Study Nurses' Practices Regarding Fall Prevention among Elderly Women

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Abstract:

Background: Nurses are considered key in raising awareness of patient safety in any health care facility. Falls are due to several factors, and a holistic approach to the individual and environment is important. Suppose a person is considered at high risk for falls after the screening. In that case, a community health nurse should conduct a fall risk assessment to obtain a more detailed analysis of the individual's risk of falling.

Aim of Study assess nurses' practices 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): Nurses' practices checklist.

Results: Most of the studied sample (89.0%) report that those who experienced dizziness or palpitations. The majority of them (94.0%, 92.0%, 92.0%) report that they make sure the call system within reach, Bed in low position and personal item within reach respectively. more than two-thirds of them (68.0%) report that Antihypertensive affect the risk of falling and mobility /balance.

Conclusion: According to their interpretation of score fall prevention measures; most of the studied nurses have moderate risk and slightly more than one quarter of them have high risk, whilst nearly two one fifth of them have low risk.

Recommendation: Foster collaboration between nurses, physicians, physiotherapists, and other healthcare professionals to collectively address fall prevention.

Key words: nurses' practices; fall prevention; elderly women

Introduction:

Aging is the gradual decline of biological functions and adaptation to stress over time. Aging affects every cell, organ, and tissue in the body, leading to increased risk of disease and death. Aging is associated with changes in skin, hair, teeth, gums, hearing, vision, bones, muscles, joints, heart, brain, and more. Aging is not a disease, but a natural and inevitable part of life that can be slowed down by healthy habits and interventions. Ageing is the process of becoming older. The term refers mainly to humans, many other animals, and fungi, whereas for example, bacteria, perennial plants and some simple animals are potentially biologically immortal [1-4].

The aging process brings about unavoidable changes in cells, tissues, and organs, and the function begins to decrease as a result. Aging is a complicated and poorly understood process [5-9]. During the last century, human lifespan has increased substantially resulting in a sub stantial increase of elderly people over the next two decades.

Elderly status is affected by physical, social, financial, and cultural factors. Metabolic and physiologic changes that accompany normal aging modify the requirements of elderly. An examination of evidence is needed to better understand how elderly status is associated with aging and risk of mortality or chronic disease among older adults [10-16].

Environmental factors can increase the risk of falls independently or, more importantly, by interacting with intrinsic factors. Risk for falling is highest when the environment requires greater postural control and mobility (when walking on a slippery surface) and when the environment is unfamiliar (when relocated to a new home). Situational factors, certain activities or decisions may increase the risk of falls and fall-related injuries. Examples are walking while talking or being distracted by multitasking and then failing to notice an environmental hazard (a curb or step), rushing to the bathroom (especially at night when not fully awake or when lighting may be inadequate), and rushing to answer the telephone [17].

The role of nurses is acknowledged with regard to fall prevention, and they are largely credited with the success in implementing preventive programs. Nurses are considered key in raising awareness of patient safety in any health care facility. Falls are due to several factors, and a holistic approach to the individual and environment is important. Suppose a person is considered at high risk for falls after the screening. In that case, a community health nurse should conduct a fall risk assessment to obtain a more detailed analysis of the individual's risk of falling. A fall risk assessment requires using a validated tool that investigators have examined to be useful in naming the causes of falls in an individual. As a person's health and circumstances change, reassessment is required [18].

Assess the patient's balance and gait. Older adults who have poor balance or difficulty walking are more likely to fall, may be associated with lack of exercise or a neurological cause, arthritis, or other medical conditions and treatments. An important risk factor highlighted in a study is that adults with rheumatoid arthritis are at high risk of falls, including swollen and tender lower extremity joints, fatigue, and use of psychotropic medications [19].

Assess the use of mobility assistive devices. Inappropriate use, improper selection, and maintenance of mobility aids such as canes, walkers, and wheelchairs can increase energy expenditure, unsteady gait, overload, and joint damage and ultimately increase the patient's risk for falls. Older adults who are frail and are not using ambulatory assistive devices fall more during their activities of daily living [20].

