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A Study To Assess The Effectiveness Of Structured Teaching Programme On Knowledge Of The Significant Family Member Regarding Specdial Nutritional Needs Of The Elderly At Selected Hospital.

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- ***Abstract:*** The demographic profile of the most nations points to an increase in the population of the elderly. The nutrient requirement of the elderly and the concern for the health and nutrition of the elderly are far different from any other population group. So the investigator felt a need to conduct the study to assess the effectiveness of structured teaching programme on knowledge of significant family member regarding special nutritional needs of the elderly. **The objective of the study:** To assess the knowledge of the significant family member on special nutritional needs of elderly. To evaluate the effectiveness of structured teaching programme on knowledge of the significant family member regarding special nutritional needs of the elderly. To associate the pretest knowledge with selected demographic variables. **Methods:** Pre-Experimental design with one group pretest and posttests design was adopted. 60 samples were selected by using non-probability purposive sampling technique. A structured questionnaire schedule was prepared and used to collect the data and to assess the level of the knowledge of the significant family member regarding special nutritional needs of the elderly. The tool consisted of demographic data and 30-structured knowledge questionnaire. The content validity was obtained from experts and the reliability was obtained by test re test method. Feasibility of the study was confirmed by pilot study. The data obtained was analyzed and interpreted in terms of the objectives and hypothesis of the study. Descriptive and inferential statistics were used for data analysis. **Results:** The present study found that in pre-test, out of 60 subjects' majority of them 58(96.7%) had inadequate knowledge, 2 (3.3%) of them had moderate knowledge and none of them had adequate knowledge and in post-test, majority of them 37(61.7%) had adequate knowledge, 23(38.3%) had moderate knowledge and none of them had inadequate knowledge. There is statistically significant association found between two demographic variables and the pre-test level of knowledge of the significant family member of the elderly on nutritional needs of the elderly.The variable age showed significance at P <0.05 level, and the variable education showed significance at P<0.05.**Interpretation&Conclusion:** Analysis of data shows that 61.7% had adequate knowledge,38.3% had moderate knowledge and 0% had inadequate knowledge.

***Index Terms*-:** Elderly, Nutritional needs, Significant family member.

I. INTRODUCTION

Good nutrition is essential to good health throughout life, beginning with prenatal life and extending through old age. Food and nutrition continue to provide essential support during the adult aging process, Good nutritional status throughout life helps prevent the development and progression of disease and disabilities in later life, as well as promoting successful medical treatment outcome, thereby significantly contributing to the quality of life1.Global population of over 6 billion in which almost 10% are elderly population. Further it is projected that the older population in developing countries will rise much faster than the developed countries. In 1990, 4% of the US population was over the age of 65. Today that figure stands at 12%. If the current projections are correct the elderly will comprise approximately 20% of the US population by the year 2020. In India the proportion of older person has risen from 4.9% in 1901 to 5.5% in 1951, 6.4% in 1991, 7.7% in 2001 and will be 12% in 2025.

According to the official projection of the Registrar General, India, in 2001 the elderly population is estimated at 71 million, and 114 million by the year 2016. The united nation projections put the estimated number of the elderly in India in 2000 at 77 million. The projection for the year 2025 is 168 million and for 2050 it is 326 million. According to U N estimates, during the period 1995-2000 in India, the life expectancy of male stood at 62.3 years while that of female was 62.9 years. For the period 2020-2025, the figures are 68.8 years for males and 72.1 years for females. For the period 2045-2050 the estimates are 73 years for males and 76.9 years for females. Looking at regional variation we find that in 1991, three states in India, namely Uttar Pradesh, Maharashtra and Bihar had more than 5 million people in the 60 above category2.The required dietary allowances (RDA) for healthy older adults are the same as that for younger adults with three exceptions, decreased calorie intake, decreased protein intake, and decreased iron requirement for postmenopausal women. Normal age-related changes, behavioral changes, and pathologic conditions may leads to malnutrition in the older adults3.

Because of the physiological and psychosocial diversity of older adults, studying nutrition of the aging is very challenging. Factors such as nutrition, genetics, physical activity and stress contribute to the diverse population of elderly adults. All of these factors, during earlier years of life, contribute to the complex needs during the later years of life. It is a mistake to believe that all elderly people have the same nutritional needs and should follow a similar plan. In a country like India, where the average life expectancy is increasing with a rising geriatric population, it is essential that the family members caring for elderly citizens must be aware of the nutritional needs and requirements of the elderly. So, the care givers can provide the best possible care to their elderly people have the same nutritional needs and should follow a similar plan4.

NEED OF THE STUDY

Malnutrition is common in elderly persons living in institution and in the community. In many cases, the problem arises from a highly individual constellation of interacting physiologic, economic and psychosocial causes that have the common effect of reducing nutrient intake. Protein-calorie and micronutrient, under nutrition added to the normal effect of aging can undermine functional independence and diminish the quality of the life of the elderly[5]. It is the common knowledge that the demographic profile of most nations points to an increase in the population of the elderly. The nutrient requirement of the elderly and the elderly and the concerns for the health and nutrition of the elderly are far different from any other population group. In this elderly period, there are many metabolic, physiologic and psychosocial changes that affect the nutritional needs of an individual[6].

