




Research Article

## Relationship between Socio-demographic Nurses' Characteristics and their Knowledge Regarding Fall Prevention among Elderly Women

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### Abstract:

**Background:** The rate of measurement, risks of falls, fall among adults 65 and older caused over 36,000 deaths in 2020, making the leading cause of injury death for that group. In 2020, emergency departments recorded 3 million visits for older adult falls. **Aim of Study** was assess relationship between socio-demographic nurses' characteristics and their knowledge regarding fall prevention among elderly women. **Research design:** A descriptive design **Setting:** Outpatient Clinics at Beni-Suef University Hospital. **Sample:** A cross sectional sampling composed from 100 nurses. **Tool:** Self-administered Questionnaire consists of: (I) Personal characteristics of nurses, (II): Knowledge assessment sheet. **Results:** almost half of study sample (48.0%) range in age from 30 to less than 45 years old, 62.0% have good level of total knowledge about fall prevention among the elderly during hospitalization. **Conclusion:** A highly statistically significant relation between total knowledge of the studied nurses about fall prevention among the elderly during hospitalization and their age, Educational qualification, years of experience and training. **Recommendation:** Implement an educational program to improve nurses' knowledge regarding accidents especially falling in old women.

**Keywords:** Nurses' Characteristics Fall Elderly Women

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## INTRODUCTION

Demographics of the population have been changed globally over recent years with increasing life expectancy proportion of elderly people. The WHO has predicted that the number of older people (65 years and older is the traditional definition) worldwide will reach 1.5 billion by 2050 (Hassan et al., 2021a; Saleh et al., 2023a; Hassan et al., 2021b; Aboudonya et al., 2022a; Hassan et al., 2021c; Hassan et al., 2023a; Mohamed et al., 2024a; Hassan et al., 2024a; Mohamed et al., 2024b; Omran et al., 2024a). Aging is a progressive state, which is associated with physical, social and psychological changes. The more traditional African definitions of an elder or 'elderly' person correlate with the chronological ages of 50 to 65 years, depending on the setting, the region and the country. Geriatrics was defined as the branch of medicine that deals with the problems of old age and aging, including the clinical problems of senescence and senility (Ahmed et al., 2024; Mohamed et al., 2023a; Hassan et al., 2023b; Hassan et al., 2023c; Mohamed et al., 2023b; Hassan et al., 2024b; Mostafa et al., 2024; Omran et al., 2024b; Mohamed et al., 2024c).

The oldest reliably recorded human was Jeanne Calment who died in 1997 at 122. Ageing is among the greatest known risk factors for most human diseases. Of the roughly 150,000 people who die each day across the globe, about two-thirds-100,000 per day-die from age-related causes. In industrialized nations, the proportion is higher, reaching 90%. Aging, progressive physiological changes in an organism that lead to senescence, or a decline of biological functions and of the organism's ability to adapt to metabolic stress (Adetuyi et al., 2022; Hassan et al., 2024c; Mohamed et al., 2024d; Aboudonya et al., 2022b; Hassan et al., 2021d).

Falls involve elderly people for two main reasons: the decrease of functional reserves that are used to maintain the orthostatic position; the following vulnerabilities or pathologies caused by factors that occur simultaneously, pathological processes, and adverse pharmacological incentives. People over 65 have the highest probability of falling down: 30% of them fall down at least once per year, while the percentages become higher, (about 50%) on people over 80. Even if elderly people run the highest risk of falling down (Purnamasari et al., 2020; Ramadan et al., 2020; Hassan et al., 2024d; Mostafa et al., 2018; Hassan et al., 2020; Sheha et al., 2020).

The rate of measurement, risks of falls, fall among adults 65 and older caused over 36,000 deaths in 2020, making the leading cause of injury death for that group. In 2020, emergency departments recorded 3 million visits for older adult falls. Older adult falls cost \$50 billion in medical costs annually, with 3/4 paid by Medicare and Medicaid. According to the Centers for Disease Control and Prevention (CDC), falls are the leading cause of death among adults 65 and older, causing over 34,000 deaths for that age group. Falling is the second leading cause of death from unintentional injuries globally (Horová et al., 2020; Hassan et al., 2023d; Mohamed et al., 2024d; Hassan et al., 2023e; Saleh et al., 2023b; Hassan et al., 2023f; Sheha et al., 2021).

