



(RESEARCH ARTICLE)



A study to assess the effectiveness of structured teaching programme on knowledge regarding diarrhoea in elderly among patient attendants in a selected hospital at Mangalore

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Abstract

Diarrhoea is a common problem among the elderly. “A study to assess the effectiveness of structure teaching programme on knowledge regarding diarrhoea in elderly among patient attendants in a selected hospital at Mangalore” has been carried by Ms. Moirangthem Soniya Devi in partial fulfilment of the requirements of the Masters of Science in Medical-Surgical Nursing at Srinivas Institute of Nursing Science, under Rajiv Gandhi University of Health Science, during 2016- 2018.

Objectives of the study: The objectives of the study are to: assess the pre-test knowledge scores regarding diarrhoea in elderly patient attendants among at selected hospital, Mangalore, evaluate the effectiveness of structured teaching programme on knowledge regarding diarrhoea in elderly among patient attendants at selected hospital, Mangalore, To find the association between pre-test knowledge scores regarding of diarrhoea with selected socio demographic variables.

Method: One group pre-test – post-test design was used. Imogene King’s Goal Attainment theory is used for preparing conceptual framework. The main study was conducted at selected hospital (Srinivas Institute of Health Sciences and Research Center) in Mukka. The sampling technique used was purposive sampling. Data collected by demographic proforma and structured knowledge questionnaire on knowledge regarding diarrhoea in elderly among patient attendants. Data collection was done from 18-3-2018 to 27-3-2018. Samples of the study consisted of 50 patient attenders in the respective hospital. Pre-test, and post-test were done. Data was analyzed by using descriptive and inferential statistics.

Results: Result of the present study shows majority of the patient attendants 18 (36%) were in the age group of 20-35 years, >50, 1 (2%) belonged to the age group of >20 years and 13 (26%) were in the age group of 35-50 years. Majority of the patient attendants 23 (46%) were Hindus, 17 (34%) were Muslims, and 10 (18.0%) were Christian. Majority 19 (38%) of patient attendants had completed higher secondary education, 17 (34%) had completed graduation, 9 (18.0%) had completed primary education, and 5 (10%) had high school education. Majority 30 (60%) of patient attendants were housewives, 14 (28%) were private employees, and 6 (12%) were government employees. More than half of the population, that is, 52% had monthly income of < Rs. 5,000, 14 (28%) had > Rs. 10,000 monthly salary, and 10 (20%) had Rs. 5,000-10,000 monthly income. Majority 35 (70%) of patient attendants belonged to nuclear family, and 15 (30%) belonged to joint family. Majority 49 (98%) of patient attendants were having mixed diet and 1 (2%) was vegetarian. There was a significant difference in the mean post-test knowledge score (20.0) than the mean pre-test knowledge score (14.86). There was no significant association between the pre-test knowledge score and the selected variables of the study.

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Keywords: Diarrhoea in elderly; Effectiveness of structured teaching; Hospital; Knowledge

1. Introduction

Diarrhoea is a common problem of diverse aetiology in the elderly that can have catastrophic results. Although most cases of dehydration from diarrhoea result from gastrointestinal infections, non-infectious causes of diarrhoea related to prescription of laxatives, side effects of medications, and use of enteral feedings are very often. And frequently, they are also less likely to ignore the complaints of diarrhoea, perhaps because diarrhoea because of the setting of incontinence in this age group.¹ Because of physiological heterogeneity, the elderly are not at equal risk of acquiring diarrhoea, but compared to younger persons they are more susceptible. In the elderly, the likelihood of diarrhoea increases due to diminished physiological reserves, the burden of acute or chronic multisystem illnesses, under-nutrition, general debility and cognitive impairments. Diarrhoea is also relevant to the elderly as it is an important cause of morbidity and potential mortality. The frequency and severity of dehydration and electrolyte loss, which may cause death increases in the elderly and even a short episode of diarrhoea may result in severe nutritional deficiencies.² Multiple factors predispose the elderly to diarrhoea. The aging process influences physiological homeostatic mechanisms increasing vulnerability to enteric pathogens. Some systemic diseases more common in the elderly directly involve the gastrointestinal tract and cause diarrhoea. A prominent cause of diarrhoea is gastrogenic due to radiation therapy, and surgery on the gastrointestinal tract though the most common cause is drug therapy. The elderly are at an increased risk of diarrhoea from nosocomial due to institutionalisation, and admission to acute hospitals associated with a longer length of stay.^{2,3} The approach to an elderly patient with diarrhoea is to ensure proper hydration using available oral rehydration solutions, proceed with diagnostic tests likely to yield a positive result, avoid the use of harmful antiperistaltic drugs, and provide adequate follow-up of the nutritional state. Attentive and vigilant nursing staff is crucial in the timely diagnosis and for careful observation to improve the condition and reduce mortality.⁴