Physiological factors may affect the nutritional status of older adults negatively. There include changes in the gastrointestinal system, senses, metabolism, health condition, medication etc. As for the nutrient needs of the elderly woman, studies have shown that the quantity of nutritious food is voluntarily reduced as they become older. If the diet is also less nutritionally dense, then a problem arises. It is true that, at this time in life, energy needs are lower because of the decrease in metabolic rate and physical activity. Although less consumption of food is needed to maintain body weight it is still very important eat a variety of foods that are nutrient dense. Foods high in sugar, fat, or alcohol should be used in moderation due to their low nutritional value. Because of the lower energy needs protein-containing foods should be of high quality. For example, choose low fat protein-rich foods such as lean meats, poultry, fish, non-fat milk and low-fat cottage cheese. Foods that are high in fat should be limited since fat carries more than twice the calories per gram of protein and carbohydrate[7].

People of all ages need more than 40 nutrients to stay healthy. With aged, it becomes more important that diet contains enough calcium, fibers, Iron, protein and vitamins. Reduce calories, select nutrient dense foods and enjoy smaller portion of food high in fats sugars and sodium because no one food or pill provides all of the nutrition. Eating a variety of food to get the full spectrum of nutrition[8].For older people, the daily

nutrient recommendations are relatively meaningless as the bodily processes become less efficient. However, ensuring a good supply of vitamins and minerals can only be helpful and many nutritionists routinely recommend a regular, well-balanced mineral and vitamin supplement[9].

STATEMENT OF THE PROBLEM

"A study to assess the effectiveness of structured teaching programme on knowledge of the significant family member regarding special nutritional needs of the elderly.

OBJECTIVES OF THE STUDY

1. To assess the knowledge of the significant family member on special nutritional needs of elderly.
2. To evaluate the effectiveness of structured teaching programme on knowledge of the significant Family member regarding special nutritional needs of the elderly.
3. To associate the pretest knowledge with selected demographic variables.

OPERATIONAL DEFINITIONS

1. **Effectiveness:**

   It refers to the improvement in the knowledge of the significant family member regarding special nutritional needs of the elderly after undergoing structured teaching programme as evidenced by increase in the post test mean score.

2. **Structured teaching programme:**

   It refers to the systematically developed instructions and teaching aids designed for significant family member to improve the knowledge regarding meeting special nutritional needs of the elderly such as identifying the nutritional requirements, nutritional problems and management of common nutritional problems.

3. **Knowledge:**

   It refers to awareness and understanding of the significant family member regarding nutritional needs of the elderly, as measured by structured knowledge questionnaire.

4. **Significant family member:**

   An individual or family member who attends to the needs of an elderly admitted in a medical and surgical ward of the selected hospital and who is in close relationship with patient

5. **Special nutritional needs:**

   It refers to the additional nutritional requirement needed to maintain the health of the elderly population in meeting protein, carbohydrate, calcium and vitamin requirements of elderly through some food sources and supplements.

6. **Elderly:**

   It refers to older people of age group above 60 years admitted in medical and surgical wards of the selected hospitals.

ASSUMPTIONS:

1. Family members may have inadequate knowledge regarding special nutritionalneeds of elderly.
2. Structured teaching programme may enhance the knowledge of the family members regarding nutritional needs of elderly client.

HYPOTHESES

H 1: There is a significant difference between pretest and posttest knowledge scores of significant family member after receiving structured teaching program regarding nutritional needs of elderly.

H 2: There is a significant association of the pretest knowledge score of the significant family member of elderly with selected demographic variables.

DELIMITATIONS:

1. The study was delimited to selected hospital. Therefore, the possibility for wider generalization is limited.
2. The sample size was limited to 60.

RESEARCH APPROACH

Research approach is the most significant part of any research. The appropriate choice of the research approach depends on the purpose of the research study. An evaluative approach is selected for the study. It was used to assess the effectiveness of structured teaching programme on knowledge of the significant family member regarding special nutritional needs of the elderly.

RESEARCH DESIGN

The research design is a researcher plan for obtaining answers to the research questions for testing the hypothesis. The research design spells out the basic strategies the researcher adopts to develop information, which is accurate and interpretable.

The research design selected for the study was pre-experimental one group pre testpost test design. It is relatively straight forward design in which there is an interventional group without a control group called one group pretest post test design which comes under the category of Experimental design.

RESEARCH VARIABLE

Independent variable: -

It is the intervention or treatment the investigator performs to see the changes in the dependent variables. The independent variable in the study was structured teaching programme on nutritional needs of the elderly

Dependent variable: -

It is the outcome variable. The dependent variable is the presumed cause for the resulting changes in the dependent variable. Dependent variable in the study was knowledge of the significant family member regarding nutritional needs of the elderly.

CRITERIA FOR SAMPLE COLLECTION

Inclusion criteria:

The study includes

1. A family member who is caring for elderly client (above 60 years) admitted in medical and surgical wards of the selected hospitals.
2. Family members of the age group 20-55 years and who is in close relationship with the elderly client admitted in hospitals.
3. Significant family member who can read, write and understand Marathi or English.