## AIM OF STUDY

The aim of the study is to assess relationship between socio-demographic nurses' characteristics and their knowledge regarding fall prevention among elderly women

## Research Question

Is there of relationship between socio-demographic characteristics on nurses at Beni-Suef university hospital and their knowledge regarding fall prevention among elderly women?

## SUBJECTS AND METHODS

### Research Design

A descriptive design was used to conduct this study.

### Study Settings

The study was conducted in outpatients at Beni-Suef university hospital.

### Sample

A cross sectional sample composed from 100 nurses.

### Tools of data collection

#### Tool 1. Self-administered Questionnaire

It was designed by the investigator after reviewing related literature to collect the required data. It was written in simple Arabic language, and it consists of the following parts.

**Part I:** Personal characteristics of nurses such as age, level of education, years of experience, and training.

**Part II:** Knowledge assessment sheet: it developed by the investigator after reviewing the related literature (Mohamed et al., 2023d).

#### Scoring system

The total scores of the 22 questions were 22 degree which equal 100%, each question was assigned a score according to nurses' knowledge responses were correct answer scored with 1 and incorrect answer scored with 0. The nurses' knowledge was checked with a model key answer and accordingly the nurses' knowledge was categorized into good, average and poor. These scores were summed and were converted into a percent score. It was classified into 3 categories:

- **Good** knowledge if total score 75% or more ( $\geq 12.75$  score)
- **Fair** knowledge if total score from 50 to 75% ( $8.5 < 12.75$  score)
- **Poor** knowledge if total score  $< 50\%$  ( $< 8.5$  score).

#### Validity and Reliability

Validity: It was ascertained by a group of experts in Community Health Nursing (5) professor. Reliability analysis by measuring of internal consistency of the tool through Cronbach's Alpha test, Knowledge assessment sheet was 0.824.

#### Ethical Considerations

The research approval was obtained from the ethical committee of the faculty of medicine Beni-Suef University.

#### Pilot Study

The pilot study was carried out on 10% those represent (10) of nurses in order to test the applicability of the constructed tools and the clarity of the questions.

#### Fieldwork

Data were collected through six months, from the beginning of March 2022 to the end of September 2022.

#### Administrative Design

An official permission was obtained by submission of a formal letter issued from the Dean of faculty of nursing, Beni-Suef University to the director of hospital.

