

Impact of Fall Prevention Program upon Elderly behavior related Knowledge at Governmental Elderly Care Homes in Baghdad City

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Abstract:

Objective: To determine the effectiveness of fall prevention program upon elderly behavior related knowledge at governmental elderly care homes in Baghdad City.

Methodology: Baghdad city, during the period June 1st, 2014 to November 30st, 2014, selected a purposive "Non – probability" sample of (40) elderly men and women aged (60) years old and over who were resident in governmental elderly care homes "Dar Al- Mucineen Al Ceelakh and Dar Al- Mucineen Al Sader elderly care home", the data was collected through the use of constructed questionnaire that consist of (24) items, and interview technique to selected the data,, analysis of the data through used of Frequencies, Percentages, mean of score, Relative Sufficiency, Z test, Probability of (P value ≤ 0.05).

Results: Results the finding of data analysis related to the study that the mid age (70 – 74) years 16(40%). Gender, female group 21(52.5%). Occupation, majority are "unemployed", 18(45%), low levels of education, illiterate 9 (22.5%), marital status, majority of groups were reported at the single and widow 23 (57.5%), crowding index, less than (5) persons in each room, 40 (100%), type of the family, classified nuclear 28(70%), monthly income having insufficient, 16 (40%). Most of items of behavior risk factors had highly significant.

Conclusion: The study concluded that the participants had benefits from the implementation of fall prevention upon elderly in elderly care homes and modification to their behavior related knowledge.

Recommendation: The study recommended that fall prevention program could presented to all elderly who were resident elderly care homes to increase their awareness.

I. Introduction

Some of elderly persons who fall about (20-30%) of them suffer from moderate to severe injuries, which increase the potential of premature death. In (2002), (20%) of all elderly people who had hip fracture died within a year.[1] Many of elderly people- and their family members are inattentive of the potential factors or some behaviors that may put them at possible risks of falling, and also unaware of some actions that they should do to reduce the fall of risks as possible, for reducing falls and falls-related injuries among elderly adults.

1. Building awareness toward the importance of fall prevention and treatment among elderly adults.
2. Improving the assessment of individual, environmental, and societal factors that increase the likelihood of falls.
3. Facilitating the design and implementation of culturally appropriated evidence based related interventions that will significantly decreasing the number of falls among elderly adult. [2]

Many elderly people may think that changing their behaviors and adopt a healthy lifestyle is too late at the old ages a significant fear of fall, that greatly limiting their activity choices, reducing independence and decreasing their engagement in the community. It is not enough to simply educate elderly adults about the importance of fall and how to prevent it, it is also crucial to assessing their readiness to change their lifestyles and adopt preventative and/ or rehabilitative therapies. [3]

As a social science the health education, draws from the environmental, biological, psychological, physical and medical sciences to prevent disease, disability and premature death and promote health by education-driven voluntary behavior change activities. It is the growth of individual, group, institutional, community and systemic strategies that focuses specifically on the ways to improve health knowledge, attitudes, skills and behaviors by using various approaches and directions that including the healthy settings approach. [4]

Behavioral risk factors include those concerning human actions, emotions or daily choices. They are potentially modifiable. For example, risky behavior such as the intake of multiple medications, excess alcohol use, and sedentary behavior can be modified through strategic interventions for behavioral change; People's

attitudes influence their behaviors. Attitudes affect how people interpret and cope with falls in elderly age. Elderly people's attitudes greatly influence whether they will avoid fall-related risk taking behaviors when they participate in activities of daily living. If elderly people perceive falls as a normal consequence of ageing expressed, as "seniors will always fall" their attitudes may halt preventive measures. Awareness and attitudes of health to falls are essential to increased incentive in providing appropriate services for preventing and managing falls in elderly age. [2]

Elderly is thought to alter nutrient requirement for calories, protein and other nutrients as a result of changes in lean body mass physical activity, and intestinal absorption. Although some changing in nutritional needs may be accompanied by deterioration in diet quality and quantity, jeopardizing nutritional status, quality of life, functional independence. Besides many elderly people skip meals and exclude whole categories of food diet from them because reduced of appetites, infrequent grocery shopping, lack of energy to cook and difficulties in chewing and swallowing. [5]

Several nutritional factors have been associated with decreased muscle mass, strength and function such as protein under nutrition and protein-energy malnutrition or low dietary intake of vitamins and minerals inadequate nutritional intake is common in frail elderly adults due to for instance diseases, swallowing disorders, bad oral health, lack of taste and smell, eating dependency, social isolation, depression, chewing problems and anorexia of ageing. [6]

