Prevalence of Falling among Elderly at Home in Rural Area of Zagazig District

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Abstract:

Background: Falls are a major cause of morbidity and mortality among older people. **Aim of the study:** To identify the prevalence of falling among elderly at home in rural area of Zagazig district. **Setting**: It was conducted in Shieba village at Zagazig district. **Sample:** It consist of 236 community dwelling elderly**. Tools:** Three tools were used in the present study. An interview questionnaire sheet which composed of four parts; the first part entails data about demographic characteristics, the second part composed of questions to collect data about past and present history of chronic diseases, any sensory or motor disabilities; and medications. The third part contains past and present history of falling, and the fourth part covered home environmental condition. Modified Falls Efficacy Scale for measuring fear of falling, Timed Up & Go test Scale for measuring basic functional mobility. **Results**: The study findings revealed that approximately two-third of the elderly in the study sample had previous falling, mostly at home in the bathroom due to slipping and dizziness. Also, the majority of fallers were taking more than one medication. Most elderly have low confidence in performing the activities of daily life and abnormally long timed up-and-go test. A number of intrinsic, behavioral, and environmental factors seem to increase the risk of falling. About two-thirds of the elderly had subsequent phobias of falling again. **Conclusion;** The falls were higher with increasing age, among females, lower educational level, elderly working, and the unmarried. **Recommendations:** Health programs should be proposed to help improve home environment, with teaching the elderly the proper actions to be taken while falling. Further research is suggested to explore the effectiveness of nursing interventions with multiple approaches for the falling among elderly.

Keywords: Elderly, Falls, Prevalence, Rural area

Introduction:

Elderly people are a significant part of our society. "Old people" was defined as "an individual aged 60 or above." The population of the old people above 60 years old in the world will increase more than three times until 2050. [1] The United Nations stated that elderly in Egypt constituted 6.5% in the year 2005 and in 2050 will be 20.8% of the total population [2].In Egypt, the number of elderly persons reached 5.8 million in 2011 with 7.3% of total population.[3] With the rapidly increase in number of the elderly, the problem of falls has taken on ever increasing importance. The elderly are especially prone to falls because of age-related physiological as well as pathological changes of various body systems. [4]

In Egypt, according to the central agency for public mobilization and statistics (CAPMAS) nearly 55% of the accidents occurring to the residents of the elderly homes resulted from falling and fractures. [5] A study done in Ain-shams University Hospital reported that 80% of the elderly who suffer from fracture were due to simple falls. [6] In Alexandria, a study found that 21.8% of the elderly living in the different governmental institutions for the elderly persons suffered from falls.[7] Another study in the

Alexandria reported that the prevalence of falls in the elderly homes was 32.1%.[8] In Mansoura, 41.2% of the total elderly living in the Menyet Sandoup village had history of falls in the last 12 month.[9]

There is a severe shortage of health care providers in many rural areas that does not occur in many urban populations so health care services for many rural residents are less accessible, more costly to deliver, narrower in range and scope, and fewer in number than those available to their urban counterparts. This is true for most professional services, including those of physicians, dentists, nurses, and social workers, and is particularly true services for the elderly in rural areas**.** [10]

According to WHO [11] falling was defined as "in accidentally coming to rest on the ground, floor or other lower level, excluding intentional change in position to rest in furniture, wall other objects". The risk factors for falls can generally be categorized into intrinsic, or patient-related, behavioral and environmental factors. The intrinsic factors include advanced age, chronic diseases, muscle weakness and gait or balance disorders. Behavioral factors are related to risk-taking, such as medications intake, alcohol consumption or hazardous activities. The environmental risks can frequently be encountered inside or outside the home, e.g., obstacles on the floor or poor light. [12]

Falls can have physical, psychological, and economic consequences. Injuries sustained from falls include broken bones, superficial cuts and abrasions to the skin as well as connective and soft tissue damage.[13] A serious consequence of sustaining a fall is also the 'long-lie', which is identified as involuntarily remaining on the ground for an hour or more following a fall. [14]

The roles of geriatric nurse have plenty knowledge of the process of aging and are specialized in assessing and implementing the different needs of the elderly**.** [15] The gerontological nurse plays a central role in reducing the negative consequences of falls through identification of the risk factors, screening programs; close monitoring of those on multiple medications, follow-up for cases with history of multiple falling, encouraging physical activity, and using of the timed up-and-go test to monitor the functional ability. [16]

Significance of the study:

Falls are a significant health problem with serious physical, psychological, and social consequences, particularly among elderly. Falling is a common problem among elderly people and leads to significant morbidity and mortality. About one third of the people aged 75 years or older living in the community falls at least once a year, and previous falls are associated with fear of falling and functional decline. [17]

Rural families in general tend to be poorer than their urban counterparts. In general, elderly people in rural areas have poorer perception of their overall health and functional status than their urban counterparts. Studies show that rural elderly are less likely to engage in preventive behavior which increases their exposure to risk. [18] There are barriers to health care in rural areas, great distance to obtain services, low incomes, lack of personal transportation, unavailable public transportation, and lack of telephone services. Unavailable outreach services, unpredictable weather and or travel conditions, inability to pay for care, inadequate provider attitudes and understanding about rural populations. [19]

Aim of the study:

The aim of the current study was to identify prevalence of falling among elderly at home in rural area of Zagazig district through the following objectives:

- Identify causes of falling among elderly at home.
- Estimate the prevalence of falling among elderly at home in rural area of Zagazig district.