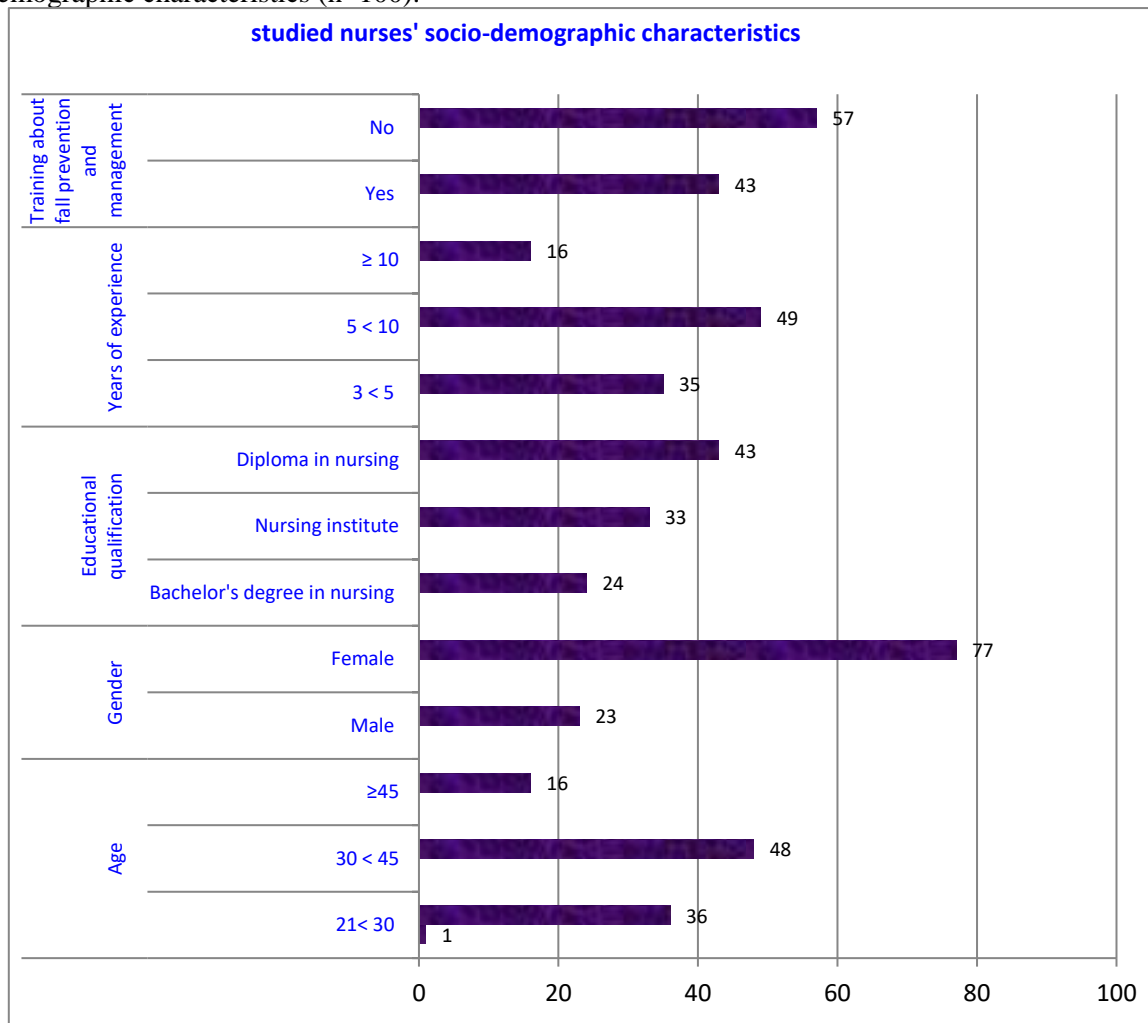
## RESULTS

**Figure 1.** shows that almost half of study sample (48.0%) range in age from 30 to less than 45 years old. In addition, around one-quarters of them (23.0%) are males. As regard their years of experience, almost half of them (49.0%) have from 5 to less than 10 years. Additionally, more than half of them (57.0%) hadn't training.

**Table 1.** presents that; nearly two thirds of the studied nurses (62.0%) have good level of total knowledge about fall prevention among the elderly during hospitalization. Also, more than one fifth of them (21.0%) have average level.

**Figure 2.** presents a highly statistically significant relation between total knowledge of the studied nurses about fall prevention among the elderly during hospitalization and their age, Educational qualification, Years of experience and Training.

**Figure 1.** Number and percentage distribution of the studied nurses' according to their socio-demographic characteristics (n=100).