Previous study refer to elderly she /he who were not already taking calcium and (vitamin D) supplements were prescribed 500 mg calcium and (400 IU) of (vitamin D) per day. Eating a balanced diet rich in calcium may decrease the risk injuries resulting from falls in elderly adults.[7]

Over-prescription of medications that cause side effects and interactions among the drugs, inadequate dosage and lack of warning to make elderly people aware about their effects. Appropriate training programs covering knowledge and skills in falls prevention and management should be a priority in primary health care (PHC) settings, where increasing number of patients are elderly people. PHC practitioners should be well versed in the diagnosis and management of falls and fall-related injuries.[2]

By issue dealt with within preventive medicine the fall accidents can be prevented. So, the public wellness experts including community expert should think about this preventive difficulty including the falls accidents among elderly people. To decrease the burden of falls to the community many research or studies are needed to be done. Apparently, the poor or lack of the knowledge about risk factors and particular issue of the falls and the way to prevent and decrease them can contribute to a high prevalence and thus give higher epidemic of falls.[8]

Healthy life styles can slow down the process for post- menopausal women in particular, such life styles are crucially important to counterbalance the hormonal factors that can precipitate the onset of osteoporosis. For some secondary prevention through drug-therapy becomes an indispensable form of intervention for avoiding bone fractures as a consequence of even relatively minor traumas. [9]

II. Methodology

A quazi-Experimental design in governmental elderly care homes in Baghdad city men and women resident in Dar Al- Mucineen Al Ceelakh and Dar Al- - Mucineen Al Sader elderly care homes aged (60) years old and over during the period June 1st, 2014 to November 30st , 2014 . A purposive " Non – probability " sample of (40) elderly, the data was collected through the use of constructed questionnaire that consist of (24) items, The demographic data includes elderly characteristic, such as age, gender, previous occupation, marital status level of education, and residential area, socioeconomic status. The questions are rated according to the Liker's scale; I don't know (3), I'm not sure (2), I know (1), to make the instrument more valid, it was presented to a panel of (15) experts. The sample of pilot study was consisted of (10) elderly who residential in it, were selected randomly, and this preliminary study was conducted for the period of April 2nd to May 11th 2014. Analyzed through the application of the description data analysis approach (Frequencies, Percentages, and Relative Sufficiency, Mean of score, Probability level (P value \leq 0.05) and Z test.

III. Results

Table: (1) Distribution of elderly's Demographical Characteristics.

No.	Variables	Governmental		
		F.	%	
1.	Age Groups	60 - 64	6	15
		65 - 69	13	32.5
		70 - 74	16	40
		75 - 79	3	7.5
		≥ 80	2	5
2.	Gender	Male	19	47.5
		Female	21	52.5
3.	Occupation	Unemployed	18	45
		G. Employed	1	2.5
		Free Job	7	17.5
		Retired	14	35
4.	Education Levels	Illiterate	9	22.5
		Read & write	8	20
		Primary school	4	10
		Intermediate school	4	10
		Secondary school	5	12.5
		Institute	6	15
		College	4	10
5.	Marital Status	Single	11	27.5
		Married	6	15
		Separate	2	5
		Divorced	9	22.5
		Widow	12	30
6.	Crowding Index	Less than 2	20	50
		Less than 5	20	50
		≥ 5	0	0
7.	Existence of a bank account	I have	12	30
		I don't have	28	70
8.	Type of the family	Extended	4	10
		Nuclear	36	90
9.	Monthly Income	Sufficient	13	32.5
		Barely sufficient	11	27.5
		Insufficient	16	40

Result of this table presented that the majority of the age group has mid age (70 – 74) years, and they are accounted 16(40%).

Relative to gender, the majority of the sample reported at the gender ranged, female group and they are accounted 21(52.5%). Occupation, of the studied sample had unemployed, and they are accounted 18(45%), the majority of the sample reported at low levels of education, illiterate and they are accounted 9 (22.5%), marital status, majority of groups were reported at the single and widow they are accounted 23 (57.5%),

Crowding index, the majority of the sample reported at less than (5) persons in each room, and they are accounted 40 (100%), type of the family, classified nuclear and they are accounted 28(70%), monthly income having insufficient, and they are accounted 16 (40%).

