International Journal of Research In Paediatric Nursing

E-ISSN: 2664-1305
P-ISSN: 2664-1291
www.paediatricnursing.net
IJRPN 2023; 5(2): 114-117
Received: 11-07-2023
Accepted: 19-08-2023

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A study to evaluate the effectiveness of multimodal educational program on knowledge of school children regarding environmental sanitation at selected areas of Belagavi district

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DOI: https://doi.org/10.33545/26641291.2023.v5.i2b.143

Abstract
Background of the study: A study, titled "A study to evaluate the effectiveness of multimodal educational program on knowledge of school children regarding environmental sanitation at selected areas of Belagavi district". A school is an establishment designed to provide learning spaces and a learning environment for the student's teacher under the leadership of the teachers. A school is a place that not only provides education to children but also a learning environment. After stepping out of the house it plays a vital role in the development of a child. It includes cognitive as well as the creative development of the child. The work Hygiene commonly refers to the combination of practices or behaviours related associated with the preservation of health and living in healthy manner. The work hygiene usually focuses on personal hygiene and it includes the cleanliness of the body, hair, feed, fingers, cloths what we use and menstrual hygiene. Enhancement in people's knowledge, skill and practices related to hygiene can modify a person's behaviour towards healthy practices those focus on promotion of hygiene. This can be achieved by carrying out hygienic education and aim of this should be transfer of knowledge, understanding of hygiene and associated health risks in order to help people change their behaviour to use better hygienic practices.
Approach: The research approach adopted for this study is an evaluative approach.
Design: The research design selected for this present study was pre-experimental.
Setting: The study was conducted at BIMS Teaching Hospital, Belagavi, Karnataka.
Participants: 50 school children were selected by simple random sampling technique, as a probability sampling method.
Pre-assessment: The tool was developed by preparation of knowledge questionnaires and content validity of the tool was established by taking corrections from experts. Later multimodal educational program was administered on the same day of pre assessment.
Post assessment: Knowledge questionnaire was administered after 7 days of administration of multimodal educational program to assess its effectiveness.
Results: The results of major findings indicated that, Percentage distribution of school children in pre-test reveals that out of 50 school children 80% had poor knowledge followed by 20% school children with average knowledge. No one have excellent, good and very poor knowledge regarding environmental sanitation.
In post-test knowledge However after MMEP (post-test) 52% school children had excellent knowledge followed by 48% school children with good knowledge and no one had average, poor and very poor knowledge regarding environmental sanitation
As the calculated t value (24.9) was much higher than table 't' value (2.02) the hypothesis: H_1 - There is a significant difference between pretest and posttest scores of school children regarding environmental sanitation was accepted. Findings revealing the presence of significant difference between pre-test and post-test knowledge scores, hence the MMEP was proved to be effective
Interpretation & Conclusion: The study concluded that MMEP on environmental sanitation was an effective method for providing moderate to adequate knowledge for school children to enhance their knowledge.
Implications for clinical practices: On the basis of findings, it is recommended that a similar study may be replicated issuing a large number of respondents.

Keywords: Assess, Knowledge, effectiveness, environmental sanitation, MMEP

Introduction
A school is an establishment designed to provide learning spaces and a learning environment for the student's teacher under the leadership of the teachers.

A school is a place that not only provides education to children but also a learning environment. After stepping out of the house it plays a vital role in the development of a child. It includes cognitive as well as the creative development of the child [1].

The work Hygiene commonly refers to the combination of practices or behaviours related associated with the preservation of health and living in healthy manner. The work hygiene usually focuses on personal hygiene and it includes the cleanliness of the body, hair, feed, fingers, cloths what we use and menstrual hygiene.

Enhancement in people's knowledge, skill and practices related to hygiene can modify a person's behaviour towards healthy practices those focus on promotion of hygiene. This can be achieved by carrying out hygienic education and aim of this should be transfer of knowledge, understanding of hygiene and associated health risks in order to help people change their behaviour to use better hygienic practices [2].

According to WHO Environmental hygiene addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health.

Environmental hygiene encompasses hygiene, sanitation and many other aspects of the environment such as global warming, climate change, radiation, gene technology, flooding and natural disasters. It also involves studying the environmental factors that affect health.