Research questions:

- What are the causes of falling among elderly at home?
- What is the prevalence of falling among elderly at home?

Subjects and methods

Research design:

Across sectional design was used in conducting the study.

Setting:

The study was conducted in Shieba village at Zagazig district because it is available setting; people were cooperative with the faculty of nursing.

Sample:

Purposive sample was used to conduct the study. Assuming the prevalence of falls 30% Chu et al.[20], Yoshida-Intern[21] and Lord et al.[22] Power of study 80%, confidence interval 95% and population size 2551 living in this area. The sample size estimated to be 206. Allowing for dropout by 15%. So the sample was 236 elderly subjects and having the following inclusion criteria:

- Age: 60-80 years.
- Both sexes (male& female).
- Permanently living in the study setting.
- Not bed ridden, Not institutionalized and assume their daily activities, and independent and not mentally impaired.

Tools of data collection:

Three tools were used to collect the necessary data

Tool (1): Structured interview questionnaire: composed of four parts:

- **Part (1):** Demographic characteristics such as age, sex, marital status, education, occupation, etc.
- **Part (2):** Past history of chronic diseases such as hypertension, diabetes mellitus, etc; present history of any sensory or motor disabilities; incontinence; medications (number of drugs taken per day, and side effects of drugs); physical activity; sleep disorders.
- **Part (3):** Past and present history of falling: cause, frequency, site, severity, diagnosis, associated conditions, complications, etc.
- **Part (4):** Home environmental condition: home entrance (stairs, doorstep, lighting); inside (stairs, floors, furniture, doorstep, lighting); bathroom (floors, toilet, tub). The presence of any hazard in each of these items was considered unsafe.

Tool (2): Modified Falls Efficacy Scale (MFES) for measuring fear of falling: This was adapted from Hill et al. [23] It was translated into Arabic by the researcher. The scale is a one-page form, consisting of 14 questions each related to a particular activity (for example getting dressed, taking a bath, crossing roads etc).The questions aim to determine how confidently clients feel they are able to undertake each activity on a scale of 0 (not confident at all) to 10 (completely confident). Scoring is based on who set a mean of 7 as a cutoff point for the scale, where a lower score is associated with a higher risk of falling. Total items from 1-10 are summed (14×10) equal 140. If the elderly had from 98 and higher is considered high confidence in performing daily activities (7-10). If the elderly had lower than 98 is

considered low confidence in performing daily activities (< 7).

Scoring system:

On a scale of 0 to 10, how confident are you that you can do each of these activities without falling, with 0 meaning "not confident/not sure at all", 5 being "fairly confident/fairly sure", and 10 being "completely confident/completely sure"?

Tool (3): The timed up and go test scale for measuring basic functional mobility: This is a quick screening test for detecting balance problems in older adults and to measure basic functional mobility. Adapted from Podsiallo and Richardson [24], it was translated into Arabic by the researcher. The test requires the individual to come and stand from a chair, walk 3 meters, turn around, walk back to the chair and sit down. Safety requires the individual to wear a sturdy belt and be guarded during the test. Timing begins when the individual clears the seat of the chair and ends when contacts with the seat again. A performance of 10 seconds or less indicates independence in balance with mobility skills and in most activities of daily living and outside activities. A performance of 30 seconds or more indicates dependence in balance and mobility skills and in most activities of daily living and outside activities. One practice trial is performed prior to the testing.

Scoring system:

< 10 seconds = normal

< 20 seconds = good mobility, can go out alone, mobile without a gait aid.

< 30 seconds = problems, cannot go outside alone, requires a gait aid.

A score of more than or equal to fourteen seconds has been shown to indicate high risk of falls.

Content validity and reliability:

Content validity of the tools was done by five experts: (3 Geriatrics and 2 Community nursing. The reliability of the modified fall efficacy scale. This was done using the internal consistency method. The reliability proved to be high with a Cronbach alpha coefficient 0.92 and the reliability of the time up and go test also it was done using the internal consistency method. It proved to be high with a Cronbach alpha coefficient 0.85.

Pilot study:

A pilot study was carried out on 10% of calculated elderly sample to test the clarity and applicability of the tools of data collection, and estimating the time needed for assessment. The necessary modifications were done in the tools according to the results of the pilot study. The subjects sharing in the pilot study were not included in the main study sample.