Table: (2) Descriptive Statistics of Behavioral Risk Factor (The Drugs)

No.	Items of The Drugs	Period	Responses				Government				
			I don't Know	%	I'm not sure	%	I know	%	Z test	P. value	Assessment
1.	Put the phone in a place near the floor, as you felt down and you can't getting up it will be handy.	Pre						-3.832	0.000	HS.	
		Post	30	75	7	17.5	3				7.5
2.	Keep an emergency numbers big with letters near phone.	Pre	40	100	0	0	0	0	-2.070	0.038	S.
		Post	35	87.5	2	5	3	7.5			
3.	Don't take medications without doctor's consultation.	Pre	9	22.5	4	10	27	67.5	-2.236	0.025	S.
		Post	3	7.5	0	0	37	92.5			
4.	Talk to the doctor or the pharmacist to identify the side effects of drugs, since the side effects of some drugs may cause you to inactivity, ... etc.	Pre	23	57.5	9	22.5	8	20	-4.730	0.000	HS.
		Post	2	5	5	12.5	33	82.5			
5.	Be sure about the name of the medication and time to take also learn about the way in which it used to take the medication.	Pre	6	15	14	35	20	50	-3.586	0.000	HS.
		Post	1	2.5	3	7.5	36	90			

HS: Highly Significant at P<0.01; S: Significant. at P<0.05; NS: Not Significant. at P>0.05.

The results of this table presented that items (1,4,and 5) drugs scale had highly significant, items (2 and 3) was significant, had successfully assessment, and had a meaningful effectiveness of elderly fall prevention program in elderly care homes.

Table: (3) Descriptive Statistics of Behavior Risk Factor (The Food).

No.	Items of Behavior Risk Factor(TheFood)	Period	Responses				Government				
			I don't Know	%	I'm not sure	%	I know	%	Z test	P.value	Assessment
1.	Eat food contain less amount of adipose	Pre	2	5	5	12.5	33	82.5	-0.541	0.589	NS.
		Post	3	7.5	1	2.5	36	90			
2.	Eat a good and balanced food.	Pre	17	42.5	18	45	5	12.5	-4.938	0.000	HS.
		Post	0	0	5	12.5	35	87.5			
3.	The quality of the food provided for the elderly is an important factor in the promotion of health.	Pre	22	55	13	32.5	5	12.5	-4.947	0.000	HS.
		Post	3	7.5	3	7.5	34	85			
4.	The level of culture of older persons which refers to nutrition reduces risks.	Pre	37	92.5	2	5	1	2.5	-5.261	0.000	HS.
		Post	5	12.5	10	25	25	62.5			
5.	Walking out in the sun is useful and the exposure to the sunrays at the morning aids in the liberation of Vitamin (D).	Pre	26	65	3	7.5	11	27.5	-3.347	0.001	HS.
		Post	11	27.5	3	7.5	26	65			
6.	Add vitamin D and Calcium to the food.	Pre	1	2.5	37	92.5	2	5	-1.311	0.190	NS.
		Post	33	82.5	2	5	5	12.5			
7.	Drinking water in times before meals and also between main meals.	Pre	7	17.5	12	30	21	52.5	-1.436	0.151	NS.
		Post	6	15	6	15	28	70			
8.	Most of chronic diseases affecting elderly require a special food rather than ordinary food, so make sure to understand the elderly on food diets	Pre	17	42.5	7	17.5	16	40	-4.109	0.000	HS.
		Post	2	5	3	7.5	35	87.5			
9.	Emphasis on reducing weight for those affected by arterial blood pressure because obesity affect directly in blood pressure and therefore preferred to limit the alarms and spices, taking into consideration the salts and fat	Pre	18	45	8	20	14	35	-3.632	0.000	HS.
		Post	4	10	5	12.5	31	77.5			
10.	Foods containing calcium (milk and its products, yogurt, cheese, eggs).	Pre	6	15	7	17.5	27	67.5	-1.966	0.049	S.
		Post	3	7.5	2	5	35	87.5			
11.	Eat fruits and vegetables (five portions of fruits and vegetables daily) cause they containing salt and vitamins.	Pre	6	15	7	17.5	27	67.5	-3.145	0.002	HS.
		Post	0	0	1	2.5	39	97.5			

HS: Highly Significant. at P<0.01; S: Significant. at P<0.05; NS: Not Significant. at P>0.05.

The result of this table presented the items of food (2, 3, 4, 5, 8, 9 and 11) had highly significant, items (10) had significant excepted items (1, 6 and 7) was not significant, successfully assessment and had meaningful fall prevention program effectiveness of elderly.

Table: (4) Descriptive Statistics of Behavior Risk Factor (Shine Insole).