Exclusion Criteria.

The study excludes

1. Family member who is taking care of the elderly clients for a temporary period of time.

2. Family members of the elderly clients with some critical illness.

3. Family member who are not willing to participate in the study or Not available at the time of data collection.

STUDY POPULATION

A population is a target group whose members possess specific attributes that a researcher is interested in studying.

Target population:

It refers to the elements, people, objects to which the investigator wants to generalize the research findings. The target population of this study was significant family member of the elderly people.

Accessible population:

The part of the target population that is available to the investigator. The accessible population in this study where significant family member of the elderly who all are admitted in DUPMCH Hospital, Jalgaon.

SAMPLE

Sample is the subset of the population. It is the process of selecting a portion of the population to represent the entire population. In this study sample size is 60 significant family member of the elderly who fulfill the inclusion criteria.

SAMPLE SIZE

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SAMPLING TECHNIQUE

Sampling technique is an important step in the research process. It is the process of selecting representative units or substance of a population of the study in a research. A non probability convenience sampling technique was used for the selection of samples.

DATA AND SOURCES OF DATA

Data collection is the gathering of information needed to address research problem. Formalwritten permission was obtained from the medical superintendent of DUPMC and Hospital, Jalgaon for conducting the study. The method of data collection adopted for the study was structured knowledge questionnaire. The participants of the study were 60 significant family member of the elderly who were selected as per convenient sampling method. The investigator gathered all the participants in the free space of the ward and after brief introduction of self, the investigator explained the purpose of the study and obtained consent from the participants.

THEORETICAL FRAMEWORK

Theoretical framework is a set of defined concept and rational statements among all major concepts to provide a systematic view of phenomenon. A theoretical framework guides an investigator to know what data need to be collected and gives direction during the entire research process. The present study aims at developing a planned teaching programme for the significant family members regarding nutritional needs of the elderly. The study assesses the knowledge on nutritional needs of the elderly among their significant family members. The conceptual framework of the present study was developed by the investigator based on the Bertalanffy General System Theory. This consist of component like

- Input
- Throughput
- Output
- Feedback

Input:

It refers to the process by which the system receives energy and information from the environment and man that may be money, resources and time. In the present study the input refers to the target/ learners group with their characteristics. Here the target group is the significant family members of the elderly people.

Process:

Process is the use of the input, energy and information for the maintains of the system. Process in this study consists of two phases. First phase consist of determining the knowledge of the significant family member of the elderly people regarding nutritional needs of their elderly. And second phase consist of structured teaching programme followed by pre test administration.

Output:

Change is a feature of the process that is essential that is observable and measurable as output, which is entered into the system. i.e. input. In this study output refers to as the evaluation of target group for change in knowledge of the significant family member after structured teaching programme evidenced by post test score

Feedback:

It refers to process by which information is received at each stage of the system and its feedback as input to guide/direct in its evaluation

DESCRIPTION AND DEVELOPMENT OF TOOL:

Tool used for the research study was structured questionnaire, which was prepared to assess the effectiveness of structured teaching programme regarding the knowledge of the significant family member regarding special nutritional needs of the elderly. The tool was prepared after extensive review of literature search, consultation with experts, and based on the past clinical experience of the investigator.

DESCRIPTION OF THE TOOL:

The structured questionnaire consists of three sections covering the following areas:

Section A:

This section consists of 9 items seeking information about demographic proforma of significant family member of the elderly such as age, gender, religion, educational status, occupation, type of family, food pattern, previous exposure to information, and relationship with client.

Section B:

This section consists of structured self-administered questionnaire to assess the knowledge of significant family member of the elderly. It consists of 30 items. Each item was multiple choices with 4 responses.

Each correct answer is given a score of one and wrong answers a score of zero. The maximum score was 30. To interpret the knowledge the scores were distributed as follows:

- Inadequate knowledge <50%
- Moderately adequate knowledge 50-75%
- Adequate knowledge >75%

Section C:

DEVELOPMENT OF STRUCTURED TEACHING PROGRAMME (STP)

STP was developed based on review of related literature and the objectives stated for knowledge test. The title of the lesson plan was "**nutritional needs of the elderly"**

The researcher prepared S T P based on nine objectives in the form of lesson plan. The content in the S T P includes definition, physiological changes of the elderly people. Protein and its deficiency, rich sources of carbohydrates, vitamins and its deficiencies and body fluid mechanism.

CONTENT VALIDITY:

Content validity is the degree to which the item in an instrument adequately represents the universe of the content. Content validity has a special relevance to the individuals design a list to measure knowledge in specific content area. The entire section of the tool was validated by 4 nursing experts, one medical practitioner and one biostatistician. Their suggestions were taken into consideration and the modifications were incorporated in the preparation of the tool and structured teaching programme.

RELIABILITY:

Reliability is the degree of consistency or accuracy with which an instrument measures the attribute, which it designs to measure. Reliability was established by test -retest method for structured knowledge questionnaire. 10 samples were taken to check the reliability. Using Karl Pearson, Correlation formula was computed and 'r' value obtained was 0.87, which showed that tool was highly reliable.