Field work:

After obtaining official permissions from official authorities based on a letter addressed form the Faculty of Nursing, the researcher started the process of sampling by choosing the houses through multistage sampling. In each selected house, the researcher introduced herself, and asked for the presence of an eligible elderly. If present, the researcher started to explain to him/her the purpose and nature of the study and invited him/her to participate. Once an oral consent was obtained, the selected elderly subject was personally interviewed using the first tool. Then, the modified falls efficacy scale for measuring fear of falling was completed. The researcher then filled the home environment part of the questionnaire through direct observation.

After the interview, the researcher explained to the subject the timed up and go test and its purpose in assessing the functional ability of the elderly person. The researcher then performed the test as role play in front of subject.

After understanding the steps of the test, the elderly person was asked to perform it. The researcher used a stopwatch to calculate the time. The test was repeated 3 times and the shortest time was taken.

The fieldwork was carried out through home visits four days/week (Saturday, Sunday, Monday, Tuesday). The interviewing and the performance of the test took about one hour for each participant. The fieldwork extended from September 2012 up to the end of March 2013.

Administrative and ethical considerations:

An official permission was taken from official authorities to carry out the study based on a letter addressed form the Faculty of Nursing explaining the study aim and its procedures. The study protocol was approved by pertinent committees at the Faculty of Nursing. Oral informed consent for participation was obtained from each subject after full explanation of the aim of the study. Participants were given the opportunity to refuse participation, and they were notified that they could withdraw at any stage of filling the questionnaire. They were assured that the information would be confidential and used for research purpose only.

Statistical design:

Data entry and statistical analysis were done using SPSS 16.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and medians for quantitative variables. Cronbach alpha coefficient was calculated to assess the reliability of the MFES scale and TUGT through its internal consistency. Qualitative categorical variables were compared using chi-square test. Whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, Fisher exact test was used instead. In larger than 2x2 cross-tables, no test could be applied whenever the expected value in 10% or more of the cells was less than 5. Spearman rank correlation analysis was used for assessment of the inter-relationships among quantitative variables and ranked ones. In order to identify the independent predictors of falls, multiple logistic regression analysis was used. Statistical significance was considered at p-value <0.05.

Results:

Figure (1): illustrates that about two-thirds (61.0%) of the elderly in the study sample had previous falls.

Table (1): Shows the relation between previous falling and elderly socio- demographic characteristics. It indicates statistically significant relation with their age (p=0.01), gender (p<0.001), education (p=0.023), job status (p<0.001), and current marital status (p=0.005). As noticed from the table, the falls were higher with increasing age, among females, lower educational level, those working, and the unmarried.

Figure (2): illustrates that the majority of the elderly reported taking more precautions after the fall either often (41.0%) or always (47.9%).

Table (2): Demonstrates statistically significantly relation between previous falling among the elderly having hypertension (p=0.005), GIT problems (p=0.04), rheumatoid (p=0.01), urinary incontinence (p=0.001), and nocturnal frequency (p=0.001). As regards the relation with disability, the table points to statistically significantly relation between falls among the elderly having disability (p<0.001), visual (p=0.003), hearing (p=0.03), and equilibrium (p=0.005) problems.

Table (3): Concerning the relation between previous falling and elderly history of previous falls, table 3 shows statistically Significant relation with

the intake of antihypertensive medications (p=0.001), as well as with the effect of medications on alertness (p=0.001), equilibrium (p<0.001), and Memory (p=0.01). The table also shows that the falls were significantly higher among those who do not walk daily (p<0.001), and those having insomnia (p=0.002).

Table (4): Illustrate the relation between previous falling and the safety inside home, Table 4 demonstrates statistically significant relation with disordered furniture (p=0.005), and with sharp edges (p=0.007).However, other variables describing safety inside home didn't significantly associated with fall.

Tables (5): Presents the relation between previous falling and the safety of the bathroom. It reveals statistically significant relation with crowded hallway (p=0.04), and wet floor (p=0.005). As noticed from the table, the falls were higher more crowding and wet floor. However, other variables describing bathroom safety did not significantly association with falls.

Table (6): Displays the results of the timed up-and-go test. It shows that the majority (90.3%) have abnormal test findings of mobility. The time ranged between 7 and 120 seconds, with median 27 seconds.

Table (7): Concerning the relation between previous falling and elderly reported confidence in performing the ADL, Table 7 demonstrates statistically Significant relation with the activities of clothing (p<0.001), bathing (p<0.001), sitting and getting up from chair (p=0.03), and bed (p=0.008), getting phone and door bell (p<0.001), walking inside home (p<0.001), going to toilet (p<0.001), and using public transportation (p=0.03) and previous falling. Also, the table shows that significant different (0.02) between previous falling and the low total confidence.