2. Material and methods

2.1. Research approach

Research approach is the basic procedure for conducting the research study. An evaluatory research approach using the pre-test (O_1) and post-test (O_2) design was adopted to evaluate the effectiveness of structured teaching programme on knowledge regarding diarrhoea in elderly among patient attendants at selected hospital in Mangalore.

2.2. Research design

Research design is the overall plan for addressing a research question, including specifications for enhancing the integrity of the study.

2.3. Variables

2.3.1. Variables under study

Variables refers to a characteristic or an attribute of a person that varies with in the population under study.

2.3.2. Independent variable

In the present study independent variable is structured teaching programme (STP) on knowledge regarding diarrhoea in elderly.

2.3.3. Dependent variable

In this present study dependent variable is knowledge of patient attendants regarding diarrhoea in elderly.

2.3.4. Extraneous variable

In this study age in years, religion, education, occupation, monthly income, type of family, dietary are the extraneous variables.

Setting of the study

Setting is the physical location and conditions in which data collection takes place in a study. Setting of the present study is the hospital which offer good treatment and care for patients those who are seeking their serves. The main study was

conducted in Srinivas Hospital, Mukka. 50 patient attendants were selected for the study. In this study pre-experimental with single group pre and post-test design was adopted for this study.

2.3.5. Population

Population denotes the entire group of subjects under study. Population refers to the target body of cases or individual being researched which conforms to the specific set of particulars. The population of the study are patient attendants in the selected hospital, Mangalore.

2.3.6. Sample

Sample is a subset or portion selected to represent the population of interest. Fifty samples participated in this study.

2.3.7. Sampling technique

Sampling technique is a process of selecting a subset of the population in which entire population is represented. The investigator had adopted a purposive sampling technique to select the sample. The investigator took all the patient attendants available in Srinivas Hospital in Mangalore.

3. Results

3.1. Organization of findings

The data is analyzed and presented under the following headings:

- Section A: Demographic characteristics of the patient attendants in selected hospital
- Section B: Knowledge of patient attendants regarding diarrhoea in elderly.
- Section C: Knowledge of patient attendants regarding of diarrhoea in elderly.
- Section D: Effectiveness of structure teaching programme on knowledge regarding diarrhoea in elderly.
- Section E: Association of pre-test knowledge score on diarrhoea in elderly on selected demographic variables.

3.2. Section A: Demographic characteristics of the caregiver in selected hospital

Table 1 Frequency and percentage distribution of the caregiver according to demographic characteristics N=50

Sl. No.	Demographic Variables	Frequency	Percentage
1.	Age		
	<20	1	2.0
	20-35	18	36.0
	35-50	13	26.0
	>50	18	36.0
2.	Religion		
	Hindu	23	46.0
	Muslim	17	34.0
	Christian	10	18.0
3.	Educational status		
	Primary	9	18.0
	High school	5	10.0
	Secondary	19	38.0
	Graduate	17	34.0
4.	Occupation		

Sl. No.	Demographic Variables	Frequency	Percentage
	House wife	30	60.0
	Government employee	6	12.0
	Private employee	14	28.0
5.	Monthly income		
	<5000	26	52.0
	5000-10000	10	20.0
	>10000	14	28.0
6.	Type of family		
	Nuclear	35	70.0
	Joint	15	30.0
7.	Dietary pattern		
	Vegetarian	1	2.0
	Mixed	49	98.0

3.3. Section B: Knowledge of patient attendant regarding the diarrhoea in elderly before structured teaching programme

3.3.1. Objective 1

Assess the pre-test knowledge score regarding diarrhoea in elderly at selected hospital, Mangalore.