Assess for disease-related symptoms .Increased incidence of falls has been demonstrated in people with symptoms such as orthostatic hypotension, reduced cerebral blood flow, impaired urinary elimination, edema, dizziness, weakness, fatigue, and confusion. Patients with certain diagnoses experienced more falls than others. For example, patients with stroke were more likely to fall than other patients, thereby lengthening stay and increasing medical costs during physical rehabilitation. Patients with orthostatic hypotension whose blood pressure drops upon often standing experience light-headedness or dizziness that can cause falls [21].

Aim of Study

The aim of the study is to assess nurses' practices regarding fall prevention among elderly women at Beni-Suef university hospital.

Research Question

What about nurses' practices regarding fall prevention among elderly women at Beni-Suef university hospital?

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 (male and female) who were providing care for patients connected to direct patient care.

Tools of data collection:

Four tools were used in this study and classified as the following:

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: Nurses' practices checklist: it adapted from (**Ha et al., 2021** & **Subramanian et al., 2020**) [22-23].

Scoring system: The total scores of the 45 steps were 45 degree which equal 100%, each step scored done (1 score) and not done (0 score).

Content Validity:

Validity: It was ascertained by a group of experts in Community Health Nursing (5) professor. Their opinions elicited regarding the format, layout, consistency, accuracy and relevancy of the tools.

Reliability:

Reliability analysis by measuring of internal consistency of the tool through Cronbach's Alpha test, Nurses' practices checklist was 0.819

Ethical Considerations

The research approval was obtained from the ethical committee of the faculty of medicine Beni-Suef University. The investigator was clarified the objectives and aim of the study to nurses included in the study before starting. Oral consent was obtained from the nurses before included in the study; a clear and simple explanation was given according to their level of understanding.

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. The pilot has also served to estimate the time needed for each subject to fill in the questionnaire.

Fieldwork

Data were collected through six months, from the beginning of March 2022 to the end of September 2022. The investigator firstly met with the nurses at the previously mentioned settings, explained the purpose of the study after introducing herself. Individual interviewing was done after obtaining nurses consent to participate. The investigator was visiting the study setting 2days/week at (9Am to 2Pm). The questionnaire was filled by nurses who take 15-30 minutes.

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.

Statistical Analysis

Data collected from the studied sample was revised, coded and entered using Personal Computer (PC). Computerized data entry and statistical analysis were fulfilled using the Statistical Package for Social Sciences (SPSS) version 22. Data were presented using descriptive statistics in the form of frequencies, percentages and Mean SD.

Results

Personal information	N	%
Age		
21< 30	36	36.0
30 < 45	48	48.0
≥45	16	16.0
Mean ± SD 35.24± 1.02		
Gender		
Male	23	23.0
Female	77	77.0
Educational qualification		
Bachelor's degree in nursing	24	24.0
Nursing institute	33	33.0
Diploma in nursing	43	43.0
Years of experience		
3 < 5	35	35.0
5 < 10	49	49.0
≥ 10	16	16.0
Mean ± SD 7.94± 0.25		
Training about fall prevention and management		
Yes	43	43.0
No	57	57.0

Table 1: Number and percentage distribution of the studied nurses' according to their socio-demographic characteristics (n=100). 2022

Personal information	N	%
Age		
21< 30	36	36.0
30 < 45	48	48.0
≥45	16	16.0
Mean ± SD 35.24± 1.02		
Gender		
Male	23	23.0
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≥ 10	16	16.0
Mean ± SD 7.94± 0.25		
Training about fall prevention and management		
Yes	43	43.0
No	57	57.0