No.	Items (Shine Insole)	Period	Responses						Government		
			I don't Know	%	I'm not sure	%	I know	%	Z test	P.value	Assessment
1.	Shine must have a base of high-friction should preferably be serrated rubber in order to give additional grip to ease fall	Pre	28	70	6	15	6	15	-3.462	0.001	HS.
		Post	13	32.5	9	22.5	18	45			
2.	Wear appropriate footwear with outer tie.	Pre	38	95	0	0	2	5	-3.839	0.000	HS.
		Post	20	50	8	20	12	30			
3.	Do not wear shoes that causing slippage or shoes with twisted rings, ties and heels.	Pre	38	95	0	0	2	5	-3.906	0.000	HS.
		Post	20	50	5	12.5	15	37.5			
4.	The Shoe of medium or low- rounded heels are best of high heels.	Pre	27	67.5	4	10	9	22.5	-4.076	0.000	HS.
		Post	11	27.5	2	5	27	67.5			
5.	Avoid walking on the wet floor or slippery areas.	Pre	20	50	3	7.5	17	42.5	-3.829	0.000	HS.
		Post	3	7.5	1	2.5	36	90			
6.	Home shoes should not be larger than foot size.	Pre	3	7.5	3	7.5	34	85	-1.292	0.196	S.
		Post	1	2.5	1	2.5	38	95			
7.	Shoe's heels must be square with rounded edges and flexible at the bottom.	Pre	10	25	19	47.5	11	27.5	-3.164	0.002	HS.
		Post	4	10	9	22.5	27	67.5			
8.	Don't walk with socks only without shoe on the polished ground.	Pre	19	47.5	1	2.5	20	50	-4.316	0.000	HS.
		Post	0	0	2	5	38	95			

HS: Highly Sig. at P<0.01; S: Sig. at P<0.05; NS: Not Sig. at P>0.05.

The results of this table shows that the items (1, 2, 3, 4, 5, 7 and 8) had highly significant, items (6) had significant that means the shine insole had successfully assessment, and had a meaningful effectiveness of elderly fall prevention program.

III. Discussion

The older persons often face difficulties in Adapting to change and organizational technology in work than younger people, particularly in the area of using the technical information, which can be spreading widely. Elderly, who cannot read, write and understand the statistical processes are with low income and experience than others who can read and write well. Scanning of the elderly care homes in Iraq has been reported that the number of illiterate (711) of female and (401) of male respectively, while elderly who can read and write are (72) of female and (73) of male, The number of elderly who are a campaigning higher diploma, bachelor degrees and highest account are (53) women and (42) men respectively.[10]

The older adults of sex- specific in Iran in 2003 incidence rates (per 100.000 elderly) in a year of fall-related hip fracture among aged in this study from (60-69) years old, (70-79) years old, and over 80 years old, are (38.0%), (135.8%), and (501.9 %) (per 100.000 elderly) in a year between males respectively, and (67.3%), (214.7%), and (564.6%) (per 100.000 elderly) in a year between females respectively, additionally the odds ratio of hip fractures occurrence for diverse risk factors in elderly persons and over 50 years old based on multivariate logistic regression analysis were (0.78%) for male gender (vs. female), (1.07%) for urban residence (vs. rural), (0.61%) for married (vs. single or widowed), (1.70%) for falling at home (vs. other places), (1.14%) for indoor falling (vs. outdoor), (2.67%) for standing up or less height of fall (vs. over standing), (1.71%) for walking during fall (vs. other activities), (1.73%) for falling on stairs (vs. none), and also (0.47%) for falling from ladder, (vs. none). [11]

From my point of view most of the elderly suffer from nutritional problems, decrease metabolic rate and decrease physical activity that lead to obesity, that should decrease energy intake, dental problems, gastro intestinal tract problems, dysphagia and constipation, then diet should be balanced that provide enough amount of protein, vitamins, minerals as iron and calcium can intake supplements calcium, iron, vitamins D, vitamins B complex with time and another. The result table (3) shows that most of studied items of food had highly significant, successfully assessment and had meaningful fall prevention program effectiveness of elderly, excepted items (6,7) was not significant, because limited income, and low level of education. Some people of elderly population don't drink a lot of water because they ignoring the go to the path room or toilet for several times. In addition about governmental care homes. Some items got significant responses while in others are not significant, because they live alone in a room or may be in some care home "Dar Al- Mucineen Al Ceelakh", as I see they find it hard to live together, cause each elderly got his own way in living eating, sleeping, and so on they may be sometimes start to fight with each other's in addition to that the care home is too narrow and contain only one small garden, some of them prefer to sit there and relaxing but the women refuse to sit in the garden, because they feel in shy as in the Iraqi habits. While in Dar Al- Mucineen Al Sader care home they were living in a big hole, each one sit on his bed with simple relationship between them, others there is no contact between them. Elderly nature characterized by introversion and loneliness each on got his own behaviors and habits differ from the other, they do not feel comfortable to each other because of these different behaviors. Besides elderly women got moodily attitude and rigid mentality.