Table 2 Frequency and percentage distribution of patient attendants on pre-test knowledge score regarding diarrhoea in elderly n=50

Knowledge score	Pre-test	
	Frequency	Percentage
Poor	1	2.0%
Average	36	72%
Good	13	26%
Total	50	100%

3.4. Section C: Knowledge of patient attendants regarding diarrhoea in elderly after structured teaching programme

Table 3 Frequency and percentage distribution of patient attendants on post-test knowledge score regarding diarrhoea in elderly n=50

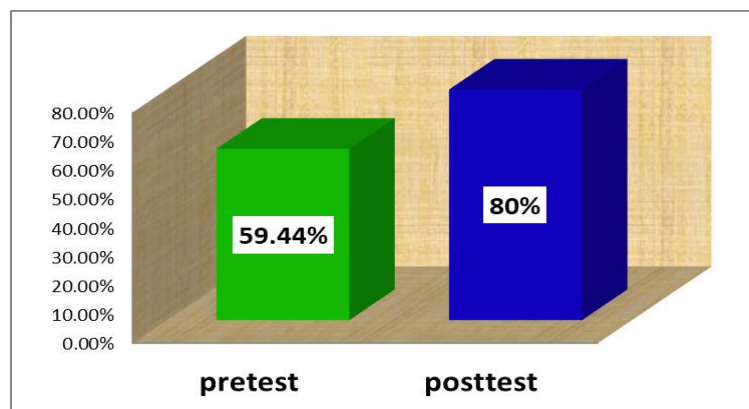
Knowledge score	Post-test	
	Frequency	Percentage
Poor	0	0%
Average	0	0%
Good	50	100%
Total	50	100%

Table 4 Effectiveness of structured teaching programme on knowledge regarding diarrhoea in elderly n=50

Parameters	Min score	Max score	Mean score	SD	Mean percentage	Mean difference	't' value	df	p value
Pre-test	8	21	14.86	2.935	59.44%	5.14	19.51	49.00	0.000
Post-test	17	24	20.00	1.629	80.0%				

To compare pre-test and post-test knowledge score paired 't' test was used in order to test the statistical significance the following research hypothesis was stated.

- H1: There will be a significant difference between mean pre-test and post-test knowledge scores of patient attendants regarding diarrhoea in elderly.

**Figure 1** Cylindrical diagram showing the pre-test and post-test mean percentage knowledge score patient attendants

Data in Table 4 and Figure 1 shows that the mean post-test knowledge score (88%) was higher than the mean pre-test knowledge score (59.44%). P value was 0.00 which is less than table value at 0.05 level. Hence, the research hypothesis is rejected and null hypothesis is accepted at 0.05 level of significance, stating that there is significant effect of structured teaching programme regarding diarrhoea in elderly among patient attendants in Srinivas Hospital, Mangalore.

Area-wise pre-test knowledge score of patient attendants regarding diarrhoea in elderly

Table 5 Area-wise pre-test knowledge score of patient attendants regarding diarrhoea in elderly n=50

Area	Min. score	Max. score	Max possible score	Mean	SD	SD error	Mean %
Meaning of diarrhoea	0	1	1	0.94	0.240	0.034	94
Causes of diarrhoea	0	1	1	.32	.471	0.067	32
Mode of transmission of diarrhoea	0	1	1	.68	.471	0.067	68
Signs and symptoms of diarrhoea	0	2	2	1.00	.571	0.081	50
Diagnostic evaluation of diarrhoea	0	1	1	.36	.485	0.069	36
Management of diarrhoea	3	9	10	6.34	1.611	0.228	63.4
Prevention and control of diarrhoea	2	6	7	4.02	1.097	0.155	57.43
Complications of diarrhoea	0	2	2	1.32	.683	0.097	66
Overall pre-test knowledge	8	21	25	14.86	2.935	0.415	59.44

