



Knowledge of emergency nurses and related factors toward geriatric: a cross-sectional study

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Background: This study aimed to evaluate the geriatric knowledge of emergency nurses and related factors.

Materials and methods: This cross-sectional study was conducted on nursing students at Guilan University of Medical Sciences in Iran. The objective was to assess the geriatric knowledge of nurses working in the emergency departments of educational and therapeutic centers in Rasht City. The sample was selected through a census sampling method, including all nurses employed in these departments. Data collection was carried out using a three-part questionnaire, which included sections on 'personal and occupational characteristics' and the 'Questionnaire of Awareness about the Facts of Aging (FAQ)'.

Results: A total of 190 emergency department nurses participated in this study. The mean age of the participants was 34.41 years (SD = 6.37). The mean score for geriatric knowledge among the nurses was 6.58 (SD = 2.24). No statistically significant associations were found between geriatric knowledge and the personal or occupational variables of the nurses. Also, the results showed that changes in nurses' geriatric knowledge are explained to a small extent through personal and occupational characteristics.

Conclusion: Overall, these results highlight the urgent need for targeted interventions to improve emergency nurses' understanding of geriatric care. Furthermore, given the lack of significant correlations with demographic and occupational variables, future research should investigate additional factors that may influence emergency nurses' knowledge in this area.

Keywords: elderly, emergency department, knowledge, nurses, nursing

Introduction

Aging is a fundamental aspect of human life, characterized by a series of physiological changes affecting both internal and external organs, which often present challenges for individuals in adapting to their environments^[1–5]. The global trend of an expanding older adult population is surpassing the growth rate of younger demographics. According to projections by the WHO, individuals aged 60 and above will comprise 15% of the global population by 2025, rising to 22% by 2050^[6]. This significant growth in the elderly population and its associated implications highlight the need for increased attention to this demographic^[7].

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HIGHLIGHTS

- The mean score indicating emergency nurses' knowledge toward geriatric was found to be 6.58 (SD = 2.24).
- In the univariate context, there were no statistically significant associations observed between geriatric knowledge and the personal and occupational variables of the nurses.
- The coefficient of determination (R^2) was determined to be 0.056, indicating that only 5.6% of the variability in the geriatric knowledge scores among nurses could be accounted for by their personal and occupational attributes.
- In general, these results underscore the pressing need for targeted interventions aimed at enhancing emergency nurses' understanding of geriatric care.
- Given the absence of significant correlations with demographic and occupational variables, future research should explore additional factors that may influence emergency nurses' knowledge in this domain.

The elderly will require increased utilization of inpatient services due to the prevalence of comorbidities. The rising demand for emergency and acute care hospitalizations among the elderly is a direct consequence of the growing older adult demographic^[8,9]. It is crucial to focus on the elderly as a primary target of healthcare, emphasizing the essential role of nursing in geriatric care and the need for a tailored care model^[10]. To provide high-quality care, older adults require access to healthcare facilities and treatment options, as well as specialized skills and a dedicated workforce^[11].

Nurses, as the largest workforce in the healthcare system, play a vital role in ensuring continuity of care and improving health across various levels of healthcare delivery^[12–17]. This responsibility is particularly significant for the elderly, who are among the most vulnerable demographic groups. Within the healthcare system, quality care is a fundamental right for all individuals^[18–22], and the elderly, as a vulnerable cohort, require special attention and specialized care^[23]. Due to time constraints and heavy workloads in emergency departments, many elderly individuals do not receive prioritized care, which can result in suboptimal quality of care for this group^[24].

Given these considerations and the ongoing increase in the elderly population, there is a clear need to enhance the quality of life for the elderly through exemplary care provided by emergency department nurses. Consequently, this study was undertaken to assess the level of geriatric knowledge among nurses employed in emergency departments.

Methods

Study design and subjects

This cross-sectional study was conducted on nursing students at Guilan University of Medical Sciences in Iran. The inclusion criteria for the study were as follows: students must be in at least their third semester of the nursing bachelor's degree program, have the willingness to participate in the study, have no prior experience working in a hospital as a paramedic, and provide consent to participate. The study findings are reported in accordance with the STROCSS criteria^[25].

Ethics consideration

The study received approval from the ethics committee of Guilan University of Medical Sciences, Iran (IR.GUMS.REC.1399.613). Prior to participation, all individuals provided informed consent after a thorough explanation of the study's objectives. Participants were explicitly informed of their right to withdraw from the study at any time, ensuring their autonomy and voluntary participation.

Data collection

The sample for this study, which aimed to assess geriatric knowledge among nurses in the emergency departments of educational and therapeutic centers in Rasht City, was selected using a census sampling method. This method included all nurses employed in these departments. Data collection was conducted using a three-part questionnaire that included sections on 'personal and occupational characteristics' and the 'Questionnaire of Awareness about the Facts of Aging (FAQ)'.

Questionnaires

Individual characteristics

The "Individual-Occupational Characteristics" section includes various variables such as age, sex, marital status, educational attainment, occupational position, overall work experience, tenure within the emergency department, employment status, shift schedule, participation in geriatric retraining programs, experience in elderly care, personal encounters with elderly individuals, and parental age.

