($p = 0.019$), and post-hoc analysis showed significant differences between the first and third years and between the second and third years. A similar downward trend across the years was also observed for HNCS PD. Here, students scored $M = 5.05$ after the first year, $M = 4.94$ after the second year, and a markedly lower $M = 4.63$ after the third year. Differences between the years were statistically significant ($p = 0.015$), and post-hoc analysis, similarly to the previously cited scales, showed significant differences between the first and third years and between the second and third years. No such changes were observed in HNCS EM, where the results after each year of education were similar. Respondents scored $M = 4.65$ in the first year, $M = 4.69$ in the second year, and a slightly lower $M = 4.49$ in the third year. In this case, the differences between consecutive years were not statistically significant ($p = 0.357$).

Variable	Year of study	M	Me	SD	Statistical analysis
HNCS EM	1	4.65	4.67	1.02	F(2,178) = 1.036; p = 0.357
	2	4.69	4.56	0.85	
	3	4.49	4.33	0.97	
HNCS EO	1	5.20	5.33	0.98	F(2,178) = 8.423; p < 0.001; post-hoc: 1-3***, 2-3**
	2	5.09	5.11	0.82	
	3	4.66	4.50	0.97	
HNCS NC	1	4.94	5.00	0.87	F(2,178) = 4.071; p = 0.019; post-hoc: 1-3*, 2-3*
	2	4.89	4.82	0.83	
	3	4.57	4.36	0.96	
HNCS PD	1	5.05	5.00	0.95	F(2,178) = 4.269; p = 0.015; post-hoc: 1-3**, 2-3*
	2	4.94	4.75	0.93	
	3	4.63	4.75	0.97	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 2: Development of Holistic Nursing Competencies (HNCS EM, HNCS EO, HNCS NC, HNCS PD) During The 3-Year Undergraduate Education Cycle

3.2.1 Legend

M – mean, Me – median, SD – standard deviation, HNCS EM – education and management, HNCS EO – ethical orientation to practice, HNCS NC – nursing care in a team, HNCS PD – professional development

3.3. Comparative Analysis of Holistic Competencies Among the Surveyed Students

Descriptive statistics were collected for students' scores obtained in the first, second, and third year of the study. The analyses concern all students examined in the first year (N = 103), all examined in the second year (N = 118), and all examined in the third year (N = 104). Ultimately, 90 individuals who participated in all three years of the study were included in the final analysis [11-14]. Among the 103 students examined in the first year, the highest results in the components of holistic professional competencies were obtained in the category of ethical orientation to practice (M = 5.24, Me = 5.33), slightly lower in professional development

(M = 5.05, Me = 5.00) and nursing care in a team (M = 4.97, Me = 5.00), and the lowest in education and management (M = 4.71, Me = 4.67). When analyzing the results of holistic professional competencies among the 118 students examined in the second year, the distribution of results was similar to that obtained by the first-year group. The highest results were observed in ethical orientation to practice (M = 5.05, Me = 5.06), slightly lower in professional development (M = 4.92, Me = 4.75) and nursing care in a team (M = 4.86, Me = 4.82). The lowest scores were recorded in education and management (M = 4.61, Me = 4.56). In the group of 104 students examined after the third year, similar results were obtained in ethical orientation to practice (M = 4.59, Me = 4.44) and professional development (M = 4.57, Me = 4.50), while slightly lower results were noted in nursing care in a team (M = 4.50, Me = 4.36). The lowest results, similarly to the first and second year, were recorded in education and management (M = 4.43, Me = 4.33).

Year of study	Variable	N	M	Me	SD
I	HNCS EM	103	4.71	4.67	0.98
	HNCS EO	103	5.24	5.33	0.95
	HNCS NC	103	4.97	5.00	0.83
	HNCS PD	103	5.06	5.00	0.91
II	HNCS EM	118	4.61	4.56	0.85
	HNCS EO	118	5.05	5.06	0.79
	HNCS NC	118	4.86	4.82	0.80
	HNCS PD	118	4.92	4.75	0.87
III	HNCS EM	104	4.43	4.33	0.98
	HNCS EO	104	4.59	4.44	0.97
	HNCS NC	104	4.50	4.36	0.96
	HNCS PD	104	4.57	4.50	0.96

Table 3: Determinants and Development of Holistic Competencies Among the Surveyed Students after the First, Second, and Third Year of Studies

• Legend

N – number of respondents, M – mean, Me – median, SD – standard deviation, HNCS EM – education and management, HNCS EO – ethical orientation to practice, HNCS NC – nursing care in a team, HNCS PD – professional development

