

ORIGINAL ARTICLE

Assessing Nurses' Gerontological Care Competency: A Cross-Sectional Study on Affecting Factors

Hemşirelerin Gerontolojik Bakım Yeterliliklerinin Değerlendirilmesi: Etkileyen Faktörler Üzerine Kesitsel Bir Çalışma

 Betül Çakmak¹,  Merve Nur Öz²

¹Department of Nursing, Ankara Yıldırım Beyazıt University, Faculty of Health Sciences, Ankara, Türkiye

²Department of Nursing, Ankara Polatlı Duatepe State Hospital, Ankara, Türkiye

Abstract

Introduction: Elderly individuals may experience a decline in functionality with advancing age, a significantly higher mortality rate due to multimorbidity, and an increase in dependency. Therefore, it is essential for nurses to conduct a holistic care assessment of elderly individuals and possess an adequate level of gerontological nursing knowledge.

Methods: This cross-sectional study was conducted at a hospital in Türkiye between November and December 2024. The sample of the study consisted of nurses. (n=115). Data were collected through an online questionnaire method using an individual information form and Gerontological Nursing Competence (GeroNursingCom) instrument. The data were analyzed using the Mann-Whitney U test, Kruskal-Wallis H, Spearman's correlation analysis, and binary logistic regression.

Results: 87.8% of the participants (n=101) were women, 80.9% (n=93) were graduates of a bachelor's degree, and 23% (n=27) had received training in geriatrics or gerontology. It was determined that nurses with a postgraduate degree, nurses who had received training in geriatrics or gerontology, and nurses who had more experience in providing care to geriatric individuals had significantly higher scores in all sub-dimensions ($p<0.05$). Nurses who were satisfied with older adult care had significantly higher competencies in end-of-life care ($p<0.05$). In the Spearman correlation analysis of the 11 sub-dimensions of the scale, all sub-dimensions showed a positive, weak/moderate, and statistically significant relationship with each other ($p<0.05$).

Discussion and Conclusion: It is recommended to support policies and educational programs for the development of gerontology nursing.

Keywords: Competence; Gerontology; Nurse; Nursing care

According to World Population Prospects Reports, by the late 2070s, the number of persons at ages 65 years and higher globally is projected to reach 2.2 billion, surpassing the number of children (under age 18).^[1]

Cite this article as: Çakmak B, Öz MN. Assessing Nurses' Gerontological Care Competency: A Cross-Sectional Study on Affecting Factors. Lokman Hekim Health Sci 2025;5(3):242–248.

Correspondence: Betül Çakmak, Asst. Prof. Ankara Yıldırım Beyazıt Üniversitesi, Sağlık Bilimleri Fakültesi, Hemşirelik Bölümü, Ankara, Türkiye

E-mail: betulglchms@gmail.com **Submitted:** 29.03.2025 **Revised:** 08.04.2025 **Accepted:** 24.07.2025



OPEN ACCESS This is an open access article under the CC BY-NC license (<http://creativecommons.org/licenses/by-nc/4.0/>).



With advancing age, the likelihood of multimorbidity increases, leading to increased dependency and functional impairment becoming more prominent issues among the elderly.^[2] Thus, it is important to identify the physiological changes and disease symptoms that occur in older people due to other factors and to assess older people as a whole.^[3] However, the complexity of existing health problems, the challenges of diagnostic processes, and the inclination of older people to deliberately hide or deny their health problems make the work of health professionals difficult.^[4,5] Healthcare professionals must possess adequate, up-to-date, and comprehensive knowledge to effectively treat and care for older adults.^[6–8]

As a new and constantly evolving field, gerontological nursing plays a critical role in geriatric health care. As constituting the members of the geriatric health care team, gerontological nurses are responsible for monitoring the independence of older persons, maintaining planned treatments, planning, implementing, and evaluating the outcomes of an individualized, multidimensional nursing care process.^[8,9] They assess the elderly through interviews, history taking, observation, and detailed assessments based on gerontological dimensions to determine care needs and provide appropriate nursing interventions.^[10] The literature indicates that only a small number of nurses choose to specialize in gerontology and that nurse educators play a significant role in guiding nurses' career choices.^[7,11] The main reasons for this include a lack of awareness of the field of gerontology, deficiencies in postgraduate educational programs, a shortage of faculty, and inadequate levels of knowledge among nurses about caring for older adults.^[5,12] Therefore, it is emphasized that the gerontological nursing workforce should be strengthened and that the number and scope of the relevant educational programs that aim at enhancing the competencies of nurses should be enhanced.^[11,13] The line of studies assessing the impact of gerontological knowledge levels suggest that the nurses with higher knowledge contribute significantly to improving the well-being of older adults.^[14,15] That said, research on gerontological nursing is currently insufficient and no studies have been found in Türkiye in this regard. Therefore, this study was conducted to assess the gerontological competence of nurses working in a district state hospital with 300 beds in Türkiye and to identify the factors influencing it. The aim of the study is to assess the gerontological competence of nurses working in a hospital in Türkiye and to identify the factors influencing it.

Materials and Methods

The Study Place and Design

This study was carried out at the State Hospital in Polatlı, Ankara on the nurses between November 30, 2024, and December 30, 2024. It is designed as a descriptive and cross-sectional study.

This is a descriptive and cross-sectional study.

