

Impact of Structured Teaching Programme on Knowledge Regarding Selected Water Borne Diseases among Secondary School Students of Muslim Educational Institute (MEI) Pampore Kashmir

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Abstract: The burden of waterborne diseases is paramount in the globe. About 4% of the global burden of diseases is attributable to water, sanitation and hygiene. Every year more than 3.4 million people die as a result of water-related diseases, making it the leading cause of morbidity and mortality around the world. Most of the victims are young children, the vast majority of whom die of illnesses caused by organisms that thrive in water sources contaminated by raw sewage.(WHO, 2014). Studies have revealed that a higher incidence of water borne diseases are found in school going children. The present study aimed to assess the knowledge regarding selected water borne diseases among secondary school students of selected school, Pampore, Kashmir. A Pre-experimental study using quantitative evaluative research approach and one group pre-test post-test design was adopted. Simple random sampling technique was used to select the sample of 100 secondary school students of the age group of 14-16 years of Muslim Educational Institute (MEI) Pampore Kashmir. Demographic profile and structured knowledge questionnaire was used to assess the level of knowledge regarding selected water borne diseases among secondary school students. The results of the study revealed that in pre-test, 77 (77%) of the study subjects had poor level of knowledge regarding water borne diseases, 17 (17%) had average level of knowledge, 6 (6%) had good level of knowledge and none had excellent level of knowledge. Whereas in the post-test, 84 (84%) of the study subjects had excellent level of knowledge, 15 (15%) of the study subjects had good level of knowledge, 1(1%) of the study subject had average level of knowledge and none had poor level of knowledge regarding selected water borne diseases. The mean pre-test knowledge score was (20.59) which improved to (50.82) in post-test at ($p < 0.001$). A significant association was found between gender ($p \leq 0.001$) of study subjects and the pre-test knowledge scores. Whereas no association was found between education of father ($p=0.149$), education of mother ($p=0.235$), total monthly family income ($p=0.759$), residence ($p=0.987$), source of drinking water ($p=0.391$) and the pre-test knowledge scores ($p \leq 0.05$).

Keywords: Assessment, Knowledge, Waterborne diseases, Diarrhea, Typhoid, Structured Teaching Programme, Secondary School Students, Drinking Water.

INTRODUCTION AND BACKGROUND

Water is life, but more than a billion people in India do not have access to safe water. Lack of safe water results in untold suffering, diseases, infant mortality, stunted growth and economic loss. In India 70 per cent of its surface water resources and a growing percentage of its groundwater reserves are contaminated by biological, toxic, organic, and inorganic pollutants. In many cases, these sources have been rendered unsafe for human consumption as well as for other activities. The UN reported that India's water quality is poor - it ranks 120th among the 122 nations in terms of quality of water available to its citizens.¹

Every year more than 3.4 million people die as a result of water-related diseases, making it the leading cause of morbidity and mortality around the world. Most of the victims are young children, the vast majority of whom die of illnesses caused by organisms that thrive in water sources contaminated by raw sewage. - (WHO, 2014).²

Ensuring poor people's access to safe drinking water and encouraging personal, domestic and community sanitation and hygiene will improve the quality of life for millions of individuals worldwide. Better management of water resources to reduce the transmission of vector-borne diseases (such as viral diseases carried by mosquitoes) and to make water bodies safe for recreational and other uses can save many lives. It also has extensive direct and indirect

economic benefits, from the micro-level of households to the macro-perspective of national economies. The global importance of water, sanitation and hygiene for development, poverty reduction and health is reflected in the United Nations Millennium Declaration, in particular its eight Millennium Development Goals, in the reports of the United Nations Commission on Sustainable Development. - (WHO, 2010).³

The focus on universal access to clean water, sanitation and hygiene (WASH) is in line with the targets of Sustainable Development Goal (6). The SDG targets the aim for universal access to drinking water, sanitation and hygiene and call for enhanced monitoring to ensure that no one is left behind. It considers the implications of target 6.1, “**by 2030, achieve universal and equitable access to safe and affordable drinking water for all,**” and outlines plans for enhanced global monitoring of drinking water during the SDG era.⁴