Knowledge of emergency nurses toward geriatric

The FAQI, developed by Palmore in 1977, consists of three domains and 25 items and serves as a tool to assess knowledge about aging in research studies. Responses are provided through three options: "True," "False," and "I don't know." The questionnaire covers three dimensions: awareness of prevalent misconceptions about the elderly (10 items), the physical status of the elderly (5 items), and the psychosocial aspects of aging (10 items). Scores range from zero to 25, with higher scores indicating a greater understanding of aging. The tool has been validated and standardized in various countries, demonstrating its validity and reliability. In Iran, Rojeh and colleagues conducted a standardization study that confirmed the questionnaire's validity in terms of format, structure, and content. The questionnaire exhibited an average content validity index (CVI) of 0.92, with all items having a content validity ratio (CVR) exceeding 0.42. The calculation of Cronbach's alpha coefficient yielded a value of 0.81, indicating high internal consistency, and a correlation coefficient of 0.98 underscored the questionnaire's robust reliability^[26].

Statistical analysis

Data analysis was conducted using the SPSS software package (version 16.0, SPSS Inc.). Continuous variables were expressed as mean (standard deviation, SD), while categorical variables were presented as frequency (percentage). Descriptive statistics, including mean, standard deviation, and 95% CIs, were used to describe the data. Pearson's correlation coefficient was employed to assess the relationship between nurses' knowledge of aging and continuous variables such as age, overall work experience, and tenure in the emergency department. *t*-tests and one-way analysis of variance (ANOVA) were used to examine the association between nurses' knowledge of aging and categorical personal and occupational variables. The assumption of normality for nurses' knowledge scores on aging was evaluated using the Kolmogorov-Smirnov test. Multiple linear regression analysis was employed to investigate predictive factors associated with nurses' knowledge of aging. A significance level of 0.05 was considered statistically significant.

Results

Participants' characteristics

Table 1 displays the demographic characteristics of the study cohort, consisting of 190 emergency nurses. Their mean age was 34.41 years (SD = 6.37), with an average overall work experience of 8.87 years (SD = 5.24), and an average tenure in the emergency department of 7.24 years (SD = 4.31). The majority of participants were female (84.2%) and held a Bachelor of Science in Nursing degree (93.7%). Regarding employment status, 30.5% were formally employed, while 72.6% worked on rotating shifts, and 83.7% held positions as ordinary nurses. Nearly half of the participants (45.8%) had engaged in elderly rehabilitation programs, with 49.5% reporting prior experience in caring for the elderly, and 47.9% having lived with elderly individuals.

Knowledge of emergency nurses and related factors toward geriatric

The study found that the mean score indicating nurses' knowledge of geriatrics was 6.58 (SD = 2.24). As shown in Table 1, in

Table 1
Demographic characteristics and knowledge of emergency nurses toward geriatric (N = 190).

	Frequency (%) or mean (SD)	Knowledge (mean (SD)) or <i>r</i>	<i>P</i>
Age	34.41 (SD = 6.37)	0.070	0.337*
Working history	8.87 (SD = 5.24)	0.099	0.175*
Working history in the emergency department	7.24 (SD = 4.31)	0.088	0.226*
Sex			
Male	19 (10.0)	7.16 (SD = 2.12)	0.236**
Female	171 (90.0)	6.51 (SD = 2.25)	
Marital status			
Single	30 (15.8)	6.70 (SD = 2.02)	0.764**
Married	160 (84.2)	6.56 (SD = 2.29)	
Education			
BSN	178 (93.7)	6.56 (SD = 2.19)	0.764**
MSN	12 (6.3)	6.83 (SD = 3.01)	
Employment status			
Official	58 (30.5)	6.45 (SD = 2.19)	0.903***
Contractual	56 (29.5)	6.61 (SD = 2.36)	
Plan	50 (26.3)	6.56 (SD = 2.15)	
Corporate	26 (13.7)	6.85 (SD = 2.39)	
Work shift			
Fixed	52 (27.4)	6.71 (SD = 2.39)	0.618**
In circulation	138 (72.6)	6.53 (SD = 2.19)	
Position			
Nurse	159 (83.7)	6.48 (SD = 2.21)	0.255***
Staff nurse	23 (12.1)	6.83 (SD = 2.57)	
Head nurse	8 (4.2)	7.75 (SD = 1.75)	
History of participating in the old age retraining program			
Yes	87 (45.8)	6.70 (SD = 2.33)	0.491**
No	103 (54.2)	6.48 (SD = 2.17)	
Elderly care experience			
Yes	94 (49.5)	6.41 (SD = 2.21)	0.320**
No	96 (50.5)	6.74 (SD = 2.27)	
Experience living with an elderly person			
Yes	91 (47.9)	6.57 (SD = 2.27)	0.965**
No	99 (52.1)	6.59 (SD = 2.23)	

**P* value was obtained with Spearman correlation test.

***P* value was obtained with an independent *t*-test.

****P* value was obtained with a one-way ANOVA test.

Values are given as mean (SD) for continuous variables and frequency (%) for categorical variables.

the univariate context, there were no statistically significant associations observed between geriatric knowledge and the personal and occupational variables of the nurses. In addition, there was no statistically significant relationship between nurses' knowledge and demographic and occupational variables ($P > 0.05$). The model R^2 was equal to 0.056, indicating that 5.6% of the variance in nurses' knowledge score was explained by the demographic and occupational variables.