This study sought answers to the following research questions:

1. What are the gerontological competency levels of nurses?
2. What variables affect nurses' gerontological competence?

Sample of the Study

The nurses employed at a district State Hospital in Ankara, Türkiye were selected for the study. Study was conducted in between November 30, 2024, and December 30, 2024, a total of 176 nurses who met the inclusion criteria (nurses who had been providing health care services to adults for at least one year and who voluntarily agreed to participate). 61 nurses did not agree to participate in the study or did not complete the form. At the end of the study, a post hoc power analysis conducted using G*Power version 3.0.10 indicated that the sample size of 115 nurses yielded a statistical power of 90.7%, based on a 5% significance level and the specified effect size.

Data Collection Tools

Two data collection instruments were utilized in the study: 1- Descriptive Information Form (DIF), 2- Gerontological Nursing Competence Instrument (GeroNursingCom).

Descriptive Information Form (DIF)

The Descriptive Information Form (DIF), prepared by the researchers based on a literature review, includes 10 questions inquiring into the following: age, education level, and whether the participant has received training in geriatrics or gerontology.^[16,17]

Gerontological Nursing Competence Instrument (GeroNursingCom)

GeroNursingCom, developed by Tohmola et al.^[18] in 2021, consists of 53 items and 11 sub-dimensions. The instrument is a 4-point Likert type. The total score ranges from a minimum of 53 to a maximum of 212, with higher scores indicating a higher level of competence. The Turkish adaptation was carried out by Aslan et al.^[19] in 2024.

Statistical Analysis

Statistical analyses were conducted using IBM SPSS for Windows Statistics 27.0 (Armonk, NY, USA). For the measurements that followed normal distribution, parametric methods were employed, and comparisons among three or more independent groups were performed using the ANOVA test. Non-parametric methods were applied to the measurements that did not conform to normal distribution. The comparisons between two independent groups were made using the Mann-Whitney U test, while comparisons between three or more independent groups were made employing the Kruskal-Wallis H test. For the variables showing significant differences between three or more groups, the Bonferroni correction was applied for pairwise comparisons. The Spearman correlation coefficient was employed to analyze the relationships between two quantitative variables that did not follow a normal distribution.

Implementation of the Study

The data collection forms were distributed to the nurses working in the hospital through an online survey sent by the researchers. The researchers ensured that only the hospital staff participated in the process by sending the survey link to the nurses' smart mobile phones, thereby limiting participation to those working in the same hospital. The survey link was shared only after one-on-one discussions with the nurses to ensure that they met the inclusion criteria.

Ethics Approval

The ethics committee approval was obtained from the Health Sciences Ethics Board of Ankara Yıldırım Beyazıt University (issue date 26.09.2024, issue number: 07/862). The hospital management permission was obtained (E-84892257-300-312517). An informed consent form was presented to the nurses who agreed to take part in the research study. A permission to use the instrument in the study was obtained from the relevant scholars, and the research was conducted following the Declaration of Helsinki. Artificial intelligence or any artificial intelligence-supported applications were not used in this study.

Results

The study included a total of 226 nurses. However, 50 nurses were ruled out from the study for a number of reasons such as being assigned outside the institution, having worked only in pediatric services throughout their careers,

Table 1. The sociodemographic and individual characteristics of the participants

Variables (n=115)	n	%
Age groups [Mean±SD→35.55±9.65 (years)]		
<30	45	39.1
30–39	30	26.1
≥40	40	34.8
Gender		
Women	101	87.8
Men	14	12.2
Educational level		
High school	9	7.8
Undergraduate	93	80.9
Postgraduate	13	11.3
Financial status		
Income exceeds expenses	14	12.2
Income equals expenses	71	61.7
Income is less than expenses	30	26.1
Living area		
City	37	32.2
District	76	66.1
Village	2	1.7
The presence of an elderly person in the family life of the nurse who is responsible for his/her care		
Yes	24	20.9
No	91	79.1
Smoking status		
Yes	33	28.7
No	82	71.3
Status of receiving geriatric or gerontology training		
Yes	27	23.5
No	88	76.5
Duration to care for a geriatric patient [Mean±SD→4.27±5.67 (years)]		
Non-caregiving	37	32.2
1–5 years	48	41.7
More than 5 years	30	26.1
Satisfaction with caring for the elderly		
Yes	95	82.6
No	20	17.4

SD: Standard deviation.

having less than one year of work experience, or being on maternity leave. The study was carried out with 115 nurses. The sociodemographic and individual characteristics of the participants were summarized in Tables 1, 2 and 3.

Table 2. Distribution of descriptive findings related to the scale

Gerontological Nursing Competence Instrument (n=115)	Mean	SD	Median	Minimum	Maximum
Appreciated encounters and Interactions with older people	3.19	0.82	3.4	1.0	4.0
Medication for older people	2.96	0.76	3.0	1.0	4.0
Nutrition for older people	2.99	0.83	3.2	1.0	4.0
Safe living environment for older people	3.08	0.87	3.2	1.0	4.0
Supporting the functioning of older people	2.96	0.85	3.0	1.0	4.0
End of life care	2.90	0.97	3.0	1.0	4.0
Developing one's competencies	3.07	0.85	3.3	1.0	4.0
Supporting an older person's mental health	3.01	0.86	3.0	1.0	4.0
Supporting an older person's sexuality	2.39	0.78	2.3	1.0	4.0
Guiding self-care among older people	2.86	0.80	3.0	1.0	4.0
Responding to challenging situations	3.08	0.81	3.0	1.0	4.0

SD: Standard deviation.