Approximately 3.1% of deaths (1.7 million) and 3.7% of DALYs (54.2 million) worldwide are attributable to unsafe water, poor sanitation and poor personal hygiene (WASH related diseases like diarrhea, dysentery and typhoid). In developing countries in South East Asia 4-8% of all disease burden is attributable to these factors.⁵

Health risks associated with water borne diseases are important issues to be taken into consideration. From the findings cited above the investigator observed that waterborne diseases particularly Diarrhea & Typhoid are common in rural as well as urban areas at Kashmir and school children are the major victims. These diseases can be prevented by following healthy practices. So the investigator felt the need of imparting health education on the selected waterborne diseases to the school children so that these diseases can be prevented.

Objectives of the study:

1. To assess the pre-test knowledge score regarding selected water borne diseases among secondary school students.
2. To assess the post-test knowledge score regarding selected water borne diseases among secondary school students.
3. To evaluate the impact of structured teaching programme on knowledge regarding selected water borne diseases among secondary school students by comparing the pre-test and post-test knowledge scores.
4. To determine the association of pre-test knowledge score regarding selected water borne diseases among secondary school students with their selected demographic variables (gender, education of parents, total monthly family income, residence, source of drinking water).

Hypothesis:

- **H₁:** There is significant increase in post-test knowledge score as compared to the pre-test knowledge score regarding selected water borne diseases among secondary school students at $p \leq 0.05$ level of significance.
- **H₂:** There is significant association of pre-test knowledge scores regarding selected water borne diseases among secondary school students with their selected demographic variables (gender, education of parents, total monthly family income, residence, source of drinking water) at $p \leq 0.05$ level of significance.

Variables:

Independent Variable: Structured teaching programme regarding selected Water borne diseases.

Dependent variable: Knowledge score of students regarding selected Water borne diseases.

Demographic variables: Gender, Education of parents, Total monthly family income, Residence and Source of drinking water.

Conceptual framework:

The conceptual framework for the present study is developed from King's theory of goal attainment (Imogene M King – 1971)⁶. The model comprises of four primary components that include: Perception, Judgment, Goal Attainment and Feedback.

Review of Literature:

Mankar VK, Kurian B (2018)⁷ conducted a descriptive study with survey approach in Wardha, Maharashtra among 100 school going children (9-16 years) selected by non-probability convenient sampling technique. The aim of the study was to assess the knowledge regarding water borne diseases among school going children in selected schools. The findings of the study revealed that 16% were from age 9-10 years, 5% from age 11-12 years, 50% from age 13-

14 years, and 29% 15-16 years. 55% were Male and 45 % were Female. 58% Hindu, 24% Buddhist, 10% Muslim and 8% any other religion. 33% were from nuclear family, 58% from joint family, 5% from extended family and 4% from others. 73% from rural area and 27% from urban area. 40% of the study subjects had monthly income >Rs. 20,001; 30% had Rs. 5,000-10,000; 20% hadRs. 15,001-20,000 and 10% had Rs. 10,001-15,000. 1% of the students had poor knowledge, 28% of the students had average knowledge, 49% of the students had good knowledge, 19% had very good knowledge 3% had excellent knowledge. The minimum score was 4 and maximum score was 23, mean score 12.78 ± 0.387 and mean percentage of knowledge 12.78. No association was found between age of children, gender, type of family, monthly income, residential area, number of children in the family with the knowledge level of students. The study highlighted the need of a health education programme to increase the knowledge of students regarding water borne diseases.