Table 1: presents that the mean age of the study sample was 35.24±1.02 years, 77.0% are females, 43.0% have secondary school in nursing. The mean years of experience were 7.94±0.25 years.
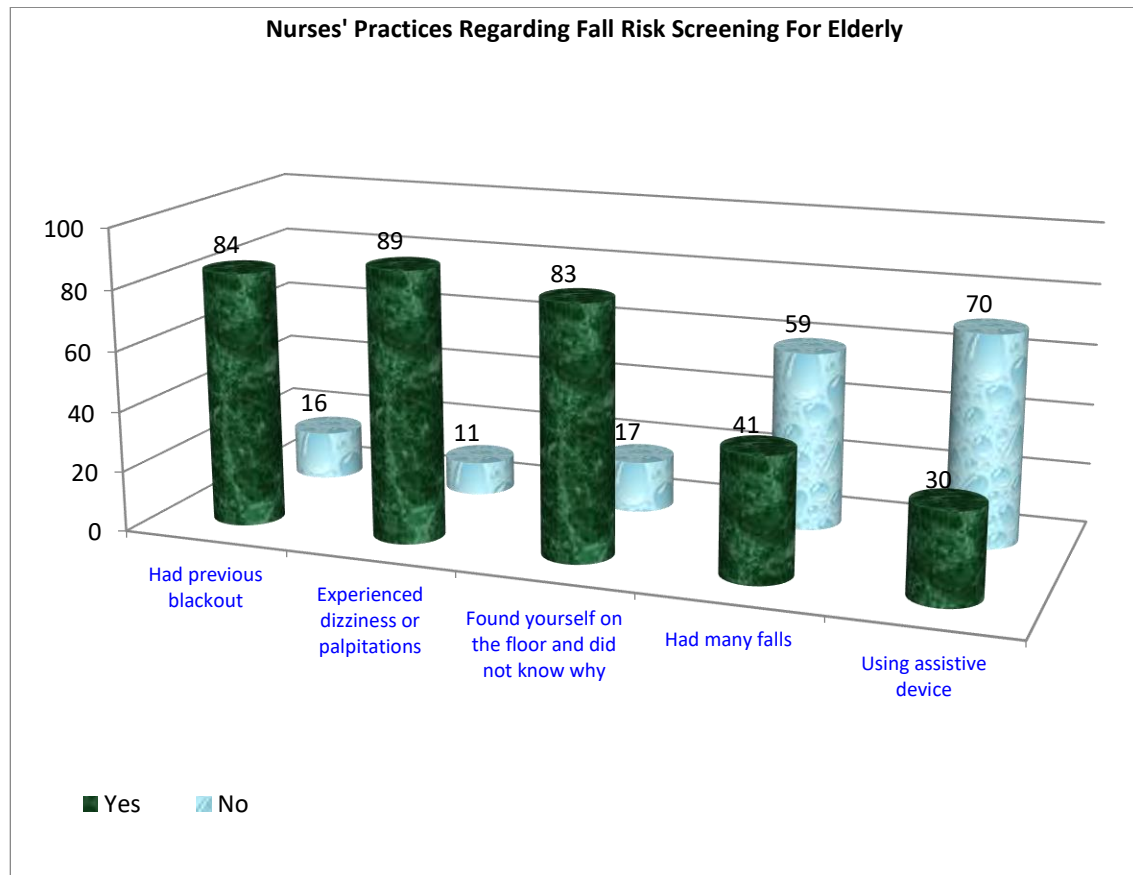
Nurses' Practices Regarding Fall Risk Screening For Elderly

Figure 1: distribution of the studied nurses' according to their practice regarding fall risk screening for elderly (n=100).