Table 3. Examination of the reliability coefficients of the responses given to the instrument

Gerontological Nursing Competence Instrument (n=115)	Number of items	Cronbach- α coefficient
Appreciated encounters and Interactions with older people	7	0.956
Medication for older people	5	0.906
Nutrition for older people	6	0.948
Safe living environment for older people	5	0.950
Supporting the functioning of older people	9	0.972
End of life care	4	0.950
Developing one's competencies	4	0.930
Supporting an older person's mental health	4	0.956
Supporting an older person's sexuality	3	0.827
Guiding self-care among older people	3	0.910
Responding to challenging situations	3	0.887

Table 1 presents the distribution of the descriptive characteristics related to the study.

Table 2 presents the results of descriptive statistics related to the subdimensions of the Gerontological Nursing Competency Instrument. The study found that the nurses' average total score on the instrument was 158.02.

Table 3 presents the reliability coefficients of the responses given to the Gerontological Nursing Competency Instrument, indicating that the responses are highly reliable.

The Relationships of Quantitative Characteristics of Participants with GeroNursingCom

The statistical analysis showed no significant difference in GeroNursingCom based on age groups ($p>0.05$).

A statistically significant variation was noted in the sub-dimension scores of the GeroNursingCom based

on education level. These sub-dimensions include appreciated encounters and interactions with older people, medication for older people, nutrition for the older people, safe living environment for older people, supporting the functioning of older people, end-of-life care, developing one's competencies, supporting an older person's mental health, supporting an older person's sexuality, guiding self-care among older people, and responding to challenging situations ($\chi^2=8.853$; $p=0.012$; $\chi^2=14.391$; $p=0.001$; $\chi^2=13.077$; $p=0.001$; $\chi^2=10.097$; $p=0.006$; $\chi^2=13.298$; $p=0.001$; $\chi^2=11.845$; $p=0.004$; $\chi^2=9.155$; $p=0.010$; $\chi^2=8.935$; $p=0.011$; $\chi^2=9.421$; $p=0.009$; $\chi^2=6.574$; $p=0.037$; $\chi^2=13.102$; $p=0.001$ respectively). It was found that the scores of nurses with a postgraduate degree were significantly higher than all in subdimensions with a high school or bachelor's degree ($p<0.05$).

The analysis revealed no statistically significant variation in the GeroNursingCom based on whether nurses were responsible for the care of an elderly individual ($p>0.05$).

A statistically relevant difference was observed in all the subdimension scores of the GeroNursingCom based on whether nurses had received training in geriatrics or gerontology ($Z=-2.800, p=0.005$; $Z=-3.627, p<0.001$; $Z=-3.414, p=0.001$; $Z=-3.412, p=0.001$; $Z=-4.088, p<0.001$; $Z=-2.798, p=0.005$; $Z=-4.989, p<0.001$; $Z=-2.906, p=0.004$; $Z=-2.230, p=0.026$; $Z=-2.719, p=0.007$; $Z=-3.757, p<0.001$ respectively). The findings of this study indicate that the sub-dimension scores of the GeroNursingCom were significantly higher among those who had received training in geriatrics or gerontology than among those who had not ($p<0.05$).

A relevant difference was observed in the sub-dimension scores of the GeroNursingCom based on the duration of nurses' experience in caring for older patients. It was found that nurses who had been caring for older patients for more than five years had higher scores on the instrument's sub-dimensions, which include medication for older people, nutrition for older people, supporting older people's functioning, end-of-life care, developing one's own competencies, supporting an older person's mental health, supporting an older person's sexuality, guiding older people's self-care, and responding to challenging situations, than nurses who had non-caregiving ($\chi^2=9.545$; $p=0.008$; $\chi^2=9.053$; $p=0.011$; $\chi^2=13.794$; $p=0.001$; $\chi^2=12.431$; $p=0.002$; $\chi^2=10.772$; $p=0.005$; $\chi^2=7.341$; $p=0.025$; $F=4.999$; $p=0.008$; $\chi^2=11.164$; $p=0.004$; $\chi^2=6.267$; $p=0.044$ respectively). These results showed a significant difference was found in the safe living environment for older people sub-dimension score of the GeroNursingCom based on the duration of nurses' experience in caring for older patients ($\chi^2=12.253$; $p=0.002$). It was also found that the sub-dimension scores of providing a safe living environment for older people for those who had been providing care for 1-5 years and for more than 5 years were significantly higher than those who had non-caregiving ($p<0.05$).

A meaningful difference was detected in the end-of-life care sub-dimension scores based on nurses' satisfaction with providing care for the elderly ($Z=-2.172$; $p=0.030$). It was found that the scores on the end-of-life care subdimensions were significantly higher among those who were satisfied with caregiving compared to those who were not satisfied ($p<0.05$) (Appendices).

In the correlation analysis of the pairwise combinations of the 11 sub-dimensions of the GeroNursingCom, a meaningful, statistically significant, positive, and weak to

moderate correlation was found among all sub-dimensions ($p<0.05$). It was noted that any two sub-dimensions positively influence each other, i.e. as one increases, so does the other, and as one decreases, so does the other.

Discussion

This study evaluated GeroNursingCom levels among nurses in a hospital and examined the influencing factors. The analysis of the descriptive data revealed that the majority of nurses were female, only 27% had received training in gerontology, and most were satisfied with caring the older people, and these data were consistent with existing literature.^[16,17] It has been documented that the knowledge of gerontology among nurses is generally insufficient globally and also in Türkiye.^[13,19] Considering the rapid aging of the world's population and the increasing demand for gerontological care, it is believed that supporting nurses through continuing education and certification programs will improve the quality of gerontological care. In this study, more than 80% of nurses expressed satisfaction with caring for geriatric patients, which should be seen as a valuable opportunity for the development of gerontological nursing.