Sameeksha (2018)⁸conducted a descriptive study in St. Xavier school, Khera, Pilkhuwa, Dist. Hapur, Uttar Pradesh among 60 school students (10-15 years) chosen by stratified random sampling technique. The aim of the study was to assess the knowledge regarding water borne diseases and their prevention. The findings of the study revealed that majority of the sample 33.33% were in the age group of 10-11 years, 56.67% of students were Male. 88.33% were Hindus, 51.67% of students belonged to Joint family. 46.66% of students have more than 5 family members, 36.67% of student's fathers had graduate level education, 37.47% of student's mothers were educated up to secondary level, 56.67% of student's fathers were self-employed and 58.33% of student's mothers were Unemployed. 36.67% of students used water purifier at home and 33.23% of students had television as communication facilities at home. 81.67% of students didn't had previous history of diarrhea among family members and 45% of students drank water directly from the tap. Chi square and ANOVA was used to find out the association between demographic variables and there was a significant association between Gender and communication facilities at home whereas no association was found between age, type of family, number of family members, class, educational status of father, educational status of mother, occupation of father, occupation of mother and source of drinking water with the knowledge level of students. The study concluded that only 23.33% had adequate knowledge and 76.67% had moderate knowledge regarding waterborne diseases and their prevention.

Sarika TK, Antony D, Anila KP, Sreejesh KP (2018)⁹conducted a Quasi-Experimental study in Kochi, Kerala among 100 upper primary school children. Students were selected from two schools with 50 subjects each from experimental and control group by convenient sampling technique with pre-test post-test control group design. The aim of the study was to find effectiveness of a structured teaching programme on knowledge regarding food and water borne diseases and its prevention. The findings of the study revealed that the mean post-test knowledge of 23.96 ± 3.77 of the children in the experimental group was significantly higher than pre-test knowledge score of 13.96 ± 4.83 . Similarly the mean post-test knowledge of 23.96 ± 3.77 of the children in the experimental group was significantly higher than the mean post-test score of 11.66 ± 4.89 of control group. Significant association was found between knowledge level and sex of the school children. While as no association was found between age, waste disposal, source of drinking water, type of drinking water and drainage with the knowledge level of students. The structured teaching programme regarding food and water borne diseases and its prevention was found effective in improving the level of knowledge of school children. The study depicted the importance of implementing structured teaching programme for school children on various topics as it would help to improve knowledge and follow healthy practices through which the children can build up a healthy generation.

Vinish V, Prasad V (2016)¹⁰conducted a Quasi-Experimental study in Sri Venkatramana Hr. Primary School, Kulai, Mangalore among 60 school children chosen by stratified random sampling technique with one group pre-test post-test design. The aim of the study was to find the effectiveness of planned teaching programme on prevention of water borne diseases. The findings of the study revealed that majority 60% of participants were girls and 55% were at the age of 12 years. 93.3% of the participants belonged to Hindu religion. 46.7% of the participant's mothers were daily wage earners and 33.3% fathers did a private job. Among participant's parents, 40% of the mothers and 66.7% of the father's had 5-10th standard education. 68.3% were from nuclear families and 63.3% depended on well as source of water. 86.7% were using own latrines. The findings of the study showed that prior to the administration of intervention most 37 (61.66%) of the subjects had poor knowledge, 17(28.34%) had average knowledge, 6 (10%) had good knowledge and none had excellent knowledge whereas after the intervention most 40 (66.33%) of the subjects had excellent knowledge, 16 (26.66%) had good knowledge, 4 (6.66%) had average knowledge and none had poor knowledge. The post-test mean knowledge score (27.9 ± 2.53) is greater than pre-test mean knowledge score (18.72 ± 3.74) which indicate the effectiveness of the intervention. The study concluded that planned teaching programme had a major role in developing knowledge of children on prevention of water borne diseases.

World Health Organization (2008)¹¹ conducted a project study on the global challenge of water quality and health. Unsafe water, together with inadequate sanitation and hygiene, is the overwhelming contributor to the 4 billion illnesses and 1.8 million deaths caused by diarrhea every year. 90% of this toll is borne by children under five. Every diarrheal episode reduces calorie and nutrient uptake and sets back a child’s growth and development. WHO estimates that 94% of diarrheal cases are preventable through modification to the environment, including thorough intervention to increase the availability of clean water.