DESCRIPTIVE STATISTICS

- Frequency and percentage distribution of demographic variables were done.
- Mean and standard deviation were used to determine pre-test and post-test knowledge.
- Distribution of scores on level of knowledge regarding nutritional needs of the elderly among significant family member of the elderly to be interpreted by summarizing into three categories such as inadequate, moderate, adequate.

INFERENTIAL STATISTICS:

- Paired't' test was used to determine the effectiveness of structured teaching programme on nutritional needs of the elderly among significant family member of the elderly
- Chi – square test was used to determine the relationship between level of pretest knowledge and corresponding demographic data.

IV. RESULTS AND DISCUSSION

This chapter deals with the analysis and interpretation of data collected to evaluate the effectiveness of a Structured Teaching Programme (STP) on knowledge of significant family member regarding special nutritional needs of the elderly in selected hospital. The purpose of analysis is to reduce the data into an interpretable and meaningful form so that the results can be compared and significance can be identified.

Part – I

Section A: -

Demographic variables of significant family member of the elderly.

Section B:-

An analysis of pre-test and posttest knowledge level of significant family member of the elderly was made under following headings

- Assessment of level of knowledge of the significant family member of the elderly in pre and post test
- Comparison of mean and standard deviation for the knowledge variables of significant family member of the elderly in pre and posttest.

Part II

Testing of Hypotheses

Section A – Effectiveness of structured teaching programme on nutritional needs of the elderly among significant family member of the elderly.

Section B – Association of the pretest level of knowledge of significant family member of the elderly with their demographic variables.

The following schematic outline will also lend guidance that might help explain the pattern of research and analysis.

Part -1

Section A: Demographic variables of significant family member of the elderly.

Table–1: Frequency and percentage distribution of significant family members of the elderly according to age, gender, religion, education and occupation. n=60

S.No	Demographic variables		Frequency	Percentage
1.	Age group (years)	21-30	22	36.7
		31-40	28	46.7
		41-50	10	16.7
		51-60	-	-
2.	Gender	Male	34	56.7
		Female	26	43.3
3.	Religion	Hindu	26	43.3
		Muslim	27	45.0
		Christian	7	11.7
		Others	-	-
4.	Education	Primary	5	8.3
		High School	22	36.7
		PUC	19	31.7
		Graduate/Post graduate	14	23.3
5.	Occupation	Unemployed	16	26.7
		Pvt.employee	30	50.0
		Govt.employee	3	5.0
		Self employed	11	18.3

The above table -1 represents that in relation to the age of family members 36.6% were in the age group between 21-30 years. 46.6% were in the age group between 31-40 years, 16.7% were in the age group between 41-50 years.

The distribution of the subjects according to gender shows that majority of the subjects were males 56.7% and 43.3% were females.

In the distribution based on the religion shows that 45.0% belong to Muslim religion, 43.3% to Hindu religion and 11.7% to Christian religion.

In the distribution based on the educational status shows that majority of them 36.6% had high school education, 31.7% had pre degree education, 23.3% were graduates and 8.3% had primary school education.

Distribution of the subjects based on the occupation shows that majority of them 50% were private employees, 26.7%were unemployed, 18.3% were self employed group and 5% were government employees.

Table–1a: Frequency and percentage distribution of significant family members according to type of family, previous exposure to information, relationship and food pattern n=60

S.No	Demographic variables		Frequency	Percentage
1.	Type of family	Nuclear	18	30.0
		Joint	42	70.0
		Extended	-	-
2.	Previous exposure to information	Yes	27	45.0
		No	33	55.0
3.	Relationship	Children	31	51.7
		Spouse	26	43.3
		Relatives	3	5.0
		Friends/ others	-	-
4.	Food pattern	Vegetarian	11	18.3
		Non-Vegetarian	41	68.3
		Mixed	8	13.3

The above table-1a represents that distribution of the client based on the type of the family shows that majority of the subjects 70% were joint family and 30% were from nuclear family.

55% had no previous exposure and 45% had previous exposure to information on nutritional needs of the elderly.

Distribution of the client based on the relationship shows that majority of the cases 51.7% of the significant family members were their children .43.3% were their spouses and 3% were their relatives.

With regards to their food pattern, majority of the subjects 68.3% were consuming non-vegetarian foods and 18.3% were consuming vegetarian foods.

