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FALLS AMONG ELDERLY IN BAHRAIN: ASSOCIATION WITH COMMON RISK FACTORS

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ABSTRACT

Falls are very common especially among the elderly population. It affects the independence status of elderly and has an impact on morbidity and mortality among this population. Therefore, the aim of the study is to correlate between the risk factors of falling in general and the degree of association with this grouped of age. Also, aiming for preventing those causes by some recommendations. This study held in Salmaniya Medical Complex, Kingdom of Bahrain and other random health centers on the capital city with sample size of 300. The study designed as a cross-sectional study and the analysis of the questionnaires were provided by the SPSS program showing that out of 300 only 39% was female and 49% of the whole population was universally educated and on average of 25% of them were non or primary educated. Knee problems were not significant risk factor among elderly falling down while each of osteoporosis, rheumatic diseases and people on Calcium or vitamin D supplement had a highly significant P-Value and a high number of falling down cases.

KEYWORDS

Downfall, Elderly, Fall, Old-aged and Overage.

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INTRODUCTION

Falling down is one of the most frequent episode around the world and across all age groups¹. On young age, falling down could not make a big consideration unless the cause were metabolic, inherited or fracture of the bones². On the other hand, this kind of injuries may take a special consideration if was happened among old-aged group of people. This comes across a lot of causes and risk factors which lead them to have a very serious injuries regarding to this episode such as the fractured hip which is one of the main risk factor and

also complication of falling down among this population³. Falling down in elder people may lead to a fatal injury and in 2012, there were 24,190 fatal and 3.2 million medically treated non-fatal fall related injuries and in 2015. Fall incidence as well as total cost increased with age and were higher among women. In general, approximately one third of persons aged more than or equal to 65 years and half of persons aged more than 80 years fall at least once per year, while in the hospital setting approximately 3% to 20% of⁴. In this study we mentioned the main causes falling down among elderly population.

Causes of falling down among elderly population

- Neuromuscular diseases.
- Poor vision
- Knee arthritis
- Inactivity
- Medications
- Postural hypotension
- Environment

Literature Review

We review several studies included in our reference list

Significance of the Study

No published data available on this subject in our region, and observation on emergency room indirectly indicate that this event is quite common among our elderly population.

Study Specific objectives:

Among convenient sample of elderly attending at several health centres' in Bahrain: we determine:

- Proportion of patients with history of fall.
- Any Association with demographic data.

Association with several known factors leads to falls in elderly include:

- Chronic diseases
- Vision problems
- Physical activities
- Using certain medication

Comparisons with other similar study in other countries.

METHODOLOGY⁵

Study sample / Population

A convenient sample was taken from six health centers and Salmaneya Medical Complex, selecting elderly and interviews them after taking their consent to participate on the study.

Study design

A cross-section study.

Data collection tool

The study group constructed a questionnaire to be used as the data collection tool (copy is attached).

Data entry and analysis

Data coded and entered in the computer using SPSS program. Numerical data (e.g. age) will be presented by mean and standard deviation. Categorical data will be presented as frequency and percentage.

RESULTS

The study population include 300 of the elderly aged people selected from 6 health centers and Salmana Medical Complex from a convenient sample evenly distributed.

Sixty two percent of our sample was male. Those above 60 represent sixty five percent, while the remaining 35% below.

Two third (63%) in our study sample were retired and one third still working, and ten percent reported unmarried., the level of education in listed in Table No.1.

Table No.1. Among 300 of elderly were interviewed and asked to do the questionnaire. 31% were not educated on the other side around the half of them were universally educated. 61 of them which is 20.7% were only primarily educated. 14% and 17.3% of them were respectively middle and secondary educated only.

Table No.2. The number of 300 elderly done the questionnaire which indicate the risk factors and their impact on elderly falling down. 81 of them do a sport and 99 of all population fall down regarding other related causes. 131 using calcium or Vitamin D and 75 of them never fall, but 49 did. Only 112 don't have knee problems and this showed a not significant P-Value regarding to falling. Also, Rheumatic diseases were not significant. On the other hand, people with fractured bone or who had

vision or balance problem will have a highly significant P-Value fluctuated between the factors. Osteoporosis on some of them was not a considerable risk factor while only less of the quarter falls down. Elderly who needs somebody to help them standing or a tool aiding walking were 148 and 175 respectively and less than one of fifth of them falling down easily (Figure No.1-3).

DISCUSSION

This study was set to find the association of some risk factors and falling down among the elderly in Bahrain.