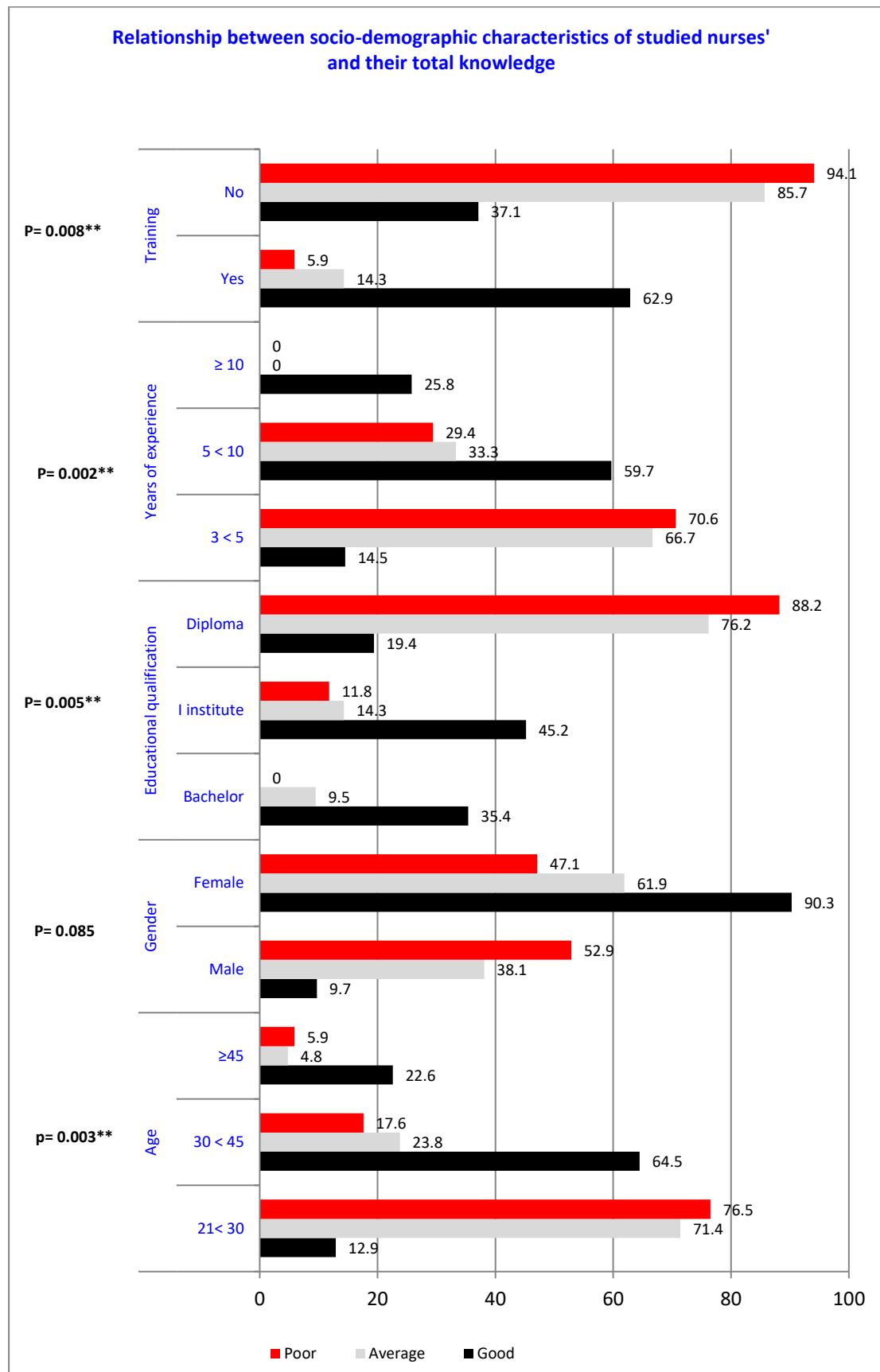


**Table 1.** Percentage distribution of the studied nurses' according to their total knowledge about fall prevention among the elderly during hospitalization (n=100).

Total knowledge	No	%
Good	62	62.0
Fair (Average)	21	21.0
Poor	17	17.0
<b>Total</b>	<b>100</b>	<b>100.0</b>

**Figure 2.** Relationship between socio-demographic characteristics of studied nurses' and their total knowledge about fall prevention among the elderly during hospitalization (n=100).

\*Significant at  $p < 0.05$ . \*\*Highly significant at  $p < 0.01$ . Not significant at  $p > 0.05$



## DISCUSSION

Aging is a gradual, continuous process of natural change that begins in early adulthood. During early middle age, many bodily functions begin to gradually decline (Ha et al., 2021; Fahmy et al., 2023a; Hassan et al., 2023g; Hassan et al., 2023h; Hassan et al., 2023i; Fahmy et al., 2023b; Hassan et al., 2023j; Alsherbienny et al., 2023). Elderly is a natural process, which starts with intrauterine life, continues until death and is caused by irreversible degeneration of cells and systems. Elderly is not a pathological process and it consists of physiological, psychological, sociological and chronological changes (Hassan et al., 2024; Hassan et al., 2023k; Saleh et al., 2023c; Hassan et al., 2021e; Ibrahim et al., 2021).

Old age is the range of ages for persons nearing and surpassing life expectancy. People of old age are also referred to as: old people, elderly, elders, seniors, senior citizens, or older adults. Old age is not a definite biological stage: the chronological age denoted as "old age" varies culturally and historically. Some disciplines and domains focus on the aging and the aged, such as the organic processes of aging (senescence), medical studies of the aging process (gerontology), diseases that afflict older adults (geriatrics), technology to support the aging society (gerontechnology), and leisure and sport activities adapted to older people (such as senior sport) (Hassan et al., 2021f).

The present study aimed to assess impact of socio-demographic characteristics on nurses' knowledge regarding fall prevention among elderly women at Beni-Suef University Hospital.