Discussion

The aim of this study was to evaluate the level of geriatric knowledge among nurses employed in emergency departments within medical training centers during the year 2019.

The findings indicate that nurses possess inadequate knowledge regarding geriatrics, which is consistent with prior research by Rawson *et al.*^[27] Seo^[28], Topaz *et al.*^[29] and Ravanipour *et al.*^[30] all of which highlight deficiencies in emergency nurses' knowledge concerning old age. Emergency nurses

operate in a demanding environment where they encounter patients across different age groups, emphasizing the importance of delivering evidence-based and age-appropriate care to older individuals. Insufficient knowledge about geriatrics among nurses can hinder their ability to provide optimal care for elderly patients. Additionally, it is possible that the assessment tool used in this study, while validated within the country, may have posed overly challenging questions, limiting its effectiveness in accurately assessing nurses' actual knowledge levels. Thus, there is a need for researchers to develop a new tool that is rigorously psychometrically validated and specifically tailored to assess nurses' knowledge of geriatrics. Moreover, identifying factors associated with nurses' inadequate knowledge and incorporating them into intervention planning is crucial for improving nurses' competency in geriatric care.

The results indicate that no statistically significant associations were found between geriatric knowledge and the personal or occupational variables of the nurses. Consistent with our findings, Rawson *et al.*^[27] observed that working experience in the emergency department did not have a significant impact on geriatric knowledge. Similarly, Sharfi Abad's review study from Yazd showed no discernible relationship between occupational and organizational variables and nurses' knowledge and attitudes toward the elderly^[31]. However, conflicting results exist within this realm. For instance, Fita *et al.*^[32] investigated knowledge, attitudes, and associated factors regarding elderly care among nurses in public hospitals in Ethiopia, revealing significant associations with variables such as age over 30 years, work experience exceeding 5 years, possession of an expert degree or higher, cohabitation with elderly individuals, and employment in adult special care departments. Furthermore, Christel *et al.*^[33] conducted a multicenter study examining hospital nurses' knowledge of older patients, finding correlations with variables such as age, work tenure, preliminary secondary education, and level of education. The disparities in occupational and organizational variables and their relationship with nurses' knowledge and attitudes toward the elderly may stem from cultural, religious, and customary differences across societies and studies. Therefore, nursing managers and policymakers should conduct context-specific investigations within their respective organizations and refrain from forming generalizations based solely on previous research findings^[34–36].

Limitations

One limitation of the study is its utilization of a cross-sectional design, which hinders the establishment of causal relationships between variables. Cross-sectional studies provide a snapshot of data at a specific time point, thereby preventing the assessment of temporal changes or the determination of causality between variables. Additionally, a limitation could be attributed to the use of self-report measures for evaluating geriatric knowledge, which may be susceptible to social desirability bias or inaccuracies in participants' self-assessments. Furthermore, the study did not explore potential moderating or mediating factors that might influence the relationship between personal and occupational variables and nurses' geriatric knowledge. Investigating such factors could have provided deeper insights into the mechanisms underlying the observed associations.

Conclusion

In conclusion, the findings of this investigation suggest that geriatric knowledge among emergency nurses is notably inadequate. Furthermore, the analysis did not reveal any statistically significant associations between demographic and occupational factors and emergency nurses' proficiency in geriatrics. These results highlight the urgent need for targeted interventions aimed at enhancing emergency nurses' understanding of geriatric care. Moreover, given the absence of significant correlations with demographic and occupational variables, future research should explore additional factors that may influence emergency nurses' knowledge in this domain. Such endeavors are essential for improving the quality of care provided to elderly patients in emergency settings and ultimately contributing to better health outcomes for this vulnerable population.

Ethical approval

The research was approved by the ethics committee of Guilan University of Medical Sciences, Iran (IR.GUMS.REC.1399.613). Before participation, all individuals involved provided informed consent after receiving a detailed explanation of the study's objectives. Participants were explicitly informed about their right to withdraw from the study at any stage if they chose to do so, ensuring their autonomy and voluntary participation.

Consent

Written informed consent was obtained from the patient for publication and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

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Author contribution

Study concept and design by all authors; Data acquisition by all authors; Data interpretation by all authors; drafting the manuscript by all authors; Revision of the manuscript by all authors; all authors approve the final version of the manuscript.

Conflicts of interest disclosure

The authors declare no conflicts of interest.

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Ethics Code: IR.GUMS.REC.1400.134 Ethics committee of Guilan University of Medical Sciences, Iran.

Guarantor

Nazila Javadi-Pashaki.

Data availability statement

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Provenance and peer review

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