Material & Methods:

In the present study, quantitative research approach with pre-experimental one group pre-test and post-test research design was used. The research setting was Muslim Educational Institute (MEI) Pampore Kashmir. Simple random sampling technique was used to select sample of 100 secondary school students of the age group of 14-16 years of Muslim Educational Institute (MEI) Pampore Kashmir. Demographic profile and structured knowledge questionnaire was used to assess the level of knowledge regarding selected water borne diseases among secondary school students. Demographic profile included items like gender, education of parents, total monthly family income, residence and source of drinking water. Structure questionnaire was prepared to assess the knowledge of secondary school students regarding selected water borne diseases. The review of literature, expert’s opinions and investigator’s own experience provided the basis for construction of the tool.

Inclusion Criteria: Secondary school students who are: a) Studying in Muslim Educational Institute (MEI) Pampore Kashmir. b) Between the age of 14-16 years. c) Students of 9th and 10th class. d) Willing to participate in the study. e) Available at the time of data collection. f) Able to understand and write English.

Exclusion Criteria: Secondary school students who are: a) Studying in schools other than Muslim Educational Institute (MEI) Pampore Kashmir. b) Not in the age group of 14-16 years. c) Students other than 9th and 10th class. d) Not willing to participate in the study. e) Not available at the time of data collection. f) Not able to understand and write English.

Ethical consideration:

Data collection was done in April-May 2019. Permission was taken from Institute Ethical Committee (IEC) of SKIMS Soura Srinagar for ethical clearance and permission. Permission was also accorded from the concerned authority of the school to conduct the study on secondary school students. The purpose of the study was informed and explained to the students of the school and permission was obtained by taking informed consent from them, prior to their inclusion as sample in the study. Privacy, confidentiality and anonymity was assured and maintained throughout the study.

Results:

Table 1: Frequency & percentage distribution of study subjects according to their demographic details of sample (N=100)

Demographic Variable	Category	Frequency (f)	Percentage (%)
Gender	Male	55	55%
	Female	45	45%
Education of Father	Illiterate	12	12%
	High school	24	24%
	Higher secondary	28	28%
	Graduate and above	36	36%
Education of Mother	Illiterate	26	26%

	High school	35	35%
	Higher secondary	17	17%
	Graduate and above	22	22%
Total monthly family income	Rs 5,000-10,000	34	34%
	Rs 10,000-15,000	16	16%
	Rs 15,000-20,000	12	12%
	Rs 20,000 and above	38	38%
Residence	Rural	64	64%
	Urban	36	36%
Source of drinking water	Tap water	66	66%
	Spring water	8	8%
	Tube well	15	15%
	River	11	11%

Table 2: Comparison between pre-test and post-test knowledge score of study subjects regarding selected water borne diseases. (N=100)

Knowledge Level	Knowledge Score	Pre-test		Post-test	
		(f)	%	(f)	%
Poor	≤ 24	77	77%	0	0%
Average	25-36	17	17%	1	1%
Good	37-48	6	6%	15	15%
Excellent	≥ 49	0	0%	84	84%

Maximum Score=60 Minimum Score=0

Table 3: Comparison between pre-test & post-test mean knowledge score and Standard Deviation of study subjects regarding selected water borne diseases. (N=100)

Knowledge Assessment	Mean±Standard Deviation	Mean %	Mean Difference	Paired 't' test	p-value
Pre-test	20.59±6.56	34.31	30.23	47.01	<0.001*
Post-test	50.82±3.19	84.7			

* Statistically Significant

Table 3: Area-wise comparison between Pre-test & Post-test mean knowledge score & Standard Deviation of study subjects regarding selected water borne diseases. (N=100)

Area of knowledge	Knowledge Score	Mean±SD	Mean difference	p-value
Concept of water borne diseases	Pre-test	4.02±1.52	3.42	<0.001*
	Post-test	7.44±0.63		
Typhoid and its prevention	Pre-test	5.91±2.42	10.68	<0.001*
	Post-test	16.59±1.43		
Diarrhea and its prevention	Pre-test	10.66±4.30	16.13	<0.001*
	Post-test	26.79±2.17		

*Significant

Table 4: Association of Pre-test knowledge scores of study subjects with their selected Demographic Variables. (N=100)