Table (8): The best fitting multiple logistic regression model for the occurrence of previous falls is presented in Table 8. It shows that the statistically significant independent predictors of falling are female sex, higher income, disability, and longer test time. As indicated by the Odds Ratios, gender is the most important predictor, while the timed up-and-go test is the least.

Discussion:

The mean age of the elderly in the present study is close to the means reported among elderly fallers in India 69.8 years [25]. In agreement with this, Moniz-Pereira et al.[26] in Brazil found that age was not a risk factor for falling or recurrent falling. They thus concluded that falling seems not to be an inevitable consequence of ageing.

The present study sample had slightly more women than men. This is expected in this age group given the higher life expectancy of women. However, another possible cause could be the higher availability of women at home during the data collection period. It may also reflect the higher risk of falling among women compared with men, which has been confirmed in the current study through univariate and multivariate analyses.[27]The preceding present study finding is in agreement with Merle [28] in Sweden who showed that Swedish women fall more often than men and sustain injuries more often when they fall.

According to the present study findings, most elderly people were having chronic diseases and were on regular medications. The number of medications reached to nine, with a median three. This is slightly lower than the figure reported among the elderly in USA, where the number of medications was on average 4.5

prescription and 2 over-the-counter medications per day. [29] The lower figures in the present study might be explained by the lower income and other economic reasons. Meanwhile, in Greece the risk of falling was shown to increase significantly if more than four medications are taken, regardless of the type of drug. [30]

Hypertension was shown to have a significant association with falling. This could be attributed to using medications that increase the risk of falling due to postural hypotension. In fact, the study findings indicated a significant association between falls and the use of antihypertensive drugs. Moreover, the risk increased when these medications were affecting their alertness, equilibrium, and memory. In line with this in Netherlands and polypharmacy is associated with an increased falls risk. [31, 32]

Approximately one-third of the elderly in the present study sample were having urinary incontinence, and about two thirds had nocturnal frequency. The rate of urinary incontinence is higher than that reported by Mohamed [9] in Mansoura who stated that urinary incontinence constituted slightly less than one fifth of the study (12.7%). The urinary incontinence and nocturnal frequency would increase the risk of falling because of the urgency leading the person to hurry to the toilet without taking necessary precautions to avoid falling. Moreover, in nocturnal frequency, the elderly wakes up in haste, may be not fully alert, and walks quickly to the toilet with no sufficient lighting, which further increases the risk of falling. The study findings in fact demonstrated significant associations between these two disorders and the rates of previous falls. The result is in agreement with a study in Alexandria which revealed that urinary incontinence was a risk factor to falls. [7]

According to the present study findings, more than three fifth of the elderly gave a history of previous falling (61%). This rate is obviously higher than previously reported figures. For instance, Tinetti et al. [33] in Canada mentioned that more than one-third of community-living adults ages 65 years or older fall each year. The lower rates in these studies might be attributed to differences between the environment in a rural area of a developing country and the elderly-friendly environments in developed countries.

The present study findings also showed that most falls occurring at home were in the bathroom. This is quite possible since the bathroom poses many risk factors for falling. The most common risk factors identified were the crowded hallway to bathroom, the wet floor, and the absence of handrails. Moreover, some of the houses had bathtubs, and the elderly reported using them without help. The results are in agreement with Santos et al. [34] in Australia who revealed a strong statistical relationship between excessive personal objects in the homes of the elderly and falls.

The visual and hearing disabilities had significant associations with falling. Moreover, the frequency of falling had significant correlations with the number of disabilities. More importantly, disability turned to be an independent predictor of falling in multivariate analysis. The findings are quite possible since these sensory disabilities would certainly expose the elderly to higher risk of falling by stumbling or bumping due to disability of vision, or by lack of attention to sound cues that may warn him/her against certain risk factors. The

findings agree with Gure et al.[35] in Finland who stated that falling was associated with hearing and vision disabilities among older persons.

Apart from the physical sequels of falling, there are also some possible psychological sequels such as the phobias of falling again. In the present study, approximately two-thirds of the elderly had such phobias following their previous falls. Such fears or phobias may have positive impacts in the form of more precautions as noticed among the majority of the elderly of the present study. However, the negative side is that these phobias may discourage them from carrying out any physical activities, which may end up with being bed-ridden. The finding is in line with Hellstrom et al. [36] in USA who reported that older persons with history of pervious falls had higher rate of fear of falling and those with fear of falling had lower fall related self-efficacy, increased level of anxiety and depression, more activity avoidance and need of assistive device.