Table–1 b: Frequency and percentage distribution of elderly client according to age, gender, diagnosis, duration of illness, duration of hospitalization, present mode of treatment and general functional ability.

n=60

Sl.No	Demographic variables		Frequency	Percentage%
1.	Age (years)	61-65	25	41.7
		66-70	30	50.0
		71-75	5	8.3
		76 and above	-	-
2.	Gender	Male	32	53.3
		Female	28	46.6
3.	Diagnosis	Systemic diseases	27	45.0
		Minor illness	29	48.3
		Minor surgeries	4	6.7
4.	Duration of illness	1-5days	24	40.0
		5-10 days	34	56.7
		10-15days	2	3.3
		>15 days	-	-
5.	Duration of hospitalization	<2 days	27	45.0
		2-5 days	32	53.3

		>5days	1	1.7
6.	**Present mode of treatment**	Surgeries	10	16.7
		Medication	39	65.0
		Others	11	18.3
7.	**General functional ability of the elderly**	Active/independent	14	23.3
		Passive/ dependent	26	43.3
		Interdependent	20	33.3

The above table-1b represents that in relation to the age of the elderly 41.7% were in the age group between 61-65 years. 50% were in the age group between 66-70 years, 8.3% were in the age group between 71-75 years.

The distribution of the subjects according to gender shows that majority of the subjects were males 53.3% and 46.6% were females.

The distribution based on the diagnosis shows that, 48.3% had minor illness, 45% had systemic illness and 6.7% had minor surgeries

Based on the duration of the illness 56.7% of elderly client were suffering with illness for 5-10 days.405 for 1-5 days and only 3.3% for 10-15 days.

The distribution based on the duration of the hospitalization shows that majority 53.3% were hospitalized for 2-5 days, 45% were hospitalized for less than 2 days and 1.7% were hospitalized for more than 5 days.

Distribution based on the present mode of the treatment shows that 65% patients were under medication, 16.7% had undergone surgery and18.3% are following other mode of treatment.

Distribution based on the general functional ability showed that majority of the elderly 43.35 were dependent in nature, 23.3% were independent and remaining 33.35 were in interdependent in nature.

Section –B: Assessment of level of knowledge of significant family member on special nutritional needs of the elderly before and after STP.

Level of knowledge of significant family members on special nutritional needs of the elderly was divided into 3 categories

<50% inadequate knowledge

51-75% Moderate knowledge

>75% adequate knowledge

Table–2: **Percentage and frequency distribution of significant family members on knowledge regarding special nutritional needs of elderly before STP.**

Level of Knowledge	**Classification of Respondents**	
	Pre test	
	Number	**Percentage**
Inadequate (< 50% of score)	58	96.7
Moderate (51-75% of score)	2	3.3
Adequate (> 75 % of score)	-	-
Total	60	100

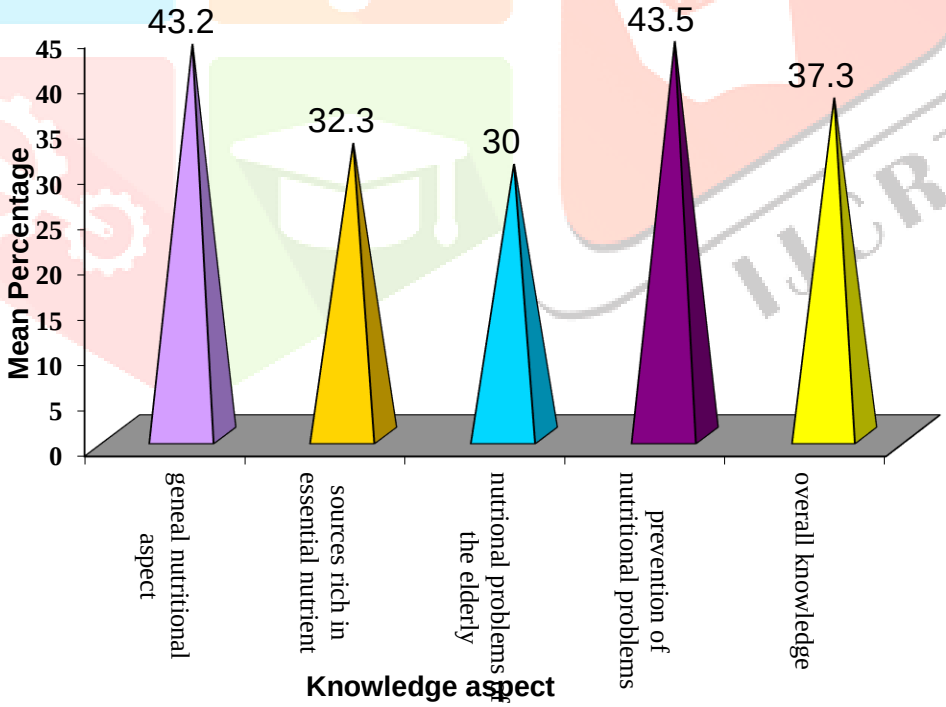
The above table shows that in the pre test, out of 60 subjects majority of them 58(96.7%) had Inadequate knowledge, two (3.3%) of them had moderate knowledge regarding nutritional needs of the elderly

Table -3::Mean Standard Deviation and mean percentage of knowledge of significant family members regarding special nutritional needs before STP.