Variable	Category	Level of Knowledge			Chi-square	p-value	df	Result
		Poor	Average	Good				
Gender	Male	54	1	0	31.026	<0.001*	2	S*
	Female	23	16	6				
Education of father	Illiterate	11	1	0	9.356	0.149	6	NS
	High school	16	8	0				
	Higher secondary	22	3	3				
	Graduate and above	28	5	3				
Education of mother	Illiterate	20	6	0	7.985	0.235	6	NS
	High school	26	4	5				
	Higher secondary	14	3	0				
	Graduate and above	17	4	1				
Total monthly family income	Rs 5,000-10,000	23	8	3	3.654	0.759	6	NS
	Rs 10,000-15,000	14	2	0				
	Rs 15,000-20,000	9	2	1				
	Rs 20,000 and above	1	5	2				
Residence	Rural	49	11	4	0.027	0.987	2	NS
	Urban	28	6	2				
Source of drinking water	Tap water	51	13	2	6.147	0.391	6	NS
	Spring water	5	2	1				
	Tube well	11	2	2				
	River	10	0	1				

NS- Non-Significant (p > 0.05)

* S- Significant (p≤0.05)

Discussion:

The data was analysed and interpreted to identify the pre-test and post-test knowledge of secondary school students regarding selected water borne diseases and to determine the association of knowledge of secondary school students regarding selected water borne diseases with the selected demographic variables.

Demographic variables like gender, education of parents, total monthly family income, residence, source of drinking water are given in the Table 1. Table 2 outlines the knowledge score of frequency and percentage of study group.

Out of 100 study subjects:

- Most of the study subjects 55 (55%) were males and 45 (45%) were females.
- Most of fathers of the study subjects 36 (36%) were graduate and above, 28 (28%) were higher secondary passouts, 24 (24%) were high school passouts and only 12 (12%) were illiterate. And mothers of most of the study subjects 35 (35%) were high school passouts, 26 (26%) were illiterate, 22 (22%) were graduates and above and only 17 (17%) were higher secondary passouts.
- Most of the study subjects 38 (38%) had total monthly family income Rs. 20,000 rupees and above, 34 (34%) had total monthly family income Rs. 5,000-10,000, 16 (16%) had total monthly family income Rs. 10,000-15,000 and only 15 (15%) of study subjects had total monthly family income Rs. 15,000-20,000.
- Most of the study subjects 64 (64%) were from rural area and only 36 (36%) were from urban area.
- Most of the study subjects 66 (66%) had tap water as their source of drinking water, 15 (15%) had tube well as their source of drinking water, 11 (11%) had River as their source of drinking water and 8 (8%) had spring water as their source of drinking water.
- The findings of the present study showed that in Pre-test, majority of the study subjects 77 (77%) had poor level of knowledge, 17 (17%) had average level of knowledge, 6 (6%) had good level of knowledge and none had excellent level of knowledge regarding selected water borne diseases before the implementation of structured teaching programme.

These findings are consistent with the results of a quasi-experimental study conducted by Vinish V, Prasad V (2016) in Sri Venkatramana Hr. Primary School, Kulai, Mangalore among 60 school children chosen by stratified random sampling technique with one group pre-test post-test design. The aim of the study was to find the effectiveness of planned teaching programme on prevention of water borne diseases. The findings of the study showed that prior to the administration of intervention most 37 (61.66%) of the study subjects had poor knowledge, 17 (28.34%) of the study subjects had average knowledge, 6 (10%) of the study subjects had good knowledge and none (0%) had excellent knowledge regarding prevention of water borne diseases.¹⁰

The findings are also supported by a pre-experimental study conducted by Mankar K (2011) in Tirupur, Tamil Nadu among 50 school children (12-16 years) studying at secondary school. The aim of the study was to assess the effectiveness of teaching programme on knowledge, attitude and practice regarding prevention of water borne diseases. The pre-test results showed that 78% of children had poor knowledge and 22% had average knowledge regarding prevention of waterborne diseases.¹²

- The findings of the present study showed that in Post-test, majority of the study subjects 84 (84%) had excellent level of knowledge, 15 (15%) had good level of knowledge, 1(1%) had average level of knowledge and none had poor level of knowledge regarding selected water borne diseases after implementation structured teaching programme.