Figure 1 clarifies practice of the studied nurses regarding fall risk screening for elderly. It shows that most of them (89.0%) report that those who experienced dizziness or palpitations, but nearly three quarters of them (70.0%) mention that those who are using assistive device.
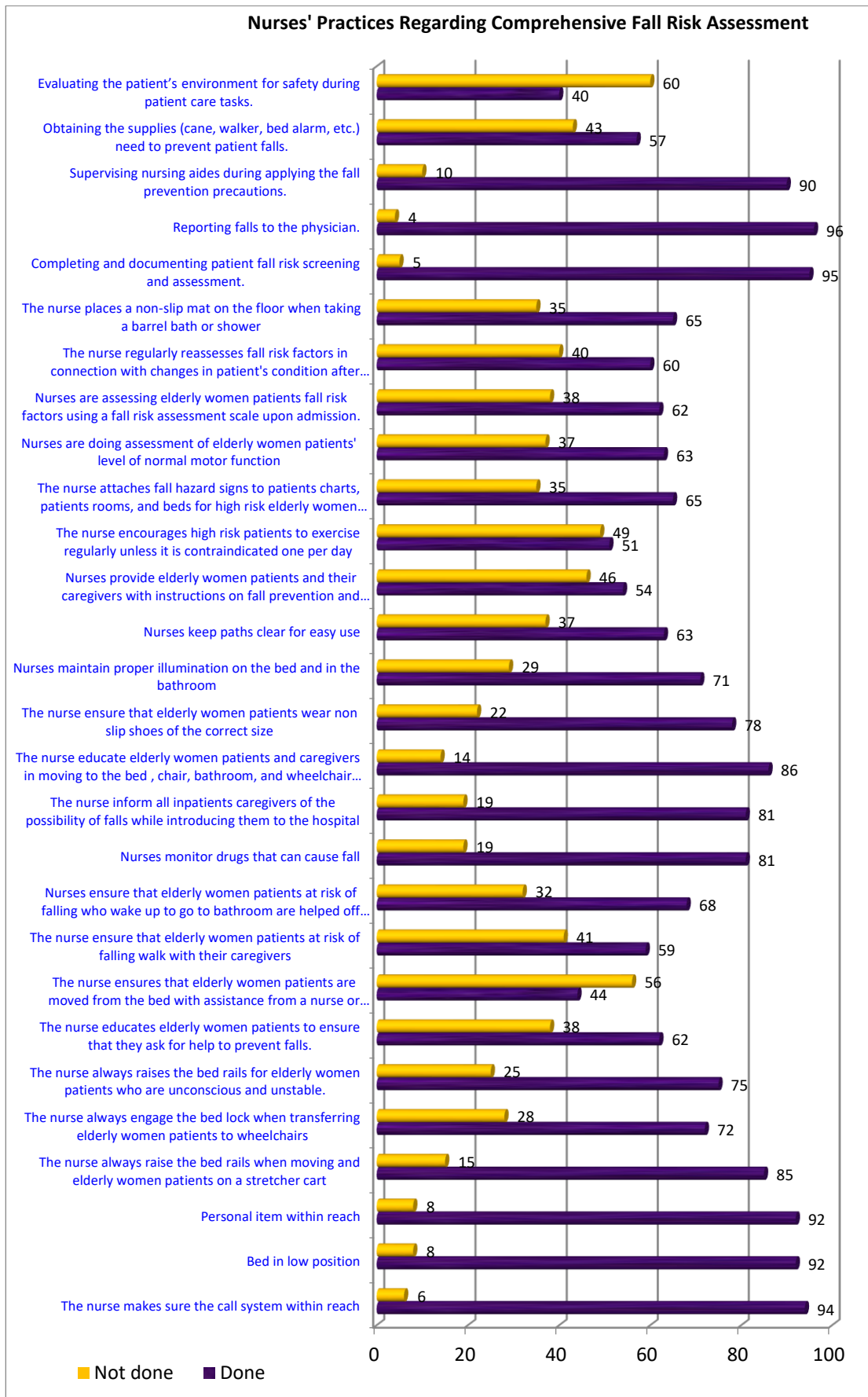
Nurses' Practices Regarding Comprehensive Fall Risk Assessment