No.	Aspects of knowledge	Statements	Max. Score	Range Score	Respondents Knowledge		
					Mean	SD	Mean(%)
1	General nutritional aspects	7	7	1-5	3.03	1.02	43.2
2	Sources rich in essential nutrient	8	8	1-5	2.58	1.04	32.3
3	Nutritional problems of elderly	7	7	0-4	2.10	1.00	30.0
4	Prevention of nutritional problems	8	8	1-6	3.48	1.17	43.5
5	Over all knowledge	30	30	6-16	11.20	2.55	37.3

The table represents the mean and SD of aspects of knowledge of significant family member regarding special nutritional needs of the elderly in pretest. Regarding general nutritional aspect, mean score was 3.03 with SD of 1.02 and mean percentage was43.2. Regarding sources rich in essential nutrient, mean score was 2.58 with SD of 1.04 and mean percentage was 32.3.Regarding nutritional problems of the elderly, mean score was 2.10 with SD of 1.00 and mean percentage was 30.0 Regarding prevention of nutritional problems, mean score was 3.48 with SD of 1.17 and mean percentage was 43.5.The overall mean score was 11.20 with SD of 2.55 and mean percentage was 37.3. It is evident that there is a gross inadequacy of knowledge regarding nutritional needs of the elderly among significant family members.

Graph-1 Distribution of mean knowledge scores of family member on nutritional needs of the elderly before STP.



Table–4: Percentage and frequency distribution of significant family members on knowledge regarding special nutritional needs of elderly after STP.

Level of Knowledge	Classification of Respondents	
	Post test	
	Number	Percentage
Inadequate (< 50% of score)	-	-
Moderate (51-75% of score)	23	38.3
Adequate (> 75 % of score)	37	61.7
Total	60	100.0

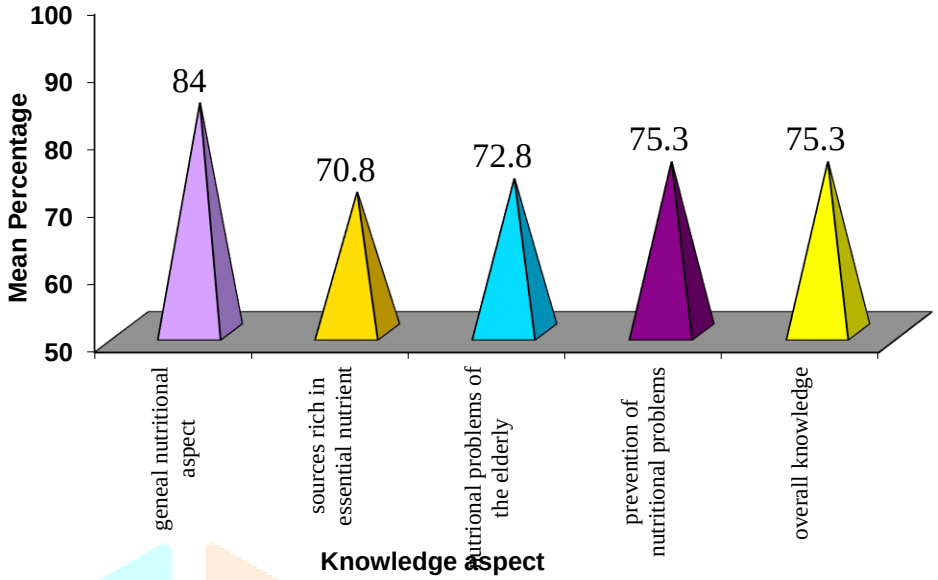
The above table shows thatin the posttest, majority of them 37(61.7%) had adequate knowledge, and 23(38.3%) had moderate knowledge regarding nutritional needs of the elderly.

Table -5: Mean Standard Deviation and mean percentage of knowledge of significant family members regarding special nutritional needs after STP.

No.	Aspects of knowledge	Statements	Max. Score	Range Score	Respondents Knowledge		
					Mean	SD	Mean (%)
1	General nutritional aspects	7	7	4-7	5.88	0.92	84.0
2	Sources rich in essential nutrient	8	8	3-7	5.67	0.95	70.8
3	Nutritional problems of elderly	7	7	3-7	5.10	0.91	72.8
4	Prevention of nutritional problems	8	8	3-8	6.03	0.97	75.3
5	Over all knowledge	30	30	19-26	22.6	1.97	75.3

The above table-5 represents the mean and SD of aspects of knowledge of significant family member regarding special nutritional needs of the elderly in post test. Regarding general nutritional aspect, mean score was 5.88 with SD of 0.92 and mean percentage was 84.Regarding sources rich in essential nutrient mean score was 5.67 with SD of 0.95 and mean percentage was 70.8.Regarding nutritional problems of the elderly mean score was 5.10 with SD of 0.91 and mean percentage was 72.8. Regarding prevention of nutritional problems, mean score was 6.03 with SD of 0.97 and mean percentage was 75.3.The over all mean score was 22.6 with SD of 1.97 and mean percentage was 75.3.it is evident that there is increase in mean score

Graph-2 Distribution of mean knowledge scores of significant family members on nutritional needs of elderly after STP



Table–6: Percentage and frequency distribution of significant family members on knowledge regarding special nutritional needs of elderly before and after STP

Knowledge	Respondents Knowledge			
	Pre test		Post test	
	No.	%	No.	%
Inadequate (< 50%)	58	96.7	-	-
Moderate (50-75%)	2	3.3	23	38.3
Adequate (> 75%)	-	-	37	61.7
Total	60	100.0	60	100.0

The above table shows that in the pretest out of 60 subjects majority of them 58 (96.7%) had inadequate knowledge, 2 (3.3%) of them had moderate knowledge and no subject had adequate knowledge. In the posttest majority of them 37(61.7%) had adequate knowledge, 23(38.3%) had moderate knowledge and none of them had inadequate knowledge.