3.4. Regression analysis: Predictors of professional development

An attempt was made to create a regression model (enter method) describing the component of professional development (HNCS PD) based on the predictors: education and management (HNCS EM) and nursing care in a team (HNCS NC). The obtained model proved to fit the data well ($F(3,64) = 18.568$, $p < 0.001$) and explained 83.3% of the variance in professional development scores (HNCS PD). Statistically significant predictors were education and management (HNCS EM) and nursing care in a team (HNCS NC), with the latter variable being the stronger predictor ($\beta = 1.166$, $p < 0.001$) than education and management (HNCS EM) ($\beta = 0.284$, $p = 0.024$). Interpreting the obtained coefficient values, it can be stated that the higher the score in the nursing care in a team variable (HNCS NC), the higher the score in professional development (HNCS

PD), and the higher the score in education and management (HNCS EM), the lower the score in professional development (HNCS PD). A similar analysis was performed for the data obtained after the second year of education. In this case, the model also proved to fit the data well ($F(3,64) = 146.281$, $p < 0.001$) and explained 86.7% of the variance in professional development scores (HNCS PD). However, here the only statistically significant predictor was nursing care in a team ($\beta = 1.057$, $p < 0.001$): higher scores in this variable corresponded to higher professional development scores (HNCS PD). The remaining variable included in the model (education and management) was not statistically significant [15-18]. Similar results were obtained for the regression model based on data collected after the third year of study. Again, the model proved to fit the data well ($F(3,64) = 175.250$, $p < 0.001$) and explained 88.6% of the variance in professional development scores (HNCS PD). Here as well, the only significant predictor among those included in the model was nursing care in a team ($\beta = 0.758$, $p < 0.001$): higher scores in this variable corresponded to higher professional development scores (HNCS PD). The remaining variable included in the model (education and management) was not statistically significant [19-20].

First year

HNCS

PD

Adjusted $R^2 = 0.833$, $F(3,64) = 18.568$, $p < 0.001$

Predictor	B	β	t	p
HNCS EM	-0.272	-0.284	-2.319	0.024
HNCS NC	1.274	1.166	9.537	<0.001

Second year

HNCS

PD

Adjusted $R^2 = 0.867$, $F(3,64) = 146.281$, $p < 0.001$

Predictor	B	β	t	p
HNCS EM	-0.147	-0.137	-1.308	0.195
HNCS NC	1.169	1.057	10.074	<0.001

Third year

HNCS

PD

Adjusted $R^2 = 0.886$, $F(3,64) = 175.250$, $p < 0.001$

Predictor	B	β	t	p
HNCS EM	0.190	0.196	1.415	0.162
HNCS NC	0.762	0.758	5.490	<0.001

Table 5: Results of Regression Analysis of Professional Development (HNCS PD), Predictors: Education and Management (HNCS EM), Nursing Care in A Team (HNCS NC), Based on the Results of Students After the First, Second, and Third Year of Studies

• Legend

HNCS EM – education and management, HNCS NC – nursing care in a team, HNCS PD – professional development, F – F-test result, p – statistical significance, adjusted R^2 – model

fit, B, beta – regression coefficients, t – t-test result

4. Discussion

4.1. Participants

The study included 90 students over a period of three years. The majority of respondents were women (95.56%), while men constituted a small proportion of the sample (4.44%). The respondents were aged 19–37 years (age at the first year of study). The study group was homogeneous in terms of age. Similar studies were carried out in Taiwan, where the study group consisted of 340 nursing students followed over two years. Students at the beginning of the educational process and those before the diploma examination were examined. The age of the study participants ranged from 21 to 32 years (age at the beginning of the study). Not all participants took part in the two-year study. Similarly, in the study by Liou and Cheng, the majority of respondents were women.

4.2. Development of Nurses' Holistic Competencies After the First, Second, and Third Year of Studies

The presented results regarding the development of holistic competencies among the surveyed students after the first, second, and third year of study are comparable to the results of research conducted in China and Belgium. Liou and Cheng evaluated clinical competencies among nursing students who were beginning the educational process and those who were completing it, namely students before the diploma examination. Their findings showed no differences in professional behaviors and general competencies, whereas significant differences were found in competencies essential for care (e.g., oral medication administration) and specialized nursing competencies. In studies conducted in Belgium, it was assumed that nurses' competencies are an important factor in ensuring quality, safety, and cost-effective health care. It was also recognized that clinical competencies assessed apart from the clinical context in which decisions are made should be understood as functional adequacy and the ability to integrate knowledge and skills with attitudes and values in specific practical situations. In patients' assessment of such competencies, greater importance was attributed to cognitive and affective aspects than to psychomotor ones. The results of the present study show a different perspective of nursing students in the analysis of holistic competencies. Relationships were demonstrated within the three-year cycle in three of the four analyzed dimensions. In the case of ethical orientation to practice, respondents obtained a mean score of $M = 5.20$ after the first year, followed by a slight decrease after the second year ($M = 5.09$), and a further decrease after the third year ($M = 4.66$). A strong association was found between the results across subsequent years ($p < 0.001$), especially between the first and third year and between the second and third year. Similar results were obtained in the dimension of nursing care in a team. A relationship was shown between subsequent years ($p = 0.019$), particularly between the first and third year and between the second and third year.