Practice	Not done	Done
Evaluating the patient's environment for safety during patient care tasks.	60	40
Obtaining the supplies (cane, walker, bed alarm, etc.) need to prevent patient falls.	43	57
Supervising nursing aides during applying the fall prevention precautions.	10	90
Reporting falls to the physician.	4	96
Completing and documenting patient fall risk screening and assessment.	5	95
The nurse places a non-slip mat on the floor when taking a barrel bath or shower	35	65
The nurse regularly reassesses fall risk factors in connection with changes in patient's condition after…	40	60
Nurses are assessing elderly women patients fall risk factors using a fall risk assessment scale upon admission.	38	62
Nurses are doing assessment of elderly women patients' level of normal motor function	37	63
The nurse attaches fall hazard signs to patients charts, patients rooms, and beds for high risk elderly women…	35	65
The nurse encourages high risk patients to exercise regularly unless it is contraindicated one per day	49	51
Nurses provide elderly women patients and their caregivers with instructions on fall prevention and…	46	54
Nurses keep paths clear for easy use	37	63
Nurses maintain proper illumination on the bed and in the bathroom	29	71
The nurse ensure that elderly women patients wear non slip shoes of the correct size	22	78
The nurse educate elderly women patients and caregivers in moving to the bed , chair, bathroom, and wheelchair…	14	86
The nurse inform all inpatients caregivers of the possibility of falls while introducing them to the hospital	19	81
Nurses monitor drugs that can cause fall	19	81
Nurses ensure that elderly women patients at risk of falling who wake up to go to bathroom are helped off…	32	68
The nurse ensure that elderly women patients at risk of falling walk with their caregivers	41	59
The nurse ensures that elderly women patients are moved from the bed with assistance from a nurse or…	56	44
The nurse educates elderly women patients to ensure that they ask for help to prevent falls.	38	62
The nurse always raises the bed rails for elderly women patients who are unconscious and unstable.	25	75
The nurse always engage the bed lock when transferring elderly women patients to wheelchairs	28	72
The nurse always raise the bed rails when moving and elderly women patients on a stretcher cart	15	85
Personal item within reach	8	92
Bed in low position	8	92
The nurse makes sure the call system within reach	6	94

Legend: Not done, Done

Figure 2: distribution of the studied nurses' according to their practice regarding comprehensive fall risk assessment (n=100).

Figure 2 Illustrates practice of the studied nurses regarding comprehensive fall risk assessment. It reveals that the majority of them (94.0%, 92.0%, 92.0%) report that they make sure the call system within reach, Bed in low position and Personal item within reach respectively, while more than half of them (56.0%) mention that they don't ensures that elderly women patients are moved from the bed with assistance from a nurse or caregiver. Moreover, the same figure demonstrates that the majority of the studied nurses (95.0%, 96.0%, 90.0%) state that they are completing and documenting patient fall risk screening and assessment, Reporting falls to the physician and Supervising nursing aides during applying the fall prevention precautions respectively, while less than two thirds of them (60.0%) report that they aren't evaluating the patient's environment for safety during patient care tasks.
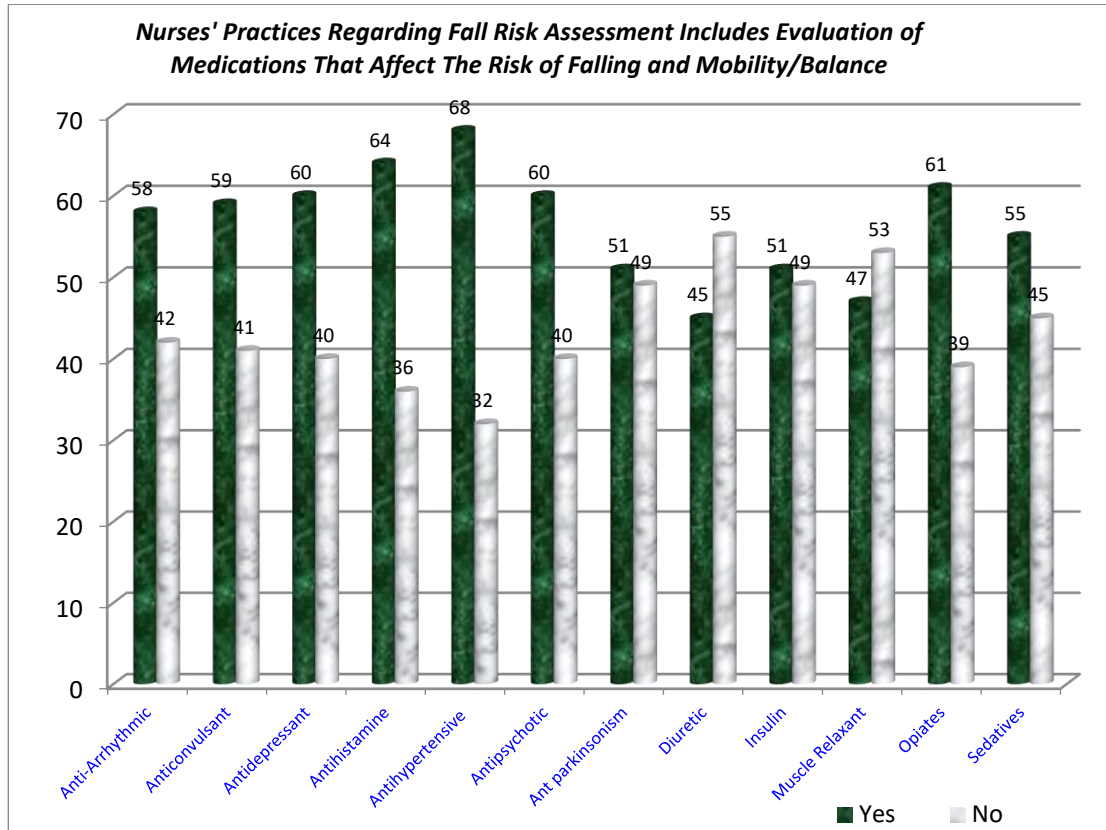
Figure 3: distribution of the studied nurses' according to their practice regarding the fall risk assessment includes an evaluation of medications that affect the risk of falling and mobility/balance (n=100).