Table 6 Area-wise post-test knowledge score of patient attendants regarding diarrhoea in elderly n=50

Area	Min. score	Max. score	Max possible score	Mean	SD	SD error	Mean %
Meaning of diarrhoea	1	1	1	1.00	0.000	0.0	100
Causes of diarrhoea	0	1	1	0.66	0.479	0.068	66
Mode of transmission of diarrhoea	1	1	1	1.00	0.000	0	100
Signs and symptoms of diarrhoea	0	2	2	1.24	0.517	0.073	62
Diagnostic evaluation of diarrhoea	0	1	1	.64	0.485	0.069	64
Management of diarrhoea	6	10	10	8.32	0.844	0.119	83.2
Prevention and control of diarrhoea	4	7	7	5.64	0.776	0.110	80.57
Complications of diarrhoea	0	2	2	1.50	0.544	0.077	75
Overall post-test knowledge	17	24	25	20.00	1.629	0.23	80%

Table 7 Area-wise effectiveness of structured teaching programme on knowledge of patient attendants regarding diarrhoea in elderly n=50

Area	Pre-test of mean	Post-test of mean	SD pre-test	SD post-test	Mean diff	SD of diff	Percentage gain	't' value	Df	p Value
Meaning of diarrhoea	0.94	1.00	0.240	0.000	0.060	0.240	6%	1.769	49	0.083
Causes of diarrhoea	0.32	0.66	0.471	0.479	0.340	0.557	34%	4.314*	49	0.000
Mode of transmission of diarrhoea	0.68	10.00	0.471	0.000	0.320	0.471	32%	4.802*	49	0.000
Signs and symptoms of diarrhoea	10.00	10.24	0.571	0.517	0.240	0.687	12%	2.471*	49	0.017
Diagnostic evaluation of diarrhoea	0.36	0.64	0.485	0.485	0.280	0.573	28%	3.456*	49	0.001
Management of diarrhoea	6.34	8.32	1.611	0.844	1.980	1.348	19.8%	10.390*	49	0.000
Prevention & control of diarrhoea	4.02	5.64	1.097	0.776	1.620	0.945	23.14%	12.119*	49	0.000
Complications of diarrhoea	1.32	1.50	0.683	0.544	0.180	0.748	9%	1.703	49	0.095

P value<0.05 * Significant

The data in Table 7 shows area-wise effectiveness of structured teaching programme on knowledge regarding diarrhoea in elderly among patient attendants. The data indicate the highest percentage gain of knowledge score is in area concerned with causes of diarrhoea 34% and the lowest percentage gain is in the meaning of diarrhoea 6%. There was 33% gain in the area of mode of transmission, 12% in the area of signs and symptoms, 28% in the area diagnostic

evaluation, 19% in the area of management of diarrhoea, 24.4% in the area of prevention of diarrhoea and 9% in the area of complications of diarrhoea.

3.5. Section E: Association of pre-test knowledge score on patient attendants regarding diarrhoea in elderly and selected demographic variables

3.5.1. Objective 3

Find out an association between pre-test knowledge score on patient attendants regarding diarrhoea in elderly and selected demographic variables.

Table 8 Association of pre-test knowledge score on patient attendants regarding diarrhoea in elderly and selected demographic variables n=50

Variable	Knowledge score		χ^2 / Fisher's test	df	P value	Significance
	Below average	Above average				
Age in years						
20-35	10	9	2.468	2	0.291	NS
35-50	6	7				
50-65	13	5				
Religion						
Hindu	13	10	0.038	1	0.845	NS
Others	16	11				
Educational status						
Primary & high school	8	6	0.390	2	0.823	NS
Higher Secondary	12	7				
Graduate	9	8				
Occupation						
House Wife	20	10	2.313	1	0.128	NS
Occupation						
House Wife	20	10	2.313	1	0.128	NS
Private employee	9	11				
Monthly income						
<5000	15	11	0.002	1	0.963	NS
5000-10000	14	10				
Type of family						
Nuclear	20	15	0.035	1	0.851	NS
Joint	9	6				
Dietary pattern						
Vegetarian	0	1			0.420	NS
Mixed	29	20				

S=significant NS=Not significant

Chi-square test, Yates correction test and fishers exact probability test was computed to determine the association of pre-test knowledge score of patients attendants regarding diarrhoea in elderly and selected demographic variables.