It has been long known that falling down in elderly may cause a lot of consequences such as fractured hip. This study shows very different risk factors that lead to the falling down in this group of age.

Showing that 61% of our population were men and most of them experienced falling down and this supported by the WHO Global report on falls prevention in older age and national counseling of aging 2005, which indicated increasing in falling down more among men than women.

Our study shows the significant number between the non-educated and highly educated elderly and on this situation education might play a very important role in preventing falling down among the old aged person. This might be regarding to the economic state which of the country which may importantly effect the educational level of the person. Moreover, Each year an estimated 424 000 individuals die from falls globally of which over 80% are in low- and middle-income countries according to WHO Global report on falls prevention in older age and national counseling of aging 2005.

Those who have some chronic diseases experienced very little accidents of falling down while others who have degenerative problems like osteoporosis had been in the situation more. Fracture, knee problems and rheumatic diseases play an important role in falling among the elderly. NIH Osteoporosis and Related Bone Diseases, National Resource Center April 2005 showed that the fracture is one of the most important risk factors leading to falling down among all ages groups. Some of these elderly might fall because of nervous diseases such

as imbalance and others by an abused situation. Elder abuse can lead to serious physical injuries and long-term psychological consequences and 1 of 10 is abused according to WHO World report on ageing and health and Global status report on violence prevention 2014. Accidentally falling down is a minor risk factor according to Janine Farragher, Showed that accidental falls are common in the peritoneal dialysis population and often go unrecognized. Falls were associated with higher mortality risk.

Surprisingly, elderly who take calcium and vitamin D doesn't show improvement in falling down on our research group while The research done by Dr. Tareef Alama MB BS FRCPC among the prevention and spectrum of fall in elderly showed Vitamin D supplementation, particularly if given in doses of 800 IU/d or more, shown to reduce falls: number needed to treat of 14 to prevent 1 fall.

Aiming to prevent this high number of falling down by treating the main causes if they were medically because between 4-6% of elderly people have experienced some form of maltreatment in the home. WHO work to address the problem of elder maltreatment promotes the use of science-based approaches to better understand the magnitude and consequences; causes, and what works to prevent such violence, and to mitigate the harm suffered by victims.

In conclusion, number of ill elderly increased by the time which might let them experience falling down no matter of their education level.

QUESTIONNAIRE

Questionnaire about falling down among elderly in health centers.

Year:

1- Place

2-Time

3-Gener: Male Female

4-Age:

5- Career status: Retired Working

6-Marital status: Married Not Married

7- Education level: Uneducated Primary Middle Secondary universal

8-Did you done any kind of exercise “if No go to question 11 ‘:

Yes No

9-What kind of exercise you are doing?

10-How long you take?

11- Do you use any walk aiding tools “if No go to question 13’:

Yes No

12- What kind of tool you use?

13-Do you have any vision problem “if No go to question 15’:

Yes No

14-What is the problem?

15-Do you have any chronic diseases?

Yes No

16-17 are connected: Do you have any of this disease? If have other write it down.

Hypertension

Diabetes

Cardiovascular diseases

Knee problems

Rheumatic disease

Others

Don’t have.

17- Do you use any drug? If yes write it

18- Do you have any imbalance while walking “if No go to question 20”;

Yes No

19- Does the imbalance cause you fall down?

20- Do you want any help during standing?

Yes No Sometimes

21- Did you fall down during last year? “Of no go to question 25”

Yes No

22- How many times did you fall?

23- Did you injured so you visited the doctor?

Yes No

24- Did the injury take you to a surgery?

Yes No

25- Did you have any bone fracture?

Yes No

26- Do you have osteoporosis?

Yes No

Table No.1: Study sample according to level of Education

S.No		Level of Education	frequency	percent
1	Valid	Uneducated	95	31.7
		Primary	62	20.7
		Middle	42	14.0
		Secondary	52	17.3
		Universal	49	16.3
		Total	300	100.0

Table No.2: Risk factors might lead to falling down

S.No	Risk factors	P value	Chi 2	-	+	Fall (+)	Fall (-)
1	Sport making	HS	31	94	81	26	99
2	Tools help on walking	HS	54	48	148	72	32
3	Vision problems	HS	108	6	119	114	61
4	Chronic diseases	HS	95	10	98	110	82
5	Hyper tension	HS	34	95	158	25	22
6	Diabetes	HS	14	77	151	43	29
7	Cardiovascular Diseases	HS	27	107	171	13	9
8	Knee problems	NS	1.1	112	160	8	20
9	Rheumatic diseases	NS	2.3	117	167	3	13
10	Unbalance during walking	HS	67	41	147	79	33
11	Needs help when standing	HS	52	80	175	40	5
12	Fractures	HS	110	25	149	95	31
13	Osteoporosis	HS	45	46	139	74	41
14	Taking Calcium or Vitamin D	HS	36	45	131	75	49