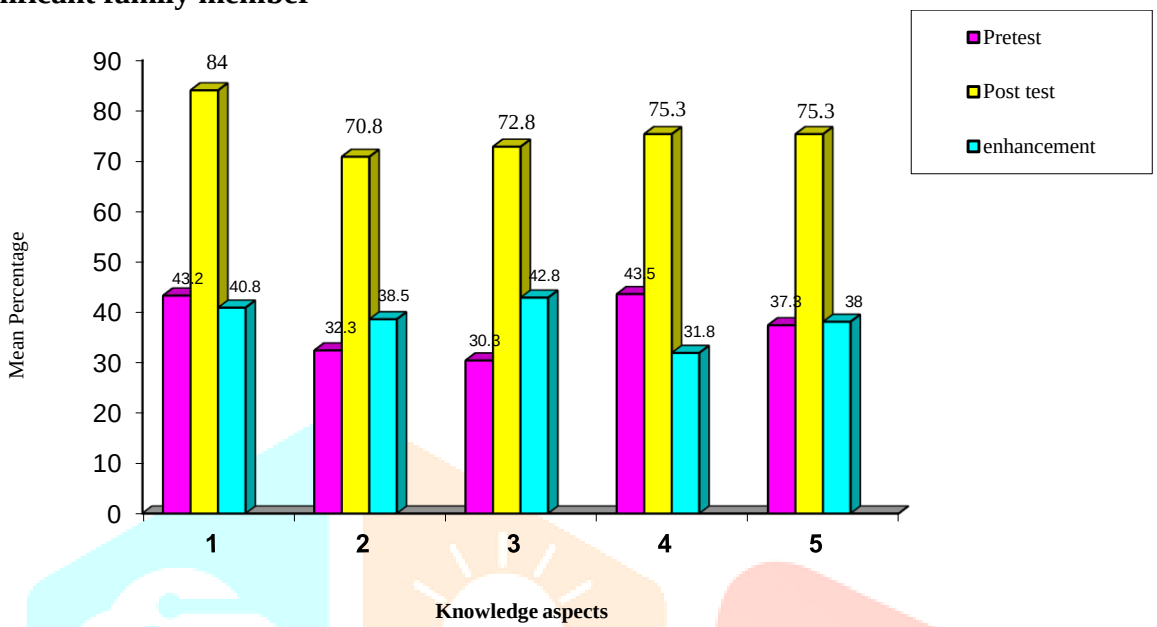
Table 7: Mean Standard Deviation and Mean percentage of knowledge of significant family members regarding special nutritional needs before and after STP.

S. No	Aspect of knowledge	Maximum Possible Score	Pretest		Post test		Gain in mean score percentage
			Mean	Mean score %	Mean	Mean score %	
1	General nutritional aspects	7	3.03	43.2	5.88	84.0	40.8
2	Sources rich in essential nutrient	8	2.58	32.3	5.67	70.8	38.5
3	Nutritional problems of elderly	7	2.10	30.0	5.10	72.8	42.8
4	Prevention of nutritional problems	8	3.48	43.5	6.03	75.3	31.8
5	Over all knowledge	30	11.20	37.3	22.6	75.3	38.0

The pre test shows that the highest enhancement knowledge score found on prevention of nutritional problems (43.5) followed by general nutritional aspect (43.2) and lowest found in the aspect of nutritional problems of elderly (30%). This indicates that inadequate knowledge score is obtained on nutritional needs of the elderly in the pre test.

The posttest shows that the highest enhancement knowledge score found on general nutritional aspect (84%) followed by prevention of nutritional problems (75.3%) and lowest found in the aspect of source rich in essential nutrients. The findings also indicate the impact of intervention programme statically significant at 0.05 levels for all the knowledge aspect under the study. Therefore the findings reveal that the significant family member's knowledge improvedafteradministration of planned teaching programme.

Graph-3 Mean percentage of pretest, posttest, enhancement score of the knowledge aspect of significant family member



1. General nutritional aspect
2. Sources rich in essential nutrients
3. Nutritional problems of elderly
4. Prevention of nutritional problems
5. Overall knowledge

Part II –

Testing of Hypothesis

Section –A: Effectiveness of structured teaching programme on knowledge on nutritional needs of the elderly among the significant family member

Table 8: Enhancement Mean, SD and Paired't' value betweenpre test and posttest.