- H2: There will be a significant association between pre-test knowledge scores regarding diarrhoea in elderly and selected demographic variables.

The data presented in Table 8 shows that age, religion, educational status, occupation, monthly income, type of family, dietary pattern of the family did not show any significant association (since p value was found to be greater than 0.05) Hence, research hypothesis is rejected and null hypothesis is accepted.

4. Discussion

This chapter deals with the discussions in accordance with the objectives of the study and hypotheses. The statement of the problem was “A study to assess the effectiveness of structure teaching programme on knowledge regarding diarrhoea in elderly among patient attendants in a selected hospital at Mangalore.”

Objectives of the study

- assess the pre-test knowledge scores regarding diarrhoea in elderly patient attendants among at selected hospital, Mangalore
- evaluate the effectiveness of structured teaching programme on knowledge regarding diarrhoea in elderly among patient attendants at selected hospital, Mangalore
- To find the association between pre-test knowledge scores regarding of diarrhoea with selected socio-demographic variables.

4.1. Organization of findings

The data is analyzed and presented under the following headings:

- Section A: Demographic characteristics of patient attendants.
- Section B: Knowledge of patient attendants regarding diarrhoea in elderly before structured teaching programme.
- Section C: Knowledge of patient attendants regarding diarrhoea in elderly after structured teaching programme.
- Section D: Effectiveness of structured teaching programme on knowledge regarding diarrhoea in elderly.
- Section E: Association of pre-test knowledge score on knowledge regarding diarrhoea in elderly and selected demographic variables.

4.2. Major findings of the study

4.2.1. Section A: Demographic characteristics of patient attendants

- Majority of the patient attendants 18 (36.0%) were in the age group of between 20 – 35 and >50.
- Majority of the patient attendants 23 (46.0%) were Hindu.
- Majority 19(38%) of patient attendants had completed higher secondary.
- Majority 30 (60%) of patient attendants were house wife.
- More than half of the population that is majority of (52%) had <5000 monthly income.
- Majority 35 (70%) of patient attendants belongs to nuclear family.
- Majority 49 (98%) of patient attendants were having mixed diet.

4.2.2. Section B: Knowledge of patient attendants regarding diarrhoea in elderly before structured teaching programme

Objective 1

Assess the pre-test knowledge score regarding diarrhoea in among patient attendants at selected hospital, Mangalore.

The findings of the present study shows that during pre-test majority of patient attendants 72% had average knowledge and 2.0% had poor knowledge 26% had good knowledge regarding diarrhoea in elderly.

These findings of the study were supported by a cross-sectional study conducted aetiology, clinical features, and socio-demographic background of adults with diarrhoea attending different urban and rural diarrhoea l disease hospitals in Bangladesh by Ferrdous and his team between January 2010 and December 2011. The questionnaire was handed out to 100 patient attendants. The result show that patient attendants know how to manange the diarrhoea at home. Procedures carried out in case of a emergency and complications and risk factors for the development of infections related to diarrhoea. The study concludes that the patient attendants have insufficient knowledge of diarrhoea in elderly. A retrospective screening of one year's durations was conducted to evaluate the theoretical knowledge and practices by Kinnunen and his co-workers on 245 permanently hospitalized geriatric patients to study the frequency and cases of periods of at least three days' diarrhoea. Such periods were suffered by 65/245 patients and 32% had recurrences. Faecal impaction was the most common cause of diarrhoea (in 55%). The study concludes that, there is a need for increased theoretical knowledge and improvement in practices regarding diarrhoea in elderly.