These findings are consistent with the results of a quasi-experimental study conducted by Vinish V, Prasad V (2016) in Sri Venkatramana Hr. Primary School, Kulai, Mangalore among 60 school children chosen by stratified random sampling technique with one group pre-test post-test design. The aim of the study was to find the effectiveness of planned teaching programme on prevention of water borne diseases. The study findings showed that there was a significant improvement in knowledge after administration of intervention. The post-test score revealed that, most 40 (66.33%) of the study subjects had excellent knowledge, 16 (26.66%) of the study subjects had good knowledge, 4 (6.66%) of the study subjects had average knowledge and none (0%) of the study subjects had poor knowledge regarding prevention of water borne diseases.¹⁰

The findings are also supported by a pre-experimental study conducted by Mankar K (2011) in Tirupur, Tamil Nadu among 50 school children (12-16 years) studying at secondary school. The aim of the study was to assess the effectiveness of teaching programme on knowledge, attitude and practice regarding prevention of water borne diseases. The post-test results showed that 56% of the subjects had attained excellent knowledge, 32% had good knowledge, 12% had average knowledge and none had poor knowledge regarding prevention of water borne diseases.¹²

- In the present study while comparing the knowledge scores of study subjects regarding selected water borne diseases, the results revealed that, the mean Post-knowledge score obtained by the study subjects was improved to 50.82 ± 3.19 from the mean Pre-test knowledge score of 20.59 ± 6.56 with a mean difference of 30.23 ($p < 0.001$), which indicates that there was significant difference between Pre-test and Post-test mean knowledge scores, which shows the effectiveness of intervention.

These findings are consistent with the results of a quasi-experimental study conducted by Sarika TK, Antony D, Anila KP, Sreejesh KP (2018) in Kochi, Kerala among 100 upper primary school children. Students were selected from two schools with 50 subjects each from experimental and control group by convenient sampling technique with pre-test post-test control group design. The aim of the study was to find effectiveness of a structured teaching programme on knowledge regarding food and water borne diseases and its prevention. The findings showed that the mean post-test knowledge of 23.96 ± 3.77 of the children in the experimental group was significantly higher than pre-test knowledge score of 13.96 ± 4.83 . Similarly the mean post-test knowledge of 23.96 ± 3.77 of the children in the experimental group was significantly higher than the mean post-test score of 11.66 ± 4.89 of control group at $p < 0.05$ which indicate the effectiveness of the intervention. The study depicted the importance of implementing structured teaching programme for school children on various topics as it would help to improve knowledge and follow healthy practices through which the children can build up a healthy generation.⁹

The findings are also supported by a quasi-experimental study conducted by Vinish V, Prasad V (2016) in Sri Venkatramana Hr. Primary School, Kulai, Mangalore among 60 school children chosen by stratified random sampling technique with one group pre-test post-test design. The aim of the study was to find the effectiveness of planned teaching programme on prevention of water borne diseases. The study revealed that the post-test mean knowledge score (27.9 ± 2.53) is greater than the pre-test mean knowledge scores (18.72 ± 3.74). The difference between mean scores is 9.91, and the calculated t-value is 14.20 at $p < 0.05$ which indicate the effectiveness of the intervention. The study concluded that planned teaching programme was found to be effective in increasing the knowledge of children regarding prevention of water borne diseases.¹⁰

- A significant association was found between Gender ($p \leq 0.001$) of study subjects with their Pre-test knowledge scores; While as no association was found between Education of father and mother ($p = 0.149, 0.235$), Total monthly family income ($p = 0.759$), Residence ($p = 0.987$) and Source of drinking water ($p = 0.391$) with their pre-test knowledge scores ($p > 0.05$).