On the same line, Rubenstein [37] in USA mentioned that the post-fall anxiety syndrome is a sequel of falling in which an individual down-regulates activity in a perhaps overcautious fear of falling; this in turn further contributes to deconditioning, weakness and abnormal gait and in the long run may actually increase risk of falls. Additionally, in Brazil the fear of falling has been associated with an increasing the risk of falling episodically by almost 80%.This would further lead to reductions in quality of life associated with the restriction of activity, loss of confidence, and reduction of independence in London Moniz-Pereira et al. [26]

Conclusion:

Falls among elderly is a serious problem associated with high morbidity. The risk of falling is higher among females, those with higher income, disability, and longer timed up-and-go test time.

Recommendations:

The health care system should give more emphasis to geriatric nursing services. The geriatric health nursing has critical role through identification of the risk factors, screening programs, close monitoring of those on multiple medications, follow-up for cases with history of multiple falling, encouraging physical activity, and using of the timed up-and-go test to monitor the functional ability. Outreach programs are proposed to help improve home environment, with teaching the elderly the proper actions to be taken while falling and after the event; the developed booklet may be used for this purpose. Further research is suggested to explore the effectiveness of nursing interventions with multiple approaches.

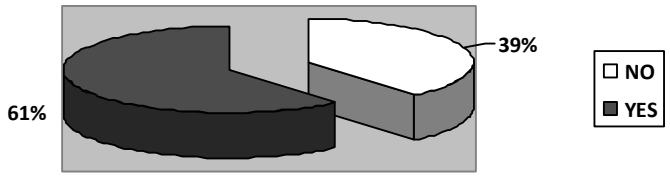

Figure (1): History of previous falls as reported by the elderly in the study sample (n=236)

Table (1): Relation between the history of previous falls and elderly socio-demographic characteristics

Socio-demographic characteristics	Previous fall				X^2 Test	p-value
	No(n=92)		Yes (n=144)			
	No.	%	No.	%		
Age (years):						
▪ 60-	67	45.6	80	54.4		
▪ 70-	21	32.8	43	67.2	9.26	0.01*
▪ 80	4	16.0	21	84.0		
Gender:						
▪ Male	62	58.5	44	41.5	30.79	<0.001*
▪ Female	30	23.1	100	76.9		
Education:						
▪ Illiterate/ Read/write	58	34.9	108	65.1	5.29#	0.023*
▪ Basic/ Secondary	19	43.2	25	56.8		
▪ University	15	57.7	11	42.3		
Job status:						
▪ Not working	54	59.3	37	40.7	25.81	<0.001*
▪ Working	38	26.2	107	73.8		
Current marital status:						
▪ Unmarried	26	28.0	67	72.0	7.84	0.005*
▪ Married	66	46.2	77	53.8		
Crowding index:						
▪ <1	32	37.2	54	62.8	0.18	0.67
▪ 1+	60	40.0	90	60.0		
Income:						
▪ Insufficient	8	34.8	15	65.2	0.19	0.66
▪ Sufficient	84	39.4	129	60.6		
Live:						
▪ With family	85	39.9	128	60.1	0.78	0.38
▪ Alone	7	30.4	16	69.6		

(*) Statistically significant at p<0.05 *# chi-square for trend*

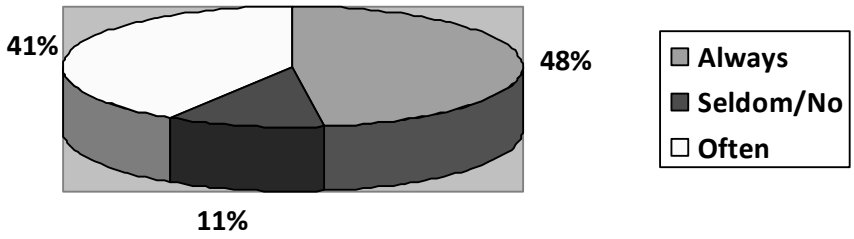

Figure (2): Precautions following previous falls as reported by the elderly in the study sample (n=236)

Table (2): Relation between the history of previous falls and elderly health characteristics

Health characteristics	Previous fall				X^2 Test	p-value
	No (n=92)		Yes (n=144)			
	No.	%	No.	%		
Have chronic disease	68	73.9	119	82.6	2.60	0.11
Have:						
▪ Diabetes mellitus	33	35.9	59	41.0	0.61	0.43
▪ Hypertension	35	38.0	82	56.9	8.02	0.005*
▪ Cardiac	8	8.7	23	16.0	2.60	0.11
▪ Renal	2	2.2	9	6.3	Fisher	0.21
▪ Liver	12	13.0	27	18.8	1.33	0.25
▪ GIT	4	4.3	18	12.5	4.41	0.04*
▪ Parkinson	1	1.1	7	4.9	Fisher	0.15
▪ Neoplasms	1	1.1	5	3.5	Fisher	0.41
▪ Rheumatoid	1	1.1	13	9.0	6.34	0.01*
▪ Arthritis	7	7.6	10	6.9	0.04	0.85
▪ Epilepsy	0	0.0	1	0.7	Fisher	1.00
▪ Urinary incontinence	17	18.5	55	38.2	10.29	0.001*
▪ Stool incontinence	1	1.1	8	5.6	Fisher	0.09
▪ Nocturnal frequency	52	56.5	110	76.4	10.29	0.001*
Have disability:	16	17.4	57	39.6	12.94	<0.001*
▪ Visual	9	9.8	37	25.7	9.06	0.003*
▪ Hearing	6	6.5	23	16.0	4.65	0.03*
▪ Motor	2	2.2	9	6.3	Fisher	0.21
▪ Equilibrium	7	7.6	31	21.5	8.05	0.005*