This study clearly demonstrates the impact of postgraduate nursing education on the development of gerontological nursing. The nurses with postgraduate nursing education were found to have considerable higher competencies in all subdimensions of gerontological nursing compared to nurses with only a bachelor's or high school degree. Various studies on this topic have reported similar findings that are consistent with the results of this study.^[8,20] It is believed that health care institutions should develop policies to support nurses in pursuing postgraduate education to ensure that more qualified nurses participate in health care services to better meet the care needs of the elderly. In addition to postgraduate education, institutional training programs are also essential for the advancement of gerontological nursing. This research documented that nurses who had received gerontological nursing education had significantly higher levels of competency in all subdimensions compared to those who had not received such an education. The accumulated research on this topic clearly indicates that gerontological nursing education improves the quality of care provided to the elderly, contributes positively to the quality of life of the elderly, increases nurses' knowledge and skills, and promotes more positive attitudes toward the elderly.^[13-15, 21] In addition, the length of time spent caring for older adults is another factor influencing gerontological nursing competence. Numerous studies report that nurses with longer experience in geriatric nursing are more effective in

providing holistic care to older patients.^[18,22] It is believed that health care institutions can contribute to the development of gerontological nursing by effectively utilizing nurses with extensive geriatric care experience in elderly care, ensuring their active participation in institutional training programs, and developing policies that allow them to mentor newly recruited nurses in geriatric care.

Patients in end-of-life care are primarily older adults.^[23] Providing care for terminally ill patients is also a demanding and complex process for nurses.^[24] Therefore, nurses who care for end-of-life patients and who are especially willing to care for and take responsibility for geriatric patients directly contribute to better care outcomes, which ultimately leads to higher quality end-of-life care.^[16,25] Consistent with the literature, this study also emphasized that nurses who were satisfied with caring for the elderly had higher end-of-life care competencies. It is evident that the development of strategies to encourage nurses to adopt positive attitudes toward caring for the elderly and to take responsibility in caring for them would contribute significantly to the advancement of gerontological nursing.

The analysis in this study demonstrated that all the sub-dimensions of the GeroNursingCom had a positive, weak to moderate, and statistically significant relationship with each other. According to the research findings, each sub-dimension that enhances gerontological nursing competency also positively supports the development of other sub-dimensions. These findings indicate that any initiative designed to enhance gerontological nursing will have a positive impact on the healthy aging of older adults. Therefore, integrating curriculum content that promotes positive attitudes toward caring for the elderly from undergraduate nursing education, increasing the use of technology-enhanced educational approaches, and implementing learning strategies that engage students in caring for the elderly will be effective in the development of gerontological nursing.^[12,26]

Study Limitations

This study is limited to the self-reports of nurses working in a state hospital and the results of the study cannot be generalized to all nurses.

Conclusion and Recommendation

This study revealed that nurses' level of education, duration of nurses' experience in caring for older patients, training in geriatrics or gerontology, and satisfaction with caring for the elderly were variables that contributed to the development of their gerontological nursing competencies.

Supporting nurses to receive training in geriatrics and gerontology and including geriatrics in in-house training in healthcare institutions will make significant contributions to improving the quality of care for elderly individuals. It is recommended that incentive programs be developed to ensure that nurses who are more experienced in caring for geriatric individuals continue to be willing to provide care.

Ethics Committee Approval: The Ankara Yıldırım Beyazıt University Non-Interventional Clinical Research Ethics Committee granted approval for this study (date: 26.09.2024, number: 07/862). The hospital management permission was obtained (E-84892257-300-312517).

Informed Consent: Informed consent was obtained from the participants.

Conflict of Interest: None declared.

Financial Disclosure: The authors declared that this study has received no financial support.

Use of AI for Writing Assistance: The author declared that artificial intelligence (AI) supported technologies were not used in the study.

Authorship Contributions: Concept: BÇ; Design: BÇ, MÖ; Supervision: BÇ; Materials: MÖ; Data Collection or Processing: MÖ; Analysis or Interpretation: BÇ, MÖ; Literature Search: BÇ, MÖ; Writing: BÇ; Critical Reviews: BÇ, MÖ.

Acknowledgments: We thank all nurses who participated in our research.

Peer-review: Double blind peer-reviewed.

References

1. United Nations. World population prospects 2024: Summary of results. New York: United Nations; 2024. Available from: https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2024/Jul/wpp2024_summary_of_results_final_web.pdf. Accessed Sep 16, 2025.
2. Bähler C, Huber CA, Brüngger B, Reich O. Multimorbidity, health care utilization and costs in an elderly community-dwelling population: A claims data based observational study. *BMC Health Serv Res* 2015;15:23. [CrossRef]
3. Ferrat E, Bastuji-Garin S, Paillaud E, Caillet P, Clerc P, Moscovici L, et al. Efficacy of nurse-led and general practitioner-led comprehensive geriatric assessment in primary care: Protocol of a pragmatic three-arm cluster randomised controlled trial (CEpiA study). *BMJ Open* 2018;8(4):e020597. [CrossRef]
4. Gu C, Qian L, Zhuo X. mindfulness intervention for health information avoidance in older adults: Mixed methods study. *JMIR Public Health Surveill* 2025;11:e69554. [CrossRef]
5. Peterson J, Faig K, Yetman L, Robertson C, Flanagan K, Prosser J, et al. The impact of specialised geriatric 5M education on mobilisation of older adult patients in acute care in five Canadian hospitals. *Age Ageing* 2025;54(Suppl 1):afae277-081. [CrossRef]