Figure No.1: Gender

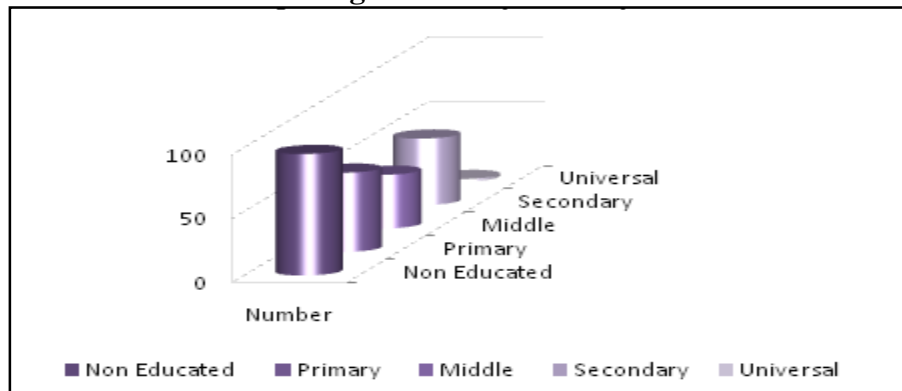


Figure No.2: Education level of the elderly

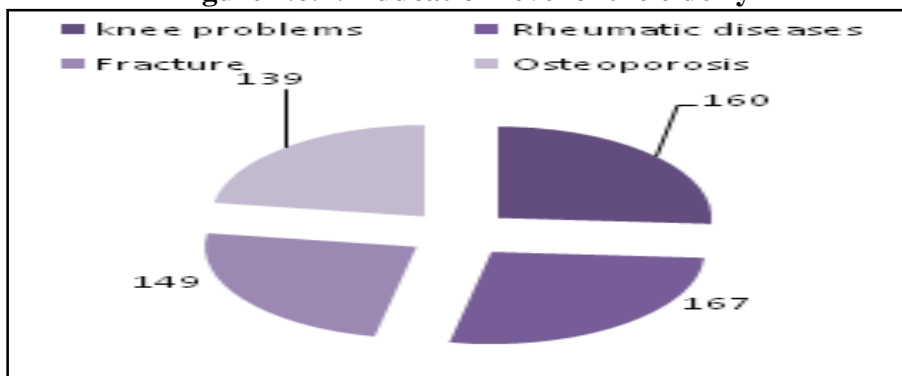


Figure No.3: Risk factors of falling in elderly

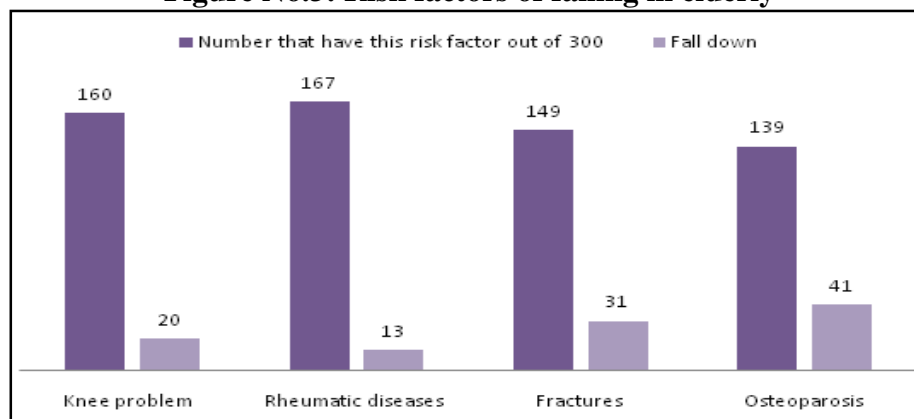


Figure No.4: Risk factors of falling in elderly

CONCLUSION

Falling down is a considerable episode among all ages. Elderly people who has impaired vision and chronic disease must be given more attention to avoid potential falls, educating public about prevention of falls in elderly is very important especially among families who take care of their elderly at home and also for medical staff who provide medical care for elderly patients in the hospital. Further studies are needed with representative sample so it can generalized the results for the population at large in our region.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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