(*) Statistically significant at p<0.05

Table (3): Relation between the history of previous falls and elderly medication history

medication history	Previous fall				X^2 Test	P-value
	No (n=92)		Yes (n=144)			
	No.	%	No.	%		
On regular medication	70	76.1	121	84.0	2.29	0.13
Medication						
▪ Antihypertensive	36	39.1	87	60.4	10.19	0.001*
Antihistaminic	2	2.2	5	3.5	Fisher	0.71
▪ Hypnotic	1	1.1	6	4.2	Fisher	0.25
▪ Sedative	2	2.2	4	2.8	Fisher	1.00
▪ Antidepressant	1	1.1	5	3.5	Fisher	0.41
▪ Chemotherapy	0	0.0	2	1.4	Fisher	0.52
▪ Others (not affecting equilibrium)	46	50.0	90	62.5	3.59	0.06
Medications affect:						
▪ Alertness	4	4.3	28	19.4	10.92	0.001*
▪ Equilibrium	12	13.0	60	41.7	21.69	<0.001*
▪ Memory	5	5.4	24	16.7	6.57	0.01*
Walk daily	66	71.7	72	50.0	10.93	<0.001*
Night sleep:						
▪ Normal	49	53.3	48	33.3		
▪ Insomnia	43	46.7	96	66.7	9.21	0.002*

(*) Statistically significant at p<0.05

Table (4): Relation between the history of previous falls and inside home safety

Home safety	Previous fall				X^2 Test	P-value
	No (n=92)		Yes (n=144)			
	No.	%	No.	%		
Inside home						
There are stairs	40	43.5	58	40.3	0.24	0.63
Stairs are:						
▪ Slippery	19	47.5	33	56.9	0.84	0.36
▪ Broken	7	17.5	16	27.6	1.34	0.25
▪ With no handrail	7	17.5	3	5.2	Fisher	0.09
▪ Insufficient light	14	35.0	21	36.2	0.02	0.90
▪ With stumbling objects	3	7.5	11	19.0	2.54	0.11
Total unsafe inside stairs	40	43.5	58	40.3	0.24	0.63
Floors:						
▪ Slippery	59	64.1	102	70.8	1.16	0.28
▪ Covered	83	90.2	134	93.1	0.61	0.43
Covering:						
▪ Rugs (stumbling)	71	85.5	111	82.8	0.28	0.60
▪ Torn						
Total unsafe floor	89	96.7	142	98.6	Fisher	0.38
There is a door step	13	14.1	21	14.6	0.01	0.92
The doorstep is:						
▪ Slippery	5	38.5	7	33.3	Fisher	1.00
▪ Of same color as floor	6	46.2	13	61.9	0.81	0.37
▪ Raised	11	84.6	20	95.2	Fisher	0.54
▪ Broken	0	0.0	6	28.6	Fisher	0.06
Total unsafe doorstep	13	14.1	21	14.6	0.01	0.92
Lighting:						
▪ Insufficient	25	27.2	36	25.0	0.14	0.71
▪ Total unsafe lighting	25	27.2	36	25.0	0.14	0.71
Furniture:						
▪ Crowded	14	15.2	28	19.4	0.69	0.41
▪ Disordered	16	17.4	49	34.0	7.79	0.005*
▪ Has sharp edges	17	18.5	50	34.7	7.29	0.007*
▪ No handrails	92	100.0	144	100.0	0.00	1.00
▪ Cables on floor	21	22.8	43	29.9	1.41	0.24
Total unsafe furniture	92	100.0	144	100.0	0.00	1.00