6. Alhozim BMA, Almutairi ET, Albutyan ZY, Alzahrani NA, Alonizy MM, Albutyan LY, et al. The impact of polypharmacy on drug efficacy and safety in geriatric populations. *Egypt J Chem* 2024;67(13):1533-40. [\[CrossRef\]](#)
7. Tohmola A, Elo S, Mikkonen K, Kyngäs H, Lotvonen S, Saarnio R. Nursing students' competence profiles in gerontological nursing-A cross-sectional study. *Nurs Open* 2022;9(1):199-209. [\[CrossRef\]](#)
8. Abudu-Birresborn D, McCleary L, Puts M, Yakong V, Cranley L. Preparing nurses and nursing students to care for older adults in lower and middle-income countries: A scoping review. *Int J Nurs Stud*. 2019;92:121-34. [\[CrossRef\]](#)
9. Aytekin Kanadlı K, Sazak Y, Tosun N. Çok yönlü geriatrik değerlendirmede multidisipliner ekip yaklaşımı ve hemşirenin rolü. *J Geriatr Sci* 2021;4(1):15-22. [Article in Turkish] [\[CrossRef\]](#)
10. Önal Dölek B. Geriatrik hizmetlerde ekip çalışması ve geriatrik ekipte sosyal çalışmacı. *Toplum Sosyal Hizmet* 2013;24(1):145-56. [Article in Turkish]
11. Wyman JF, Abdallah L, Baker N, Bell C, Cartwright J, Greenberg SA, et al. Development of core competencies and a recognition program for gerontological nursing educators. *J Prof Nurs* 2019;35(6):452-60. [\[CrossRef\]](#)
12. Jeon Y, Choi H, Lee U, Kim H. Technology-based interactive communication simulation addressing challenging communication situations for nursing students. *J Prof Nurs* 2024;53:71-9. [\[CrossRef\]](#)
13. Traynor V, Britten N, Gibson D, Munk S, Chenoweth L, Stokes J, et al. Implementing a gerontological nursing competencies programme in aged care: Participant experiences. *Int Nurs Rev* 2025;72(2):e13034. [\[CrossRef\]](#)
14. Martínez-Arnau FM, López-Hernández L, Castellano-Rioja E, Botella-Navas M, Pérez-Ros P. Interventions to improve attitudes toward older people in undergraduate health and social sciences students. A systematic review and meta-analysis. *Nurse Educ Today* 2022;110:105269. [\[CrossRef\]](#)
15. Schiltz NK, Armstrong GQ, Foradori MA, Ball S, Duffy EG, McCormack ME, et al. Evaluation of education initiatives to increase delivery of age-friendly care in retail clinics. *J Am Geriatr Soc* 2024;72(10):3046-54. [\[CrossRef\]](#)
16. Duru-Aşiret G, Türten-Kaymaz T, Canbolat Ö, Kapucu S. Hemşirelerin yaşlıya ilişkin tutumları. *Hemşirelikte Araştırma Geliştirme Derg* 2015;17(1):10-20. [Article in Turkish]
17. Aydemir A. Hemşirelerin profesyonel değer algısının yaşlı ayrımcılığı tutumu üzerine etkisi. *Sağlık Yaşam Bilim Derg* 2022;4(1):183-9. [Article in Turkish] [\[CrossRef\]](#)
18. Tohmola A, Saarnio R, Mikkonen K, Kyngäs H, Elo S. Development and psychometric testing of the Gerontological Nursing Competence (GeroNursingCom) instrument. *J Adv Nurs* 2021;77(2):1070-84. [\[CrossRef\]](#)
19. Aslan TK, Solmaz T, Tohmola A. Adaptation of the Gerontological Nursing Competence (GeroNursingCom) instrument to Turkish: Validity and reliability study. *Nurse Educ Pract* 2024;75:103913. [\[CrossRef\]](#)
20. Fitzpatrick JM, Hayes N, Naughton C, Ezhova I. Evaluating a specialist education programme for nurses and allied health professionals working in older people care: A qualitative analysis of motivations and impact. *Nurse Educ Today* 2021;97:104708. [\[CrossRef\]](#)
21. Elkharadly GAE, El-Geneidy MM, Ahmed HAEH. The effect of the implementation of nursing interventions program on incidence and severity of constipation among geriatric patients undergoing hip surgeries. *Alex Sci Nurs J* 2024;26(2):149-60. [\[CrossRef\]](#)
22. Oddy A, Corkin D, Davis B. Self-care for nurses and nursing teams delivering and evaluating palliative care. In: *Children's palliative nursing care*. Abingdon: Routledge; 2025. p. 116-35. [\[CrossRef\]](#)
23. Ausserhofer D, Piccoliori G, Engl A, Mähknecht A, Plagg B, Barbieri V, et al. Social, health and lifestyle-related determinants of older adults' preferences for place of death in South Tyrol, Italy - a cross-sectional survey study. *BMC Geriatr* 2024;24(1):899. [\[CrossRef\]](#)
24. Dadashi N, Rassouli M, Mojen LK. Neglected parental role among Iranian parents with cancer: Unveiling social aspects of palliative care. *Semin Oncol Nurs* 2025;41(1):151806. [\[CrossRef\]](#)
25. Umubyeyi B, Leboul D, Bagaragaza E. "You close the door, wipe your sadness and put on a smiling face": A qualitative study of the emotional labour of healthcare professionals providing palliative care in nursing homes in France. *BMC Health Serv Res* 2024;24(1):1070. [\[CrossRef\]](#)
26. Hwang GJ, Cheng PY, Chang CY. Facilitating students' critical thinking, metacognition and problem-solving tendencies in geriatric nursing class: A mixed-method study. *Nurse Educ Pract* 2025;83:104266. [\[CrossRef\]](#)