Some of present studies about the elderly's nutrition programs, revealed that if they increased the amount of vitamin D supplements intake for (2) years, could reduce the incidence of falls. to determine whether vitamin D reductions is really affect or increase the incidence of falls among elderly people, the examinations of the Australian researches about the affection of vitamin D deficient in (625) residents of (149) elderly care home for (2) years, the elderly people randomly selected to have vitamin D intake as inactive supplements or "placebo") any dummy medical treatment; originally, a medicinal preparation having no specific pharmacological activity against the patient's illness or complaint given solely for the psycho-physiological effects of the treatment). All of them received 600mg calcium element as calcium carbonate. The falls and fractures were recorded prospectively in study's diaries by the care team. At the beginning, the characteristics of patients were similar in both groups. The results of the study found that the use of vitamin D supplements cut the risk of falls (27% - 37 %) when compared with placebo. This study depicted the important benefits of vitamin D for elderly population at care homes. [12]

Randomized control prospective trial that assessed the effectiveness of resistance exercise (Berg Balance Test) on physical function and ADL (Activities of Daily Living), e.i., dressing, cleaning, walking, meal preparation, shopping, and vehicular transportation) with self-reporting methods on physical function and Activities of Daily Living in older adults with osteoporosis. The data were obtained during the initial study, which allowed for real sample size needed. This interventional study supported the program to reduce the risk of fall older women with osteoporosis aged (65) years old, for one-year period. In university hospital physiotherapy department. (3) months program to compare the effect of calcium, vitamin D supplements with a combination of calcium, vitamin D supplements and exercise/protein on risk of falling and balance, and the evaluation after 3,6,9, monthes and at the end of the study, (24) independently living elderly women. Significant decreases of risk of falling (ANOVA $F = 8.90$, $P = 0.008$), an increase in muscular strength (ANOVA $F = 3.0$, $P = 0.03$), and an increase in activity level (ANOVA $F = 3.38$, $P = 0.02$) were found in the experimental group as compared to the control group. Furthermore, there was (89%) decrease of falls described in the experimental group experimental pre, post study 8/1 falls respectively; control group pre, post study 5/6 falls respectively.[13]

Previous study mention that (81) types of medication, relative to fall through (April 1 2008 - 31 March 2009), number of participant (151) elderly (144) of them (95.4 %) suffer from risk of falls, with an average number (2.2), this study recorded a new fall because elderly using lorazepam and product zopiclone (higher risk medication) (7) days before fall 74 (49.0 %) and during (24) hours before fall 17 (11.3 %). The study proved that older people who used lorazepam and product zopiclone, they are more exposed to fall. [14]

A slip leaves only about a quarter second to save lots oneself from slipping. (0.1-0.2) of a second after the foot contacts the slippery spot, knee and hip joints respond to bring the skidding feet back "feet back of foot pressure in a several of elderly people vulnerable to falling". An attempt had been made to push the hip forward to take back balance. If unsuccessful, the other foot were pulled forward. A study at the University of Illinois sent (52) elderly persons from different ages for walking over artificial ice to discover what reactions make a difference between falling and just wobbling. There are generally (2) point's important observations were recently been made:

- 1- Those able to slow down the slipping foot were more likely to recover.
- 2- How far the no slipping foot was to the left or right involving center was some sort risk factor.

Previous studies suggested that if that foot have been moved less than four cm (about 1.5 inch) further out, the likelihood of recovery coming from a slip increases through of half. In our study shows that elderly might trained to react variously events as sudden as being a slip. Studies advise elderly who practice recovery moves can certainly improve their reactions to slipping or even tripping. [15]

V. Conclusion

- 1- The study discovers that age group are majority total sample was reported at the middle of elderly age (70 – 74) years, gender of total sample, female, majority total sample was unemployed, the greater number of them illustrated low levels of education, total sample were reported at the widow and single, sample are resident in urban, crowding index shows that most of the studied individuals are reported less than two persons in each room, the sample don't have existence of a bank account, vast majority of studied elders classified nuclear family type, most of the studied elders having insufficient monthly income of total sample.
- 2- The study concludes that actual improvements, the study participants had benefits from the implementation of fall prevention upon elderly in elderly care homes and modification to their knowledge related behaviour risk factors.

VI. Recommendation

- 1- The study recommended that fall prevention program could presented to all elderly who were resident elderly care homes (private and governmental elderly care homes) to increase their awareness.
- 2- We always have a gap in the lack of access to the ideal situation was changing as a result of the application of the fall prevention program requires to continue to apply the program through the extension of the period application suggestion of program in order to close the hole of the error.

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