

To Assess the Effectiveness of Planned Teaching on Knowledge Regarding Biological Frailty Syndrome among General Population

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Abstract

Background: Frailty as a biological syndrome of decreased reserve and resistance to stressors resulting from cumulative declines across multiple physiological systems and causing vulnerability to adverse outcomes. Prevalence estimates of 7-16% have been reported in non-institutionalized, community-dwelling older adults. The occurrence of frailty increases incrementally with advancing age, and is more common in older women than men, and among those of lower socio-economic status. Frail older adults are at high risk for major adverse health outcomes, including disability, falls, institutionalization, hospitalization, and mortality. *Objectives:* 1) To assess the existence knowledge regarding the biological frailty syndrome among general population. 2) To evaluate the effectiveness of planned teaching on knowledge regarding biological frailty syndrome among general population. 3) To associate the post test knowledge score with selected demographic variable. *Material and Methods:* Non-experimental design. *Research approach:* Descriptive evaluative approach. *Sampling technique:* Non-probability convenience sampling and sample size: 60 people. *Result:* The study shows that significant difference between pre-test and post-test knowledge scores interpreting effective planned teaching on knowledge regarding biological frailty syndrome among general population. Mean value of pre-test is 6.73 and post-test is 16.83 and standard deviation of pre-test is 1.413 and post-test is 1.251. The calculated t-value is 43.436 and p-value is 0.000. There was significant association of the posttest knowledge scores and selected demographic variables such as age and occupation. *Conclusion:* The study showed that the planned teaching on biological frailty syndrome among general population was effective in improving the knowledge of general population and thus helps them to understand the meaning.

Keywords: Frailty Syndrome; Knowledge; Effectiveness And Planned Teaching.

Introduction

The frailty syndrome is increasingly recognized by geriatricians to identify elders at an extreme risk of adverse health outcomes. The physiological changes that result in frailty are complex and up to now have been extremely difficult to characterize

due to the frequent coexistence of acute and chronic illness frailty is characterized by an decline in the functional reserve with several alterations in diverse physiological systems, including lower energy metabolism, decreased skeletal muscle mass and quality, altered hormonal and inflammatory functions and inflammatory functions. This altered network leads to an extreme vulnerability for disease, functional dependency, hospitalization and death. One of the most important core components of the frailty syndrome is a decreased reserve in skeletal muscle functioning which is clinically characterized by a loss in muscle mass and strength, in walking performance and in endurance

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associated with a perception of exhaustion and fatigue. There are a number of physiological changes that occur in senescent muscle tissues that have a critical effect on body metabolism [1].

Frailty was defined as a clinical syndrome in which three or more of the following criteria were present: unintentional weight loss (10 lbs in past year), self-reported exhaustion, weakness (grip strength), slow walking speed, and low physical activity. The overall prevalence of frailty in this community-dwelling population was 6.9%, it increased with age and was greater in women than men. Four year incidence was 7.2% [2].

Epidemiologic research to date has led to the identification of a number of risk factors for frailty, including: (a) chronic diseases, such as cardiovascular disease, diabetes, chronic kidney disease, depression, and cognitive impairment; (b) physiologic impairments, such as activation of inflammation and coagulation systems, anemia, atherosclerosis, autonomic dysfunction, hormonal abnormalities, obesity, hypovitaminosis D in men, and environment-related factors such as life space and neighborhood characteristics. Advances about potentially modifiable risk factors for frailty now offer the basis for translational research effort aimed at prevention and treatment of frailty in older adults. A recent systematic review found that exercise interventions can increase muscle strength and improve physical function; however, results are inconsistent in frail older adults living in the community [3].