Appendix 1. Comparison of Gerontological Nursing Competence Instrument sub-dimension scores by age groups

Age groups	<30 (n=45)		30–39 (n=30)		≥40 (n=40)		Statistical test* and p value
	Mean±SD	Median (IQR)	Mean±SD	Median (IQR)	Mean±SD	Median (IQR)	
Appreciated encounters and Interactions with older people	3.21±0.81	3.4 (0.6)	3.21±0.72	3.4 (0.7)	3.16±0.91	3.5 (1.2)	$\chi^2=0.262$, p=0.877
Medication for older people	2.98±0.81	3.2 (1.3)	2.87±0.75	3.0 (0.7)	3.00±0.73	3.0 (1.0)	$\chi^2=0.787$, p=0.675
Nutrition for older people	2.90±0.83	3.0 (1.4)	3.05±0.76	3.0 (0.8)	3.07±0.89	3.3 (1.2)	$\chi^2=1.760$, p=0.415
Safe living environment for older people	3.06±0.90	3.2 (1.1)	3.15±0.80	3.2 (0.9)	3.05±0.88	3.2 (1.4)	$\chi^2=0.086$, p=0.958
Supporting the functioning of older people	2.96±0.81	3.1 (0.8)	2.99±0.87	3.0 (1.5)	2.93±0.90	3.0 (1.5)	$\chi^2=0.053$, p=0.974
End of life care	2.81±0.90	3.0 (1.3)	3.00±1.00	3.0 (1.8)	2.91±1.03	3.3 (1.9)	$\chi^2=1.263$, p=0.532
Developing one's competencies	3.01±0.87	3.0 (1.0)	3.10±0.76	3.0 (0.8)	3.11±0.91	3.4 (1.4)	$\chi^2=0.846$, p=0.655
Supporting an older person's mental health	3.00±0.89	3.0 (1.0)	2.93±0.79	3.0 (0.6)	3.09±0.88	3.4 (1.6)	$\chi^2=1.307$, p=0.520
Supporting an older person's sexuality	2.38±0.78	2.3 (1.0)	2.42±0.75	2.3 (1.0)	2.38±0.81	2.3 (1.3)	F=0.033, p=0.968
Guiding self-care among older people	2.88±0.83	3.0 (1.0)	2.82±0.77	3.0 (1.0)	2.87±0.82	3.0 (0.9)	$\chi^2=0.104$, p=0.950
Responding to challenging situations	3.12±0.83	3.0 (1.2)	3.05±0.74	3.0 (0.7)	3.04±0.86	3.0 (1.5)	$\chi^2=0.122$, p=0.941

SD: Standard deviation; IQR: Inter quartile range; *: ANOVA (analysis of variance) Test (F-table value) statistics were used to compare three or more independent groups in normally distributed data. Kruskal-Wallis H Test (χ^2 -table value) statistics were used to compare three or more independent groups in data that did not have a normal distribution.

SD: Standard deviation; IQR: Inter quantile range; *: ANOVA (analysis of variance) Test (F-table value) statistics were used to compare three or more independent groups in normally distributed data. Kruskal-Wallis H Test (χ^2 -table value) statistics were used to compare three or more independent groups in data that did not have a normal distribution.

Appendix 2. Comparison of Gerontological Nursing Competence Instrument sub-dimension scores by education levels

Education level	High School (n=9) ⁽¹⁾		Undergraduate (n=93) ⁽²⁾		Postgraduate (n=13) ⁽³⁾		Statistical test* and p value
	Mean±SD	Median (IQR)	Mean±SD	Median (IQR)	Mean±SD	Median (IQR)	
Appreciated encounters and Interactions with older people	2.76±0.91	3.0 (1.7)	3.16±0.83	3.3 (0.7)	3.68±0.29	3.7 (0.4)	$\chi^2=8.853$, p=0.012, (1.2-3)
Medication for older people	2.60±0.64	3.0 (0.9)	2.90±0.76	3.0 (1.0)	3.61±0.40	3.8 (0.4)	$\chi^2=14.391$, p=0.001, (1.2-3)
Nutrition for older people	2.46±0.99	2.2 (1.7)	2.96±0.81	3.0 (1.1)	3.62±0.29	3.7 (0.5)	$\chi^2=13.077$, p=0.001, (1.2-3)
Safe living environment for older people	2.82±0.91	2.8 (1.7)	3.03±0.85	3.2 (1.1)	3.61±0.76	3.8 (0.4)	$\chi^2=10.097$, p=0.006, (1.2-3)
Supporting the functioning of older people	2.61±0.85	3.0 (1.3)	2.89±0.85	3.0 (1.1)	3.67±0.35	3.8 (0.6)	$\chi^2=13.298$, p=0.001, (1.2-3)
End of life care	2.50±1.08	2.0 (1.8)	2.82±0.96	3.0 (1.6)	3.69±0.35	3.8 (0.6)	$\chi^2=11.845$, p=0.004, (1.2-3)
Developing one's competencies	2.78±0.79	3.0 (1.6)	3.02±0.86	3.0 (0.9)	3.66±0.49	3.8 (0.6)	$\chi^2=9.155$, p=0.010, (1.2-3)
Supporting an older person's mental health	2.47±0.92	2.0 (1.3)	2.99±0.86	3.0 (1.0)	3.56±0.38	3.8 (<0.8)	$\chi^2=8.935$, p=0.011, (1.2-3)
Supporting an older person's sexuality	1.89±0.62	1.7 (0.8)	2.36±0.75	2.3 (1.0)	2.95±0.83	3.0 (1.8)	$\chi^2=9.421$, p=0.009, (1.2-3)
Guiding self-care among older people	2.26±0.95	2.0 (1.7)	2.87±0.78	3.0 (0.7)	3.23±0.62	3.2 (0.8)	$\chi^2=6.574$, p=0.037, (1-3)
Responding to challenging situations	2.51±1.13	2.0 (2.0)	3.03±0.78	3.0 (0.8)	3.72±0.35	4.0 (0.7)	$\chi^2=13.102$, p=0.001, (1.2-3)