S.No.	Aspects of knowledge	Pretest		Post test		Enhancement		Paired 't' value	P-Value
		Mean	SD	Mean	SD	Mean	SD		
1	General nutritional aspects	3.03	1.02	5.88	0.92	2.85	0.1	15.50*	P<0.001
2	Sources rich in essential nutrient	2.58	1.04	5.67	0.95	3.09	0.09	15.47*	P<0.001
3	Nutritional problems of elderly	2.10	1.00	5.10	0.91	3.00	0.09	16.86*	P<0.001
4	Prevention of nutritional problems	3.48	1.17	6.03	0.97	2.55	0.2	13.47*	P<0.001
5	Over all knowledge	11.20	2.55	22.6	1.97	11.4	0.58	28.39*	P<0.001

Note: *- Significant at P<0.001for 59 df

The table represents the mean pre and posttest knowledge of the significant family member regarding special nutritional needs of the elderly.

With regards to knowledge variable general nutritional aspect, the mean enhancement score obtained was2.85 with SD 0.1 and the obtained‘t’ value was 15.50 which was significant at p<0.001. The mean enhancement score for knowledge variable sources rich in essential nutrients was 3.09 with SD 0.09 and the paired‘t’ value was 15.47 which was significant at p< 0.001. In relation to nutritional problems of elderly, the mean enhancement score was 3.00 and the paired t-test was carried out with SD 0.09 and it was found to be remain significant at P< 0.001 level of significance (3.725). With regard to prevention of nutritional problems, the mean enhancement score obtained was2.55 with SD 0.2 and the obtained‘t’ value was 13.47 which was significant at p<0.001. With regard to over all knowledge, the mean enhancement score obtained was11.4 with SD 0.58 and the obtained‘t’ value was 28.39 which was significant at p<0.001. It is evident that the structured teaching programme is significantly effective in improving the knowledge regarding nutritional needs of the elderly.

Section-B: Association between knowledge and selected demographic variables of significant family members of elderly.

Table 9: Association of pretest knowledge and selected demographic variables such as age, gender, religion, education and occupation, type of family, previous exposure to information, relationship with client and food pattern

n=60

Demographic variables	**Sample (n)**		**Knowledge level of Respondents**				Chi-square χ^2 -value
	No. (60)	**%**	**<Median**		**≥ Median**		
			No. (32)	**%**	**No. (28)**	**%**	
1.**Age (years)**							
21-30	22	36.7	7	21.9	15	53.6	6.643, df=2, **S*** P<0.05
31-40`	28	46.7	19	59.4	9	32.1	
41-50	10	16.7	6	18.8	4	14.3	
51-60	-	-	-	-	-	-	
2.**Gender**							
Male	34	56.7	19	59.4	15	53.6	0.205, df=1, NS P>0.05
Female	26	43.3	13	40.6	13	40.6	
3.**Religion**							
Hindu	26	43.3	11	34.4	15	53.6	2.572, df=2, NS P>0.05
Muslim	27	45.0	16	50.0	11	39.3	
Christian	7	11.7	5	15.6	2	7.1	
Others	-	-	-	-	-	-	
4.**Education**							
Primary	5	8.3	5	15.6	0	0	21.714, df=3, S P<0.05
High school	22	36.7	17	53.1	5	17.9	
PUC	19	31.7	9	28.1	10	36.7	
Graduate/ Post graduate	14	23.3	1	3.1	13	46.4	
5. Occupation							
Unemployed	16	26.7	9	28.1	7	25.0	5.280, df=3, NS P>0.05
Private employee	30	50.0	15	46.9	15	53.6	
Govt.employee	3	5.0	0	0	3	10.7	
Self-employed	11	18.3	8	25.0	3	10.7	

6. **Type of family** Nuclear	18	30.0	9	28.1	9	32.1	0.155, df=1, NS P>0.05
Joint	42	70.0	23	71.9	19	67.9	
Extended	-	-	-	-	-	-	
7.**Previous exposure to information** Yes	27	45.0	13	40.6	14	50.0	2.811, df=2, NS P>0.05
No	33	55.0	19	59.4	14	50.0	
8. **Relationship with client** Children	31	51.7	17	53.1	14	50.0	1.207, df=1, NS P>0.05
Spouse	26	43.3	14	43.8	12	42.9	
Relatives	3	5.0	1	3.1	2	7.1	
Friends/others	-	-	-	-	-	-	
9. Food pattern Vegetarian	11	18.3	6	18.8	5	17.9	0.938, df=2, NS P>0.05
Non-vegetarian	41	68.3	23	71.9	18	64.3	
Mixed	8	13.3	3	9.4	5	17.9	

Note: S-Significant at 5% level ($p<0.05$); NS- Not significant at 5% level ($p>0.05$)

The table represents the association between selected demographic variables and the pre-test knowledge level of the significant family member of the elderly on nutritional needs of the elderly. In relation to variable age the chi-square value obtained was 6.643, df =2 which showed significance at $P<0.05$ level, and in relation to variable education chi-square value obtained was 21.714, df = 3 which showed significance at $P<0.01$.

In relation to variables, gender, religion, occupation, type of family, previous exposure to information, relationship with client, food pattern, the chi- square values obtained was 0.205,2.572,5.280,0.155,2.811,1.207,0.938 respectively which does not show any association with level of knowledge and hence, there is no significant association of pre-test level of knowledge with these demographic variables.

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