Frailty is a common and important geriatric syndrome characterized by age-associated declines in physiologic reserve and function across multiorgan systems, leading to increased vulnerability for adverse health outcomes. Two major frailty models have been described in the literature. The frailty phenotype defines frailty as a distinct clinical syndrome meeting three or more of five phenotypic criteria: weakness, slowness, low level of physical activity, self-reported exhaustion, and unintentional weight loss. The frailty index defines frailty as cumulative deficits identified in a comprehensive geriatric assessment. Significant progress has recently been made in understanding the pathogenesis of frailty. Frailty syndrome directly and indirectly through other intermediate physiologic systems, such as the musculoskeletal, endocrine, and hematologic systems. The complex multifactorial etiologies of frailty also include obesity and specific diseases. Major clinical applications include risk assessment and stratification. This can be applied to the elderly

population in the community and in a variety of care settings [4].

A Cross-sectional study was conducted according to of frailty in this study, fatigue was the most common symptom of frailty, with 74.2% of the subjects reporting that they experienced fatigue. This is followed by slow walking (22.6%), weakness (19.1%) and unintentional weight loss (12.7%). Considering the subjects' performance in these four indicators, 31.7% of elderly people fell into the frail group. Compared with the normal group, those in the frail group are, on average, older (78.2 years) and have a lower level of education. Most are illiterate or went no further than elementary school (19% and 51.3%). Frailty is not significantly associated with gender and place of birth [5].

A cross-sectional study measured the prevalence of frailty syndrome in elderly hospitalized patients aged 65 years or more in the São Vicente de Paulo Hospital. In terms of prevalence, 49.5% of the elderly people proved to be pre-frail and 46.5% frail. A study showed a relationship with these findings, finding the following prevalence of frailty syndrome in elderly people in a hospital institution: 26.2% of those hospitalized in a clinical unit and 62.4% in a surgical unit. An extensive and systematic search is required to ensure that there are not actually any other studies with data on data frailty syndrome in hospital institutions. However, a search of the current database did not find any such data. In this study, there was a higher prevalence of frailty compared with studies focusing on the community [6].

Material and Methods

A non-experimental research design with pre-test post-test design was used for the present study. The study sample consists of 60 people. Non-probability convenience sampling technique was used to select the samples. The study was conducted general population Wardha City. The tool was developed after intensive review of literature, consultation and discussion with experts and also with the personal experience of the researcher. The final tool consisted of two parts. Part 1: Demographic data such as age, gender, education, occupation residential area Part 2: Question on knowledge regarding biological frailty syndrome. After pretest the planned teaching was given on same day. Posttest will be administered with the same questionnaire on 7th day the collection of data was performed within the stipulated time. Ethical clearance was obtained from institutional

ethics committee. Informed consent was taken from subjects and confidentiality was assured.

The Inclusion criteria were person in selected area who is willing to participate in the study. People who are available at the time of data collection. People who can understand, read and write English, Marathi. Age group is more than 40 year.

Results

Table 1 depicts the percentage wise distribution of sample with regards to age, gender, education,

occupation, residential area regarding the biological frailty syndrome.

Distribution of samples according to their age in years shows that 21 (35%) of them were belonging to the age of 40-50 years, 22 (37%) in the age group of 51-60 years and 11 (18%) of them belonging to the age group of 61-70 and remaining 6 (10%) the age group above the 71 years respectively.

Distribution of samples according to their gender shows that 29 (48%) of them were male and 31 (52%) were female.

Distribution of sample with regards to their education 11 (18 %) belongs to primary education

Table 1: Demographic Data

N =60

Demographic variable	Frequency	Percentage (%)
<i>Age(years)</i>		
40-50	21	35%
51-60	22	37%
61-70	11	18 %
71 years and above	6	10 %
<i>Gender</i>		
Male	29	48%
Female	31	52 %
<i>Education</i>		
Primary	11	18 %
Secondary	8	14.23 %
Higher secondary	20	32.77 %
Graduation and above	21	35%
<i>Occupation</i>		
Daily labor	6	10 %
Private employee	12	20 %
Government employee	8	13.33 %
Business	8	13.33%
House wife	26	43.34 %
<i>Residential area</i>		
Urban	2	3 %
Rural	58	97 %

Table 2: Assess the effectiveness of planned teaching on knowledge regarding biological frailty syndrome among general population.