SD: Standard deviation; IQR: Inter quantile range; *: Kruskal-Wallis H Test (χ^2 -table value) statistics were used to compare three or more independent groups in data that did not have a normal distribution

SD: Standard deviation; IQR: Inter quantile range; *: Kruskal-Wallis H Test (χ^2 -table value) statistics were used to compare three or more independent groups in data that did not have a normal distribution.

Appendix 3. Comparison of Gerontological Nursing Competence Instrument sub-dimension scores by the presence of an elderly person in the family life of the nurse who is responsible for his/her care

The presence of an elderly person in the family life of the nurse who is responsible for his/her care	Yes (n=24)		No (n=91)		Statistical test* and p value
	Mean±SD	Median (IQR)	Mean±SD	Median (IQR)	
Appreciated encounters and Interactions with older people	3.14±0.82	3.3 (0.9)	3.20±0.82	3.4 (0.7)	Z=-0.325, p=0.745
Medication for older people	2.98±0.74	3.0 (0.9)	2.95±0.78	3.0 (1.0)	Z=-0.028, p=0.978
Nutrition for older people	2.89±0.85	3.0 (1.4)	3.02±0.82	3.2 (1.0)	Z=-0.869, p=0.385
Safe living environment for older people	3.08±0.93	3.2 (1.0)	3.08±0.85	3.2 (1.2)	Z=-0.211, p=0.833
Supporting the functioning of older people	3.07±0.81	3.0 (1.2)	2.93±0.86	3.0 (1.2)	Z=-0.615, p=0.539
End of life care	2.99±0.91	3.0 (1.4)	2.87±0.94	3.0 (1.8)	Z=-0.291, p=0.771
Developing one's competencies	3.07±0.93	3.1 (1.4)	3.06±0.84	3.3 (0.8)	Z=-0.192, p=0.848
Supporting an older person's mental health	3.04±0.84	3.0 (0.9)	3.01±0.86	3.0 (1.0)	Z=-0.007, p=0.994
Supporting an older person's sexuality	2.57±0.68	2.5 (1.0)	2.34±0.81	2.3 (1.3)	Z=-1.155, p=0.248
Guiding self-care among older people	2.83±0.78	3.0 (1.0)	2.87±0.81	3.0 (0.7)	Z=-0.189, p=0.850
Responding to challenging situations	2.93±0.95	3.0 (1.8)	3.11±0.77	3.0 (0.7)	Z=-0.671, p=0.502

SD: Standard deviation; IQR: Inter quantile range; *: Mann-Whitney U Test (Z-table value) statistics were used to compare two independent groups in data that did not have a normal distribution.

Appendix 4. Comparison of Gerontological Nursing Competence Instrument sub-dimension scores by status of receiving geriatric or gerontology training

Status of receiving geriatric or gerontology training	Yes (n=27)		No (n=88)		Statistical test* and p value
	Mean±SD	Median (IQR)	Mean±SD	Median (IQR)	
Appreciated encounters and Interactions with older people	3.52±0.61	3.7 (0.6)	3.08±0.84	3.3 (0.9)	Z=-2.800, p=0.005
Medication for older people	3.41±0.51	3.6 (0.6)	2.82±0.78	3.0 (1.2)	Z=-3.627, p<0.001
Nutrition for older people	3.46±0.41	3.3 (0.7)	2.85±0.87	3.0 (1.5)	Z=-3.414, p=0.001
Safe living environment for older people	3.51±0.69	3.8 (0.8)	2.95±0.87	3.1 (1.2)	Z=-3.412, p=0.001
Supporting the functioning of older people	3.49±0.64	3.8 (0.8)	2.80±0.84	3.0 (1.2)	Z=-4.088, p<0.001
End of life care	3.33±0.81	3.8 (1.0)	2.76±0.98	3.0 (1.5)	Z=-2.798, p=0.005
Developing one's competencies	3.69±0.39	4.0 (0.8)	2.88±0.86	3.0 (1.0)	Z=-4.989, p<0.001
Supporting an older person's mental health	3.39±0.64	3.5 (1.0)	2.89±0.89	3.0 (1.6)	Z=-2.906, p=0.004
Supporting an older person's sexuality	2.72±0.81	2.7 (1.3)	2.29±0.75	2.3 (1.3)	Z=-2.230, p=0.026
Guiding self-care among older people	3.23±0.58	3.0 (1.0)	2.75±0.82	3.0 (0.9)	Z=-2.719, p=0.007
Responding to challenging situations	3.56±0.48	3.7 (1.0)	2.92±0.83	3.0 (1.0)	Z=-3.757, p<0.001

SD: Standard deviation; IQR: Inter quantile range; *: Mann-Whitney U Test (Z-table value) statistics were used to compare two independent groups in data that did not have a normal distribution.