(*) Statistically significant at p<0.05

Table (5): Relation between the history of previous falls and bathroom safety

Bathroom safety	Previous fall				X^2 Test	p- value
	No(n=92)		Yes (n=144)			
	No.	%	No.	%		
Bathroom:						
▪ Crowded hallway	17	18.5	44	30.6	4.27	0.04*
▪ Indistinguishable door	50	54.3	77	53.5	0.02	0.90
▪ No handrails	90	97.8	144	100.0	Fisher	0.15
Floor:						
▪ Slippery	76	82.6	117	81.3	0.07	0.79
▪ Wet	23	25.0	62	43.1	7.94	0.005*
▪ With rugs	9	9.8	10	6.9	0.61	0.43
Insufficient light	24	26.1	39	27.1	0.03	0.87
Toilet:						
▪ Seat	45	48.9	68	47.2		
▪ Ground	42	45.7	73	50.7	2.19	0.33
▪ Both	5	5.4	3	2.1		
Bathtub:						
▪ Present	15	16.3	29	20.1	0.54	0.46
▪ Used in bathing	12	80.0	22	75.9	Fisher	1.00
▪ Used without help	1	8.3	3	13.6	Fisher	1.00
Total unsafe lighting	92	100.0	144	100.0	0.00	1.00
Total unsafe inside home	92	100.0	144	100.0	0.00	1.00
Total number of hazards:						
▪ 3-4	23	25.0	37	25.7		
▪ 5+	69	75.0	107	74.3	0.01	0.90

(*) Statistically significant at p<0.05

Table (6): Timed up-and-go test results among elderly in the study sample (n=236)

Timed up and go test	Frequency	Percent
Timed up-and-go test (seconds):		
▪ <=10 (normal)	23	9.7
▪ >10 (abnormal)	213	90.3
▪ Range	7-120	
▪ Median	27.0	

Table (7): Relation between the history of previous falls and elderly Reported Confidence in performing daily life activities

Confidence in performing daily life activities	Previous fall				X^2 Test	p-value
	No (n=92)		Yes (n=144)			
	No.	%	No.	%		
Confident in (7-10)						
▪ Clothing	72	78.3	77	53.5	14.82	<0.001*
▪ Preparing light meal	48	52.2	64	44.4	1.34	0.25
▪ Bathing	66	71.7	64	44.4	16.90	<0.001*
▪ Sitting/getting off chair	63	68.5	78	54.2	4.78	0.03*
▪ Sitting/getting off bed	64	69.6	75	52.1	7.09	0.008*
▪ Getting phone/door bell	66	71.7	67	46.5	14.51	<0.001*
▪ Walking inside home	65	70.7	66	45.8	14.00	<0.001*
▪ Going to toilet	73	79.3	76	52.8	17.03	<0.001*
▪ Doing simple home chores	29	31.5	39	27.1	0.54	0.46
▪ Doing simple shopping	20	21.7	33	22.9	0.04	0.83
▪ Using public transportation	28	30.4	27	18.8	4.29	0.03*
▪ Crossing road	25	27.2	27	18.8	2.32	0.13
▪ Doing light work (laundry/field)	19	20.7	28	19.4	0.05	0.82
▪ Using home stairs	36	39.1	42	29.2	2.52	0.11
Total confidence:						
▪ High (7-10)	45	48.9	48	33.3		
▪ Low (<7)	47	51.1	96	66.7	5.71	0.02*

(*) Statistically significant at p<0.05

Table (8): Best fitting multiple logistic regression model for the occurrence of fall

Item	Wald	Df	P	OR	95.0% CI for OR	
					Upper	Lower
▪ Sex (ref.	29.91	1.00	<0.001	5.75	3.07	10.75
▪ Income	5.02	1.00	0.03	2.11	1.10	4.04
▪ Disability	10.08	1.00	<0.001	3.32	1.58	6.96
▪ Test time	9.71	1.00	<0.001	1.03	1.01	1.05
▪ Constant	25.81	1.00	<0.001	0.01		
Nagelkerke R Square: 0.36						
Hosmer and Lemeshow Test: p=0.953						
Omnibus Tests of Model Coefficients: p<0.001						

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انتشار السقوط بين المسنين بالمنازل في منطقه ريفية بمدينه الزقازيق

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مقدمة:

يعتبر السقوط من أكثر المخاوف شيوعا وخطورة التي تواجه كبار السن ومع الزيادة السريعة في عدد المسنين تأخذ مشكلة السقوط أهمية متزايدة من أي وقت مضي، ويشمل ذلك السقوط داخل وخارج المنزل ويعد سببا رئيسيا للمشاكل المرضية والوفيات بين المسنين. وعوامل الخطر للسقوط قد تكون داخلية أو ذات صلة بالمريض أو سلوكه أو بيئته. إن الوقاية من الإصابات المرتبطة بالسقوط لدي كبار السن هي من أهم أهداف الصحة العامة ؛ وهناك أدلة قوية علي أن التدخلات متعددة الوسائل مثل الوقاية من السقوط والتشجيع علي ممارسة التمارين الرياضية هي فعالة في الحد من السقوط. ومع ذلك تشير الدراسات إلي أن المسنين في المناطق الريفية هم أقل عرضة للانخراط في السلوك الوقائي الذي يزيد من تعرضهم لمخاطر السقوط.

الهدف من الدراسة:

تهدف هذه الدراسة إلى معرفة انتشار السقوط بين كبار السن في المنزل بمنطقة ريفية بمدينة الزقازيق. وقد تحقق هذا الهدف من خلال تحديد أسباب حدوث السقوط بين كبار السن في المنزل ووضع تعليمات إرشادية لمنع السقوط.