Figure 3 illustrates practice of the studied nurses regarding the fall risk assessment also includes an evaluation of medications that affect the risk of falling and mobility /balance. It reveals that more than two thirds of them (68.0%) report that Antihypertensive affect the risk of falling and mobility /balance, but more than half of them (55.0%) mention that Diuretic doesn't affect.
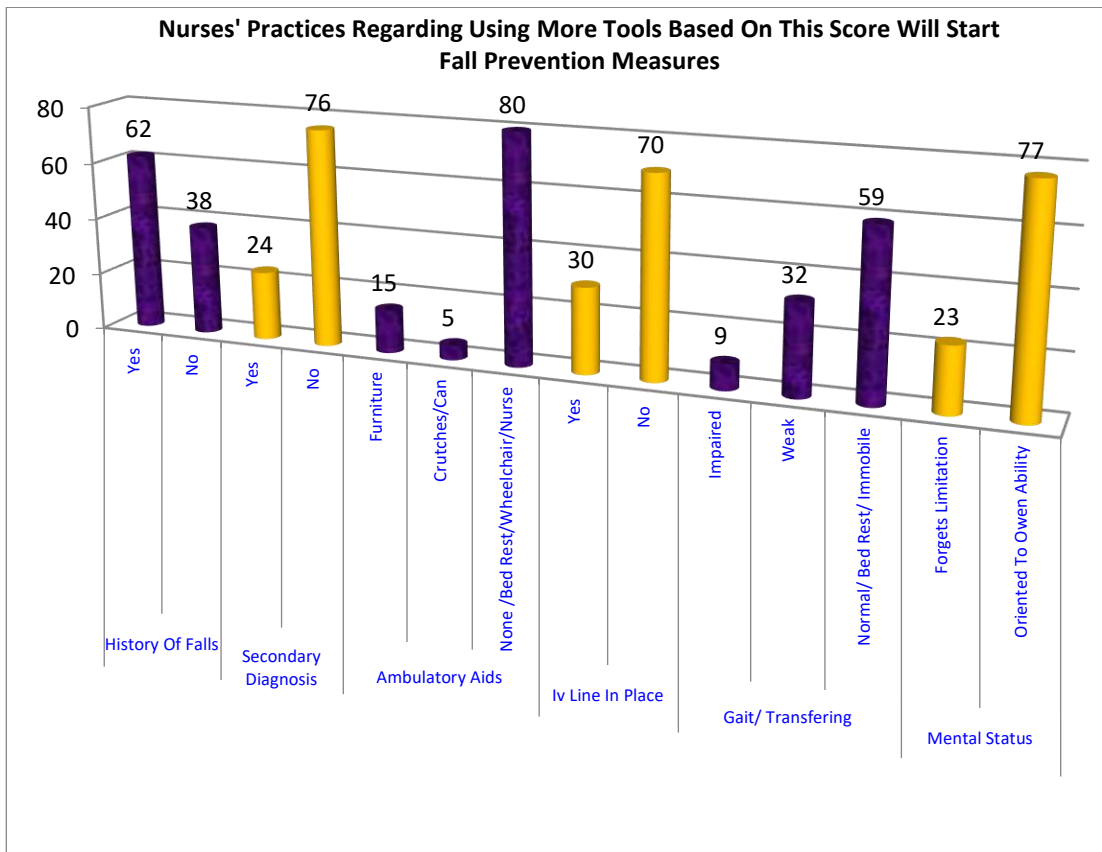
Figure 4: distribution of the studied nurses' according to their practice regarding using more tools based on this score will start fall prevention measures (n=100).