4.3. Comparative Analysis of Holistic Competencies Among the Surveyed Students

Numminen et al., analyzing the development of nurses' competencies in terms of the quality and frequency of

activities in clinical medical fields (surgical, pediatric, obstetric, gynecological, and psychiatric) using the Nurse Competence Scale (NCS), assessed the level of nurses' competencies as good. The quality of performance was positively correlated with the frequency of performance. Across all seven categories of competencies, the quality of nurses' performance was at a good level, with mean VAS scores ranging from 58.1 to 75.7. The NCS is a general instrument for assessing nursing competencies, identifying attributes that are crucial for effective nursing care. Interesting research was also conducted by Salminen et al. regarding determinants of nursing students' competencies. Students achieved a high level of professional competence in interactions with the teacher. A very high level of competence was observed in teacher–student relationships, whereas a very low level was associated with teaching skills. Among the detailed components of competence, the lowest level was associated with teaching decision-making and encouraging students to continuously seek new knowledge. Nursing competencies increase with age and professional experience. In the present study, over the three-year period, students achieved the highest scores in the category of ethical orientation to practice and in professional development. Referring to the study by Salminen et al., holistic competencies in Poland appear to be at a higher level than in Finland. The analysis of the present results indicates that among the students surveyed in the first and third year, the distribution of results in holistic competencies was similar to that obtained by the first-year group.

4.4. Regression Analysis: Predictors of Professional Development

Next, the relationship between sociodemographic variables and the holistic competencies of the surveyed students is presented. Analysis of the literature indicates that Murphy et al., examining the impact of nursing education on caring behaviors among nursing students in three age groups (17–25, 26–35, and 36–45 years) during a three-year undergraduate nursing program, showed that the youngest respondents (17–25) had lower nursing competencies than middle-aged respondents (26–35) ($p < 0.015$). In the 36–45 age group, however, no significant difference was found compared with the other two groups. International literature reports that age and length of professional experience have only a weak influence on the level of holistic nursing competencies. The results of the present study indicate that sociodemographic variables, including age and gender, are not significantly associated with the process of shaping holistic competencies among nursing students. The final aspect of the statistical analyses undertaken in this study was regression analysis. An attempt was made to determine the influence of various factors on the development of holistic competencies. Reference may be made to studies conducted by researchers from Poland and Italy concerning the development of caring competencies. That study described concepts of care as perceived by first-year nursing students before and after their first clinical classes.

Students entered nursing education with a vision of care

at both the theoretical and practical level. The results indicate that students began their nursing education with a deeply humanistic vision of caring, both conceptually and behaviorally, in terms of treating the human being as a subject. The findings suggest the need to support and encourage students during the educational process so that they may build strength in professional development. Possible barriers to providing high-quality care identified in the study particularly concerned external factors related to organizational problems in health care systems. Time was perceived by students as a very important descriptor of the concept of being a caring nurse. Time was also identified as a major barrier in care. Time availability is a significant problem due to staff shortages and increasing bureaucracy at both the university and clinical care levels. In the present study, the strongest predictor of shaping holistic competencies was nursing care in a team. Furthermore, it was shown that the higher the score in the nursing care in a team variable, the higher the professional development score; likewise, the higher the score in education and management, the lower the professional development score. Similar conclusions were drawn after the second and third year of education, for which similar analyses were performed.

4.5. Limitations

The study has several limitations. In terms of implementation, it was conducted at only one university; therefore, there is no point of reference or comparison with other centers carrying out the same research project. Moreover, students' familiarity with the questionnaire in subsequent years of the study may have affected the extent to which they reread and understood it thoroughly when completing it again.