N=60

Level of knowledge score	Score range	Percentage score	Pre Test	
			Frequency	Percentage
Poor	0-4	0-20%	3	5 %
Average	5-8	21-40%	51	85 %
Good	9-12	41-60%	6	10%
Very good	13-16	61-80 %	0	0%
Excellent	17-20	81-100%	0	0 %
Minimum score			3	
Maximum score			10	
Mean score			6.73± 1.413	
Mean %			11.21%	

8 (14.23%) belongs to secondary education, 20 (32.77%) belongs to higher secondary education, 21 (35%) belongs to graduation and above.

Distribution of samples with regards to their occupational status shows that 6 (10%) people are daily labor, 12 (20%) people are private employee, 8 (13.33%) government employee, 8 (13.33%) people are business, 26 (43.34%) people are house wife.

Distribution of samples with regards to their residential area 2 (3%) people are living in urban area and 58 (97%) people are living in rural area.

Table 2 depicts the mean pre test scores shows that poor level of knowledge score is 3 (5%), average level of knowledge score is 51 (85 %), good level of knowledge score is 6 (10%), very good level of knowledge score is 0 (0%) and excellent level of knowledge score is 0 (0%). The minimum score was 3 and the maximum score was 10, the mean score was 6.73 ± 1.413 with a mean percentage score of 11.21%.

Table 3 depicts the mean post test scores for shows that of sample were none of them had poor level of knowledge score and none of them had average level of knowledge score, 26 (43%) of them had good level of knowledge score, 34 (57%) of them had very good level of knowledge score and

none of them had excellent level of knowledge score. The minimum score was 15 and the maximum score was 20, the mean score was 16.83 ± 1.251 with a mean percentage score of 28.5%.

Tables 4 depict that, shows that there is a significant difference between pretest and posttest knowledge scores of planned teaching on knowledge regarding the biological frailty syndrome. Mean value of pretest is 6.73 and posttest is 16.83 and standard deviation values of pre-test are 1.413 and post-test is 1.251. The calculated t-value is 43.439 and p-value is 0.000. Hence it is statistically interpreted that the planned teaching on knowledge regarding biological frailty syndrome among general population was effective. Thus the H_1 is accepted this study.

Tables 5 depict that there is a significant association in post-test knowledge score with selected variables. The calculated Chi-square value of demographic variables such as gender educational, residential area (3.84, 9.49, and 3.84,) was not significant at 0.05 level of significant. Other variables such as age and occupation (7.82, 9.49) have significant association with post-test knowledge scores.

Table 3: Assessment of post test knowledge regarding biological frailty syndrome among general population
N = 60

Level of knowledge score	Score range	Percentage score	Post Test	
			Frequency	Percentage
Poor	0-4	0-20%	0	0 %
Average	5-8	21-40%	0	0 %
Good	9-12	41-60%	26	43 %
Very good	13-16	61-80 %	34	57 %
Excellent	17-20	81-100 %	0	0 %
Minimum score			15	
Maximum score			20	
Mean score			16.83 ± 1.251	
Mean %			28.5 %	

Table 4: Percentage wise distribution of effectiveness of planned teaching on knowledge regarding biological frailty syndrome among general population
n=60

Tests	Mean score	SD	't'-value	Degree of Freedom	p-value	Significant
Pre Test	6.73	± 1.413	43.436	59	0.000	S, $p < 0.05$
Post Test	16.83	± 1.251				

Table 5: Chi-square test showing association between posttest knowledge score and selected demographic variables
n=60

Variables	X ² value	t-value	df	Inference
Age	8.30	7.82	3	S
Gender	1.60	3.84	1	NS
Education	7.33	9.49	4	NS
Occupation	10.46	9.49	4	S
Residential area	0.80	3.84	1	NS

S: significant, SN: Not significant

Discussion

In present study, pre-test knowledge level score was 3 (5%) poor, 51 (85%) average, 6 (10%) good, and no participants were under very good and excellent level of knowledge score.