Appendix 5. Comparison of Gerontological Nursing Competence Instrument sub-dimension scores by duration to care for a geriatric patient

Duration to care for a geriatric patient	Non-caregiving (n=37) ⁽¹⁾			1–5 years (n=48) ⁽²⁾			More than 5 years (n=30) ⁽³⁾			Statistical test* and p value
	Mean±SD	Median (IQR)		Mean±SD	Median (IQR)		Mean±SD	Median (IQR)		
Appreciated encounters and Interactions with older people	2.98±0.92	3.1 (0.9)		3.19±0.81	3.4 (0.7)		3.44±0.61	3.6 (0.9)		$\chi^2=5.478$, p=0.065
Medication for older people	2.64±0.81	2.6 (1.4)		3.02±0.75	3.0 (1.0)		3.23±0.59	3.2 (0.7)		$\chi^2=9.545$, p=0.008, (1–3)
Nutrition for older people	2.73±0.85	2.8 (1.2)		3.03±0.80	3.2 (0.8)		3.27±0.78	3.3 (0.8)		$\chi^2=9.053$, p=0.011, (1–3)
Safe living environment for older people	2.73±0.83	3.0 (1.4)		3.21±0.85	3.4 (0.8)		3.30±0.81	3.7 (0.9)		$\chi^2=12.253$, p=0.002, (1–2.3)
Supporting the functioning of older people	2.63±0.83	2.8 (1.2)		3.00±0.81	3.0 (0.9)		3.30±0.83	3.6 (1.0)		$\chi^2=13.794$, p=0.001, (1–3)
End of life care	2.51±0.93	2.5 (1.4)		2.96±0.96	3.0 (1.4)		3.28±0.86	3.8 (1.1)		$\chi^2=12.431$, p=0.002, (1–3)
Developing one's competencies	2.81±0.89	3.0 (1.3)		3.06±0.86	3.1 (0.8)		3.41±0.67	3.5 (1.0)		$\chi^2=10.772$, p=0.005, (1–3)
Supporting an older person's mental health	2.79±0.91	3.0 (1.4)		3.08±0.83	3.1 (0.9)		3.27±0.75	3.4 (1.0)		$\chi^2=7.341$, p=0.025, (1–3)
Supporting an older person's sexuality	2.09±0.76	2.0 (1.2)		2.43±0.76	2.3 (1.0)		2.68±0.72	2.7 (1.1)		F=4.999, p=0.008, (1–3)
Guiding self-care among older people	2.57±0.84	2.6 (1.0)		2.88±0.81	2.9 (1.0)		3.20±0.62	3.1 (0.8)		$\chi^2=11.164$, p=0.004, (1–3)
Responding to challenging situations	2.88±0.84	2.9 (1.5)		3.05±0.82	3.0 (0.7)		3.34±0.69	3.3 (1.0)		$\chi^2=6.267$, p=0.044, (1–3)

SD: Standard deviation; IQR: Inter quantile range; *: ANOVA Test (F-table value) statistics were used to compare three or more independent groups in normally distributed data. Kruskal-Wallis H Test (χ^2 -table value) statistics were used to compare three or more independent groups in data that did not have a normal distribution.

SD: Standard deviation; IQR: Inter quantile range; *: ANOVA Test (F-table value) statistics were used to compare three or more independent groups in normally distributed data. Kruskal-Wallis H Test (χ^2 -table value) statistics were used to compare three or more independent groups in data that did not have a normal distribution.

Appendix 6. Comparison of Gerontological Nursing Competence Instrument sub-dimension scores by satisfaction with caring for the elderly

Satisfaction with caring for the elderly	Yes (n=95)		No (n=20)		Statistical test* and p value
	Mean±SD	Median (IQR)	Mean±SD	Median (IQR)	
Appreciated encounters and Interactions with older people	3.21±0.81	3.4 (0.7)	3.09±0.89	3.2 (0.8)	Z=-0.516, p=0.606
Medication for older people	2.95±0.79	3.0 (1.0)	2.97±0.66	3.0 (1.1)	Z=-0.189, p=0.850
Nutrition for older people	3.02±0.84	3.2 (1.0)	2.89±0.76	3.0 (0.8)	Z=-0.868, p=0.385
Safe living environment for older people	3.09±0.68	3.2 (1.0)	3.01±0.86	3.1 (1.2)	Z=-0.617, p=0.537
Supporting the functioning of older people	2.99±0.88	3.0 (1.1)	2.82±0.73	3.0 (0.8)	Z=-1.230, p=0.219
End of life care	2.97±0.97	3.3 (1.2)	2.52±0.86	2.4 (1.2)	Z=-2.172, p=0.030
Developing one's competencies	3.09±0.85	3.3 (0.8)	2.97±0.86	3.0 (1.2)	Z=-0.816, p=0.415
Supporting an older person's mental health	3.00±0.85	3.0 (1.0)	3.07±0.88	3.0 (1.6)	Z=-0.382, p=0.702
Supporting an older person's sexuality	2.41±0.81	2.3 (1.3)	2.26±0.57	2.3 (0.7)	Z=-0.634, p=0.526
Guiding self-care among older people	2.87±0.83	3.0 (1.0)	2.82±0.69	3.0 (0.6)	Z=-0.866, p=0.386
Responding to challenging situations	3.07±0.85	3.0 (1.0)	3.10±0.61	3.0 (0.3)	Z=-0.565, p=0.572

SD: Standard deviation; IQR: Inter quantile range; *: Mann-Whitney U Test (Z-table value) statistics were used to compare two independent groups in data that did not have a normal distribution.