Figure 4 portrays that nearly two thirds of the studied nurses (62.0%) report that history of falls is a risk factor, but more than three quarters of them (76.0%) mention that secondary diagnosis is not. As regard ambulatory aids, most of them (80.0%) state "None/Bed Rest/Wheelchair/Nurse". As well, less than three quarters of them (70.0%) report that "I.V Line in Place" is not a risk factor. Regarding Gait/Transferring, more than half of them (59.0%) mention "Normal/ Bed Rest/ Immobile". Concerning Mental Status, more than three quarters of them (77.0%) state "Oriented to Owen Ability".
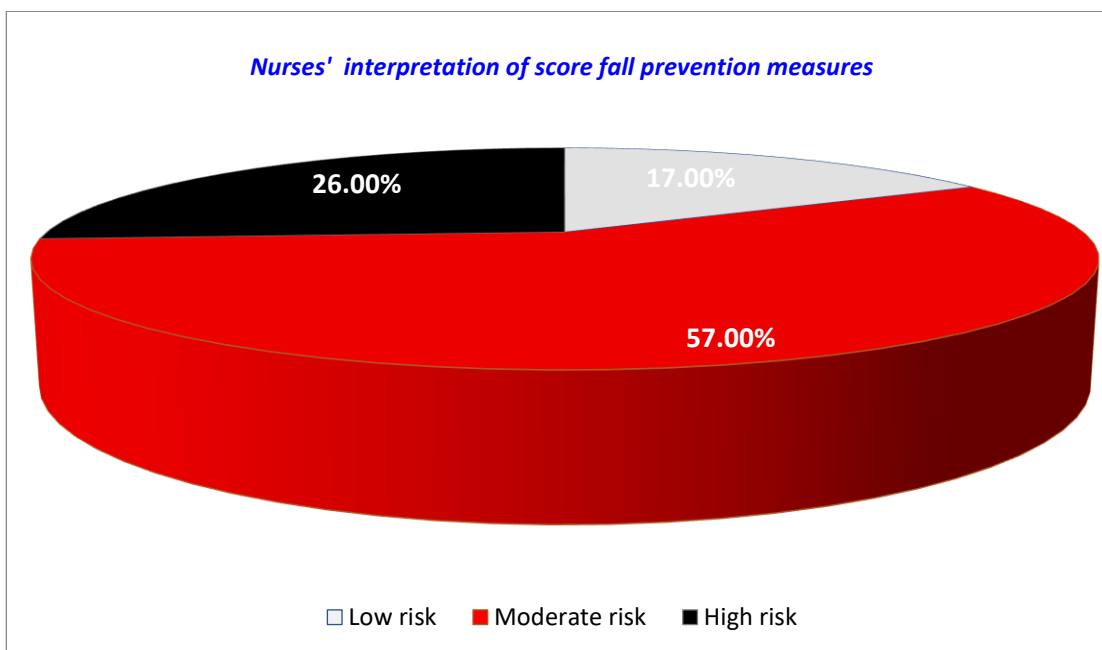
Figure 5: distribution of the studied nurses' according to their interpretation of score fall prevention measures (n=100).