The study conducted by Gundurao Chilapur et al., proved that there was increase in the knowledge level of family members after implementing planned teaching programme, thus planned teaching programme on care of selected old age health problems among family members was effective. Out of 80 subjects 42 (52.50%) of subjects had inadequate, 31 (38.75%) had satisfactory and 7 (8.75%) had adequate knowledge regarding care of selected old age health problems before teaching programme (pre-test). However after teaching programme (post-test) about 21 (26.25%) subjects had adequate knowledge and 37 (46.25%) satisfactory knowledge, whereas 22 (27.50%) had inadequate knowledge regarding care of selected old age health problems [7].

In present study, in posttest none of them had poor level of knowledge score and none of them had average level of knowledge score, 26 (43%) of them had good level of knowledge score, 34 (57%) of them had very good level of knowledge score and none of them had excellent level of knowledge score. The minimum score was 15 and the maximum score was 20, the mean score was 16.83 ± 1.251 with a mean percentage score of 28.5%.

Study conducted by Ms. Sonali Waghmare, Mr. Muniyandi, in their study in posttest, out of 100 subjects 4% of the subjects had good knowledge and 96% had excellent knowledge about dementia. And 10% of the subjects had moderately favorable attitude and majority of the subjects i.e. 90% had favorable attitude regarding the dementia [8].

In present study, there is a significant difference between pretest and posttest knowledge scores of planned teaching on knowledge regarding the biological frailty syndrome. Mean value of pretest is 6.73 and posttest is 16.83 and standard deviation value of pretest is 1.413 and posttest is 1.251. The calculated t-value is 43.439 and p-value is 0.000. Hence it is statistically interpreted that the planned teaching on knowledge regarding biological frailty syndrome among general population was effective.

Study conducted by Lavina Rodrigues and Thereza Mathias, Analysis revealed that the mean posttest knowledge (20.78 ± 3.31) was higher than

mean pretest knowledge scores (12.90 ± 2.43). Significance of difference between pretest and posttest was statistically tested using paired "t" test and it was found very highly significant ($t = 40.85$, $p < 0.05$) [9].

Conclusion

The study showed that the planned teaching on biological frailty syndrome among general population was effective in improving the knowledge of general population and thus helps them to understand the meaning of Biological Frailty Syndrome.

References

1. Khandelwal D, Goel A, Kumar U, Gulati V, Narang R, Dey AB. Frailty is associated with longer hospital stay and increased mortality in hospitalized older patients. *J Nutr Health Aging* 2012;16(8):732-5.
2. <https://academic.oup.com/biomedgerontology/article/56/3/M146/545770>.
3. https://en.wikipedia.org/wiki/Frailty_syndrome.
4. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3964027/>.
5. <http://www.jarcp.com/3389-health-function-indicators-for-the-prediction-of-elderly-frailty.html>.
6. http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692013000400891.
7. Chilapur Gundurao, Chetan S Patali and Suvarna S Pinnapati, A Study to Evaluate the Effectiveness of Planned Teaching Programme Regarding Knowledge on Care of Old Age Health Problems Among Family Members of Simikeri Village (Tal & Dist) Bagalkot, *JOJ Nurse Health Care* 2018;8(3): JOJNHC.MS.ID.555739.
8. Waghmare Sonali, Muniyandi, Assessment of the Effectiveness of Planned Teaching on Knowledge and attitude regarding the Dementia among Family Members of Elderly in selected Community Area. *International Journal of Nursing Education and Research*. 2017;5(3):241-260.
9. Rodrigues Lavina and Mathias Thereza, Effectiveness of planned teaching program on knowledge regarding Alzheimer's disease among the family members of elderly in a selected urban community at Mangalore. *Indian J Psychiatry*. 2016 Jan-Mar;58(1):44-48.