Regarding sociodemographic data of the studied nurse, the result of present study showed that almost half of them of them range in age from 30 to less than 45 years old with mean  $35.24 \pm 1.02$  years. In addition, more than three quarters of them are females. As regard their years of experience, almost half of them have from 5 to less than 10 years with mean  $7.94 \pm 0.25$  years. From investigator point view, this high proportion of female nurses is most probably attributing to the fact that the study of BSN in the Egyptian universities was exclusive for females only till a few years ago, so the profession of nursing in Egypt was mostly feminine. The present study revealed that nearly two thirds of the studied nurses (62.0%) have good level of total knowledge about fall prevention among the elderly during hospitalization. This may attributed that around half of them (49%) had 5-10 years experiences. As well 57% of them had bachelor's and institute degree in nursing.

This finding in same line with study conducted by (James et al., 2022) entitled "Knowledge, Attitudes on Fall and Awareness of Hospitalized Patient's Fall Risk Factors Among the Nurses Working in Tertiary Care Hospitals" and depicted that majority of the studied nurses were Females and more than half of them have not experienced previous patient fall (Zaninotto & Steptoe., 2022). Moreover, this finding supported with study by (Dennis., 2021) who conducted study about "Increasing Fall Awareness Through Nursing Staff Education" and showed that most of the studied nurses were females (Hassan et al., 2024f). on other hand, this finding inconsistent with study by (Han et al., 2020) who conducted study about "The effect of knowledge and attitude on fall prevention activities among nursing staff in long-term care hospitals" and illustrated that more than two fifths of the studied nurses were aged 50 to 59 and the average was  $47.64 \pm 8.82$  years old. In addition, less than half of them had the clinical career experience of one to nine years or less and majority of them had fall prevention education (Hassan et al., 2024g).

According to the studied nurses' educational qualification, the result of present study showed that less than half of the studied nurses have diploma in nursing, about one third of them are at nursing institute, but almost one quarter of them have bachelor's degree in nursing. this outcome supported with (Yoo, 2017) who conducted study entitled "Knowledge, attitude and prevention activities related to fall among of geriatric hospital nurse" and showed

that about one third of the studied nurses have bachelor's degree in nursing (Han et al., 2020). Conversely, this finding disagreed that study by (Wilson et al., 2016) who conducted study about "Nurses' perceptions of implementing fall prevention interventions to mitigate patient-specific fall risk factors" and reported that less than half of the studied nurse held a baccalaureate degree in nursing (Yoo., 2017).

Related to total knowledge about fall prevention among the elderly among the studied nurses, the result of present study showed that, nearly two thirds of the studied nurses have good level of total knowledge about fall prevention among the elderly during hospitalization. Also, more than one fifth of them have average level, whilst less than one fifth of them have poor level. This finding might be due to effective training programs provided for nurses at the hospital about fall and majority of studied nurses had experience more than five years. The outcome harmony with study published by (Horová et al., 2020) who conducted study about "Testing the knowledge of nurses regarding the prevention of falls" and revealed that most of the studied nurses have good level of total knowledge about fall prevention among the elderly (Wilson et al., 2016). Moreover, this finding is consistent with study by Simamora, & Siregar, (2019) that conducted study about "Knowledge of Nurses about Prevention of Patient Fall Risk in Inpatient Room of Private Hospital in Medan" and showed that more than half of the studied nurses belong to the category of good level knowledge (Ghanem et al., 2024a).

The present study illustrated that there is a highly statistically significant relation between total knowledge of the studied nurses about fall prevention among the elderly during hospitalization and their age, educational qualification, years of experience and training. No statistically significant relation exists with their gender. This finding might be due to most of the studied nurses were females. This finding agreed with study by Bhardwaj & Chugh, (2021) who conducted study about " Effectiveness of fall prevention program on nurses' knowledge and fall prevention practices" and showed that no association between knowledge about fall and their gender (Simamora & Siregar., 2019). Conversely, this finding disagreed with study by (Cho, & Jang, 2020) who conducted study about " nurses' knowledge, attitude, and fall prevention practices at south Korean hospitals" and reported that there no statistically significant relation exists between total knowledge among studied nurses and with their age, educational qualification, years of experience and training (Hassan et al., 2024g; Ghanem et al., 2024b).

## **CONCLUSION**

A highly statistically significant relation between total knowledge of the studied nurses about fall prevention among the elderly during hospitalization and their age, Educational qualification, years of experience and training.

## **Recommendation**

Implement an educational program to improve nurses' knowledge regarding accidents especially falling in old women.

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