Figure 5 shows that more than two thirds of the studied nurses (57.0%) have moderate risk and slightly more than one quarter of them (26.0%) have high risk, whilst nearly two one fifth of them (17%) have low risk.

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. Common conditions in older age include hearing loss, cataracts and refractive errors, back and neck pain and osteoarthritis, chronic obstructive pulmonary disease, diabetes, depression and dementia. As people age, they are more likely to experience several conditions at the same time [24- 28].

Egypt is the most populous country in the Middle East and the third most populous on the African continent (after Nigeria and Ethiopia). One of the main features of the Egyptian population over the last few decades is the gradual increase in the absolute and relative numbers of older people. In addition, it was predicted that around 20 million Egyptians will be categorized as elderly by 2050 which resembles a full nation at some parts of the world. It should go without saying that, the health sector must be ready to respond to the emerging diseases and illnesses associated with old age [29-33].

The community health nurses play a pivotal and vital role in reducing falls among older adult women. Their roles includes: a comprehensive assessment of older adults risk for fall using the standardized tools of fall risk assessment, a comprehensive assessment of older adults physical, mental, social, spiritual status, taking all possible interventions for those who are at high risk for falls. Moreover, allow the patient to participate in a program of regular exercise and gait training, exercises to strengthen the muscles, improve balance, and increase bone density. Increased physical conditioning reduces the risk for falls and limits injury that is sustained when fall transpires. Land and water-based exercise programs may be similarly beneficial on balance and gait and thereby reduce the risk for falls. Water exercise may contribute a positive benefit on balance and gait for women 65 years and older. Water-based exercise could be regarded as an alternate exercise activity for older people, significantly if land-based exercise is challenging due to chronic musculoskeletal conditions [34-36].

The result of study clarified that most of the studied nurses reported that those who experienced dizziness or palpitations, but nearly three quarters of them mention that those who are using assistive device. These results may be due to gaining process that negatively effect on elderly health. The outcome supported with study by Kim, & Jeong, (2015) who conducted study about "Effects of nursing interventions for fall prevention in hospitalized patients" and proved that most of the studied nurses reported that patient who experienced dizziness or palpitations high risk to fall [37].

The result of the present study illustrated that the majority of the studied nurses reported that they make sure the call system within reach, Bed in low position and Personal item within reach, while more than half of them mention that they don't ensures that elderly women patients are moved from the bed with assistance from a nurse or caregiver. these findings in same line with study published by Innab, (2022) entitled "Nurses' perceptions of fall risk factors and fall prevention strategies in acute care settings in Saudi Arabia" and

showed that most of the studied nurses had good practice regarding keep Bed in low position and Personal item within reach [38].

Regarding practice of the studied nurses about demonstrates that the majority of the studied nurses state that they are completing and documenting patient fall risk screening and assessment, Reporting falls to the physician and supervising nursing aides during applying the fall. These results may be due to effective training program and their experience years (about two thirds had experience than five years). on other hand, this finding disagreed with study by Asiri et al., (2018) who conducted study about " Fall prevention knowledge and practice patterns among home healthcare professionals in southern Saudi Arabia" and reported that less than half of the studied nurses had good competent practice regarding documentation [39].

Concerning on practice of the studied nurses regarding the fall risk assessment also includes an evaluation of medications that affect the risk of falling and mobility /balance the result of present study illustrated that more than two thirds of them report that Antihypertensive affect the risk of falling and mobility/balance, but more than half of them mention that Diuretic doesn't affect. This finding supported with study by Michalcova et al., (2020) who conducted study about "Inclusion of medication-related fall risk in fall risk assessment tool in geriatric care units" and represented that antihypertension risk to increase falling among elderly [40].

Conclusion:

According to their interpretation of score fall prevention measures; most of the studied nurses have moderate risk and slightly more than one quarter of them have high risk, whilst nearly two one fifth of them have low risk.

Recommendations

Based on the findings of the study results, the following recommendations were advocated:

1. Foster collaboration between nurses, physicians, physiotherapists, and other healthcare professionals to collectively address fall prevention.
2. Conduct routine audits of fall prevention practices and provide feedback to nurses and healthcare teams.

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