عينة ومكان الدراسة:

شملت الدراسة عينة مكونة من ٢٣٦ مسن تتراوح أعمارهم بين ٦٠ إلي ٨٠ سنة فأكثر، ويكون المسنين من كلا الجنسيين ذكورا وإناثا والذين يعيشون بشكل دائم في مكان الدراسة حيث لا يكون المسن داخل مؤسسه أو طريح الفراش أو غير معاق عقليا, وقد تم اختيارهم باستخدام تقنية أخذ العينات متعددة المراحل. أجريت الدراسة في قرية شيبة بمدينة الزقازيق.

أدوات جمع البيانات :

تم تجميع البيانات الخاصة بالدراسة باستخدام ثلاثة أدوات:

١. استمارة استبيان للمقابلة تتكون من أربعة أجزاء لجمع البيانات اللازمة حول كبار السن موضوع الدراسة مثل البيانات الديموجرافية وتاريخ الأمراض المزمنة.

٢. مقياس الخوف من السقوط المعدل وفاعليه تأثيره علي المسن.

٣. اختبار القيام والسير التوقيتي لقياس الحركة الوظيفية الاساسيه للمسن.

النتائج: أسفرت نتائج الدراسة عن الآتى :

- حدوث السقوط بين كبار السن هو مشكلة خطيرة ترتبط بارتفاع معدلات المرض وخطر السقوط هو أعلي بين الإناث ومع ارتفاع الدخل والعجز وطول وقت اختبار القيام والسير التوقيتي.
- أظهرت النتائج أن ٦١% من كبار السن في عينةالدراسة كان لديهم سقوط سابق ، ومعظمها حدث في المنزل وخصوصا في الحمام (٧٦,٦%)، والسبب الأكثر شيوعا كان الانزلاق (٦٥,٣%)، تليه الدوخة (٦٠,٤%).
- تبين أن غالبية المسنين(٩٠,٣%) لديهم نتائج غير طبيعية للحركة في وقت اختبار القيام والسير التوقيتي ، وتراوحت المدة بين ٧ و ١٢٠ ثانيه ،متوسط ٢٧ ثانية.
- كانت معدلات السقوط أعلي بفروق ذات دلالة احصائية مع زيادة العمر، وبين الإناث، وانخفاض مستوي التعليم، والعاملين، وغير المتزوجين.
- تم الكشف عن وجود علاقة إيجابية متوسطة وذات دلالة احصائية بين عدد مرات السقوط وطول وقت اختبار القيام والسير التوقيتي.
- كانت معدلات السقوط أيضا أعلي مع وجود الاعاقة البصرية والسمعية، ومشاكل التوازن، وأولئك الذين لا يمشون يوميا، ولديهم أرق، أو يعانون من ضغط الدم بفروق ذات دلالة احصائية.
- أظهرت النتائج معدلات سقوط أعلي بفروق ذات دلالة احصائية بين من سبق لهم السقوط، ومن يعانون من ضعف السمع

والتوازن، وبين أولئك الذين هم أقل ثقة في أداء أنشطة الحياة اليومية.

- تبين وجود علاقة ذات دلالة إحصائية بين معدلات السقوط وعدم ترتيب الأثاث في المنزل ووجود الحواف الحادة للأثاث ، وازدحام مدخل الحمام وبلل الأرضيات .

الخلاصة:

تخلص الدراسة إلى أن السقوط بين كبار السن هو مشكلة خطيرة ترتبط بارتفاع معدلات المرض وخطر السقوط هو أعلي بين الإناث ومع ارتفاع الدخل والعجز وطول وقت اختبار القيام والسير التوقيتي .

التوصيات :

على ضوء نتائج الدراسة فقد أوصى بالآتى :

يجب أن يعطي نظام الرعاية الصحية المزيد من التركيز علي خدمات رعاية المسنين وتمريض المسنين لديه أدوارا حاسمة من خلال تحديد عوامل الخطر والقيام ببرامج الفحص المبكر والرصد الدقيق للمسنين الذين يتناولون أدوية متعددة ومتابعة للحالات ذات تاريخ السقوط المتعدد وتشجيع النشاط البدني واستخدام اختبار القيام والسير التوقيتي لرصد القدرة الوظيفية للحركة، ويقترح عمل برامج توعية للمساعدة في تحسين بيئة المنزل؛ وتعليم المسنين الإجراءات المناسبة التي يجب اتخاذها في وقت السقوط وبعد وقوع الحدث ، ويمكن استخدام الكتيب الذي وضع في هذه الدراسة لهذا الغرض .ويقترح إجراء المزيد من البحوث لاستكشاف فعالية التدخلات التمريضية ذات النهج المتعددة.