4.2.3. Section C: Knowledge of patient attendants regarding diarrhoea in elderly after structured teaching programme

In the post-test all the samples (100%) had good knowledge and none were in the category of average knowledge and poor knowledge regarding diarrhoea in elderly.

This finding is supported by a similar study conducted among 2163 adults over 55 years of age was conducted in Sonoma County, California from September 2001 to September 2005 to determine the average monthly prevalence of gastrointestinal illness (vomiting or diarrhoea) was 7.34% (6.23, 8.63), corresponding to an incidence rate of 0.99 (95% CI: 0.84, 1.48) episodes per person per year. Of those reporting gastrointestinal illness, 30.0% experienced vomiting, 23.4% sought medical care, and 10.8% took antibiotics. In the study, seasonal temporal trends were observed with prevalence peaking in summer and winter quarters. And it was evident that endemic gastrointestinal illness represents a substantial burden among community dwelling elderly impacting quality of life and prompting health care utilization and also provides benefits in learner (patient attendants).

4.2.4. Section D: Effectiveness of structured teaching programme on knowledge regarding diarrhoea in elderly

Objective 2

Evaluate the effectiveness of structured teaching programme on knowledge regarding diarrhoea in elderly among patient attendants at selected hospital, Mangalore

To compare pre-test and post-test knowledge score, paired 't' test was used in order to test the statistical significance, the following research hypothesis was stated.

- H₁: There will be a significant difference between mean pre-test and post-test knowledge scores of patient attendants regarding diarrhoea in elderly.

The findings of the present study shows that the mean post-test knowledge score 20.00 was higher than the mean pre-test knowledge score 14.86. P value was 0.00 which is <0.05. Hence, the research hypothesis is accepted and null hypothesis is rejected at 0.05 level of significance, stating that there is significant effect of structured teaching programme regarding diarrhoea in elderly.

This finding is supported by a study conducted on Interim evaluation of a large scale sanitation, hygiene and water improvement programme on elderly diarrhoea and respiratory disease in rural Bangladesh. Study assessed behaviours at baseline in 2007 and after 6 months and 18 months by conducting structured observation of handwashing behaviour in 500 intervention and 500 control households. Study also collected monthly data on diarrhoea and respiratory illness from 500 intervention and 500 control households from October 2007 to September 2009. Participants washed their hands with soap < 3% of the time around food related events in both intervention and control households at baseline and after 18 months. Washing both hands with soap or ash after cleaning a child's anus increased from 22% to 36%, and no access to a latrine decreased from 10% to 6.8% from baseline to 18 months.. This large scale sanitation, hygiene and water improvement programme resulted in improvements in a few of its targeted behaviours.

4.2.5. Section E: Association of pre-test knowledge score on diarrhoea in elderly and demographic variables

Objective 3

find out an association between pre-test knowledge score on diarrhoea in elderly and selected demographic variables.

Chi-square tests, Yates correction test and fishers exact probability test was computed to determine the association of pre-test knowledge score of patient attendants regarding diarrhoea in elderly and selected demographic variables.

- H2: There will be a significant association between pre-test knowledge scores regarding diarrhoea in elderly and selected demographic variables.

Findings of the present study shows that age, religion, education, occupation, monthly income, type of family and dietary pattern did not show any significant association (since p value was found to be greater than 0.05) Hence, research hypothesis is rejected and null hypothesis is accepted

5. Conclusion

Diarrhoea is a common problem of diverse aetiology result from gastrointestinal infections, non-infectious causes related to prescription of laxatives, side effects of medications, and use of enteral feedings are very often. And frequently, they are also less likely to ignore the complaints of diarrhoea, perhaps because diarrhoea because of the setting of incontinence in this age group. Because of physiological heterogeneity, the elderly are not at equal risk of acquiring diarrhoea, but compared to younger persons they are more susceptible. In the elderly diarrhoea is also relevant to the elderly as it is an important cause of morbidity and potential mortality. The frequency and severity of dehydration and electrolyte loss, which may cause death increases in the elderly and even a short episode of diarrhoea may result in severe nutritional deficiencies.

Compliance with ethical standards

Acknowledgments

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Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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