5. Conclusion

The conducted study and the obtained results allow the conclusion that the holistic competencies of undergraduate students reached moderate levels during the three-year educational cycle. The development of nursing students' holistic competencies in relation to the stage of education was differentiated. In the area of ethical orientation to practice, a statistically significant difference was observed between subsequent years of study ($p < 0.001$): the higher the year of study, the lower the values of these competencies. No statistically significant differences were observed in the remaining areas. The results show that the analysis of holistic competencies during academic education demonstrated that the highest scores were obtained in the category of ethical orientation to practice, slightly lower in professional development and nursing care in a team, and the lowest in education and management. Secondly, the collected data indicate that sociodemographic variables, such as age and gender, are not associated with the process of shaping the professional competencies of the surveyed nursing students. No statistically significant differences were observed in any of the analyzed areas. Additionally, regression analysis demonstrates that the strongest predictor of holistic competencies is nursing care in a team. It was shown that the higher the score in the nursing care in a team variable, the higher the professional development score, and that the

higher the score in education and management, the lower the professional development score. Similar conclusions were reached after the second and third year of education.

References

1. Smith, S. A. (2014). Mindfulness-based stress reduction: An intervention to enhance the effectiveness of nurses' coping with work-related stress. *International journal of nursing knowledge*, 25(2), 119-130.
2. Henderson V. The concept of nursing. (2006). *Journal of Advanced Nursing*, 53, 21-31.
3. Levett-Jones, T., & Lathlean, J. (2009). The framework of competences. Results from affiliation. *International Journal of Nursing Studies*, 18(20), 28-35.
4. Liou, S. R., & Cheng, C. Y. (2014). Developing and validating the Clinical Competence Questionnaire: A self-assessment instrument for upcoming baccalaureate nursing graduates. *Journal of Nursing Education and Practice*, 4(2), 56.
5. Faithfull, S., Samuel, C., Lemanska, A., Warnock, C., & Greenfield, D. (2016). Self-reported competence in long term care provision for adult cancer survivors: A cross sectional survey of nursing and allied health care professionals. *International journal of nursing studies*, 53, 85-94.
6. Norman, I. J., Watson, R., Murrells, T., Calman, L., & Redfern, S. (2002). The validity and reliability of methods to assess the competence to practise of pre-registration nursing and midwifery students. *International journal of nursing studies*, 39(2), 133-145.
7. Smith, S. A. (2012). Nurse competence: A concept analysis. *International journal of nursing knowledge*, 23(3), 172-182.
8. Shin, S. R., & Eschiti, V. S. (2005). East meets west: a search for holism in Korean nursing practice. *Journal of Holistic Nursing*, 23(3), 356-362.
9. Faithfull, S., Samuel, C., Lemanska, A., Warnock, C., & Greenfield, D. (2016). Self-reported competence in long term care provision for adult cancer survivors: A cross sectional survey of nursing and allied health care professionals. *International journal of nursing studies*, 53, 85-94.
10. Norman, I. J., Watson, R., Murrells, T., Calman, L., & Redfern, S. (2002). The validity and reliability of methods to assess the competence to practise of pre-registration nursing and midwifery students. *International journal of nursing studies*, 39(2), 133-145.
11. Cowan, D. T., Norman, I., & Coopamah, V. P. (2005). Competence in nursing practice: a controversial concept—a focused review of literature. *Nurse education today*, 25(5), 355-362.
12. Garside, J. R., & Nhemachena, J. Z. (2013). A concept analysis of competence and its transition in nursing. *Nurse education today*, 33(5), 541-545.
13. Defloor, T., Van Hecke, A., Verhaeghe, S., Gobert, M., Darras, E., & Grypdonck, M. (2006). The clinical nursing competences and their complexity in Belgian general hospitals. *Journal of Advanced Nursing*, 56(6), 669-678.
14. Numminen, O., Meretoja, R., Isoaho, H., & Leino-Kilpi, H.

- (2013). Professional competence of practising nurses. *Journal of clinical nursing*, 22(9-10), 1411-1423.
15. Salminen, L. K., Melender, H. L., & Leino-Kilpi, H. (2009). The competence of student nurse teachers. *International Journal of Nursing Education Scholarship*, 6(1).
16. Brodowicz, M., & Zarzycka, D. (2015). Cultural adaptation and psychometric validation of the holistic nursing competence scale (HNCS)–a preliminary report. *Nursing in the 21st Century*, 14(3 (52)), 22-27.
17. Murphy, F., Jones, S., Edwards, M., James, J., & Mayer, A. (2009). The impact of nurse education on the caring behaviours of nursing students. *Nurse Education Today*, 29(2), 254-264.
18. Meretoja, R. (2003). Nurse competence scale. In *ANNALES-UNIVERSITATIS TURKUENSIS SERIES D* (Vol. 578). Turun yliopisto.
19. Dobrowolska, B., & Palese, A. (2016). The caring concept, its behaviours and obstacles: perceptions from a qualitative study of undergraduate nursing students. *Nursing inquiry*, 23(4), 305-314.
20. Takase, M., & Teraoka, S. (2011). Development of the holistic nursing competence scale. *Nursing & health sciences*, 13(4), 396-403.