These findings are consistent with the results of a descriptive study conducted by Sameeksha (2018) in St. Xavier school, Khera, Pilkhuwa, Dist. Hapur, Uttar Pradesh among 60 school students (10-15 years) chosen by stratified random sampling technique. The aim of the study was to assess the knowledge regarding water borne diseases and their prevention. Chi square and ANOVA was used to find out the association between demographic variables and there was a significant association between Gender ($\chi^2 = 19.33$) and communication facilities at home ($\chi^2 = 18.6$) whereas no association was found between Age ($\chi^2 = 3.22$), Religion ($\chi^2 = 0.26$), Educational status of father ($p = 0.07$), Educational status of mother ($p = 0.73$), Type of family ($\chi^2 = 0.87$), Number of family members ($\chi^2 = 10.5$), Class ($p = 0.13$), Source of drinking water ($p = 0.97$), Occupation of father ($p = 0.86$), and Occupation of mother ($p = 0.89$) with the knowledge level of students at 0.05 level of significance.⁸

The findings are also supported by a descriptive study conducted by Mankar VK, Kurian B (2018) in Tirupur, Tamil Nadu among 50 school children (12-16 years) studying at secondary school. The aim of the study was to assess the effectiveness of teaching programme on knowledge, attitude and practice regarding prevention of water borne diseases. The results revealed that no association was found between Age of children ($p = 0.860$),

Gender ($p=0.809$), Type of family ($p=0.053$), Monthly Income ($p=0.185$), Residential area ($p=0.180$), Number of children in the family ($p=0.321$) with the knowledge level of students at 0.05 level of significance.⁷

These findings are consistent with the results of a quasi-experimental study conducted by Sarika TK, Antony D, Anila KP, Sreejesh KP (2018) in Kochi, Kerala among 100 upper primary school children. Students were selected from two schools with 50 subjects each from experimental and control group by convenient sampling technique with pre-test post-test control group design. The aim of the study was to find effectiveness of a structured teaching programme on knowledge regarding food and water borne diseases and its prevention. The results revealed that there was a significant association between knowledge score and Sex ($p=0.001$) of the school children. While as no association was found between Age ($p=0.149$), Waste disposal ($p=0.186$), Source of drinking water ($p=0.167$), type of drinking water ($p=0.121$) and Drainage ($p=0.144$) with the pre-test knowledge level of students at 0.05 level of significance.⁹

Implications of the study: The findings of the study have implications for nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice: Present study would help to understand necessity of prevention of water borne diseases. Nurses can conduct teaching sessions on water borne diseases during their visits to schools. The nurse plays an important role in disease/infection prevention.

Nursing Education: Nursing educator has to pay more attention on training of nursing students to assess the level of knowledge regarding water borne diseases so they can impart appropriate knowledge to secondary school children regarding water borne diseases. The nursing curriculum should have emphasis on health information to community using different teaching methods; they should be educated on water borne diseases and their prevention.

Nursing Administration: Nurse Administrators can educate nursing personnel and involve them in health education measures for secondary school children regarding water borne diseases. Wider professional interaction between the nurses and the public will help improve professional standards. Nursing students should be educated in water borne diseases so that they can give education to secondary school children to help them prevent from various water borne diseases.

Nursing Research: This study provides baseline data about knowledge of secondary school students regarding water borne diseases. The nurses will come to know about the ignorance of secondary school students and their level of knowledge regarding water borne diseases. Such studies will improve the quality of nursing care. The study helps to develop insight in to the development of teaching module and for improving the knowledge and nursing management of water borne diseases.

Recommendations: Keeping in view the findings of the study, further studies can be conducted on a large sample, using different demographic characteristics, using a control group, between urban and rural areas and using different teaching strategies.

Conclusion: The main aim of the study was to assess the impact of structured teaching programme on knowledge regarding selected water borne diseases among secondary school students of Muslim Educational Institute (MEI) Pampore Kashmir. The findings of the study concluded that secondary school students had poor knowledge regarding selected water borne diseases. The mean pre-test knowledge score was 20.59 while as mean post-test knowledge score was 50.82 which indicate the impact of structured teaching programme. Thus, it was inferred that structured teaching programme was effective in enhancing knowledge of secondary students regarding selected water borne diseases.

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