Importance of environmental hygiene

- We need safe, healthy and supportive environments for good health. The environment in which we live is a major determinant of our health and wellbeing.
- A clean environment helps prevent the spread of disease and may reduce depression.
  Ex - safe and adequate water supplies, sanitation, drainage and solid waste disposal all benefit health by removing disease vectors from human contact.
- Dirty environments, by contrast, encourage the spread of disease and may adversely influence the mental and emotional well-being of individuals.
  Ex - A drinking water, which can be contaminated by human faecal matter that contains these infectious agents. When this water is consumed, we are likely to get diarrhoeal diseases [2].

Many other studies reported that, inadequate knowledge and poor practices regarding environmental hygiene and sanitation by general public and children. It may leads to environmental pollution and can result is health problems of adults and children. Hence, the researcher is interested to study the Impact of MMEP on knowledge regarding environmental hygiene among school children [3].

Objectives

1. To assess the knowledge of school children regarding environmental sanitation in terms of pre-test and post-test knowledge and practice scores.
2. To evaluate the effectiveness of Multimodal educational program on knowledge of school children regarding environmental sanitation by comparing pre-test and post-test knowledge scores.
3. To find the association between the post-test knowledge scores of school children regarding environmental sanitation with selected demographic variables.

Hypothesis

All hypotheses will be tested at $p< 0.05$ level of significance

H_1: The mean post-test knowledge scores of school children regarding environmental sanitation, who have undergone the multimodal educational program, will be significantly higher than their mean pre-test knowledge scores at 0.05 level of significance.

H2: There will be a significant association between post-test knowledge scores regarding environmental sanitation with their selected demographic variables at 0.05 level of significance.

Methodology

Research Approach: Evaluative approach
Research Design: Pre-experimental design
Sampling technique: Probability; Simple Random Sampling Technique.
Sample Size: 50.
Setting of study: BIMS Teaching Hospital, Belagavi.

The collected information was organized and presented in 4 sections as follows

- **Section I:** Description of socio-demographic characteristics of school children.
- **Section II:** Assessment of knowledge of school children regarding environmental sanitation
- **Section III:** Assessment of the effectiveness of the MMEP on knowledge regarding environmental sanitation.
- **Section VI:** Association between the knowledge scores of school children regarding environmental sanitation with their selected socio demographic variables.

Procedure of data collection

Data was collected after obtaining administrative permission from BIMS hospital, Belagavi. The investigator personally explained the participants the need and assured them of the confidentiality of their responses. Data was collected through knowledge questionnaires. The test was conducted based on their availability and convenience. Soon after the test, the PTP was administered.

Results

Section I: The findings related to socio-demographic variables of participants

Part I: Frequency and percentage distribution of socio-demographic variables of participants N=50.

Percentage wise distribution of school children according to their age groups reveals that out of 50 school children , 42.5% school children belong age group of 6-8 years, followed by 25 %in the age group of 9-10 years, 15%in the age group of 11-13 years, 15% in the age group of 14-15 years (Fig: 1]. It shows that majority of the school children under the study were coming under the age group of 6-8 years.

Percentage wise distribution of school children according to their gender reveals that out of 50 school children , 62.5% were males and 37.5% were females (Fig: 2). It shows that majority of school children under the study were boys.

Percentage wise distribution of school children according to

their professional qualification shows that out of 50 school children, 65% school children were completed SSLC. 22.5% school children were completed PUC and 12.5% school children were Degree and more (Fig: 3). It shows that majority of school children under the study are completed SSLC.

Percentage wise distribution of school children according to family monthly income shows that out of 50 school children, 35% school children have less than 5000Rs monthly income, 45% school children have 5001-10000 Rs, 15% school children have 10001-15000 RS and 5% school children have more than 15001 Rs. (Fig: 5.4).It shows that majority of the school children 45% school children have income between 5001-10000 Rs.

Percentage wise distribution of school children according to type of family shows that out of 50 school children, 80% school children belongs to nuclear family, 20% school children belongs to joint family. (Fig: 5). It shows that majority of the school children 80% school children belongs to nuclear family

Percentage wise distribution of school children according to type of family shows that out of 50 school children, 94% school children belongs to rural area, 6% school children belongs to urban. (Fig: 6). It shows that majority of the school children 94% school children belongs to rural area.

Percentage wise distribution of school children according to previous knowledge about environmental sanitation shows that out of 50 school children, 15% school children have ot knowledge from media, 25% school children have knowledge from friends, 50% school children have knowledge from books, 10% school children have knowledge from other source. (Fig: 5.7).It shows that majority of the school children 50% school children have knowledge from books,

Section II: Assessment of knowledge of school children regarding environmental sanitation. N=50

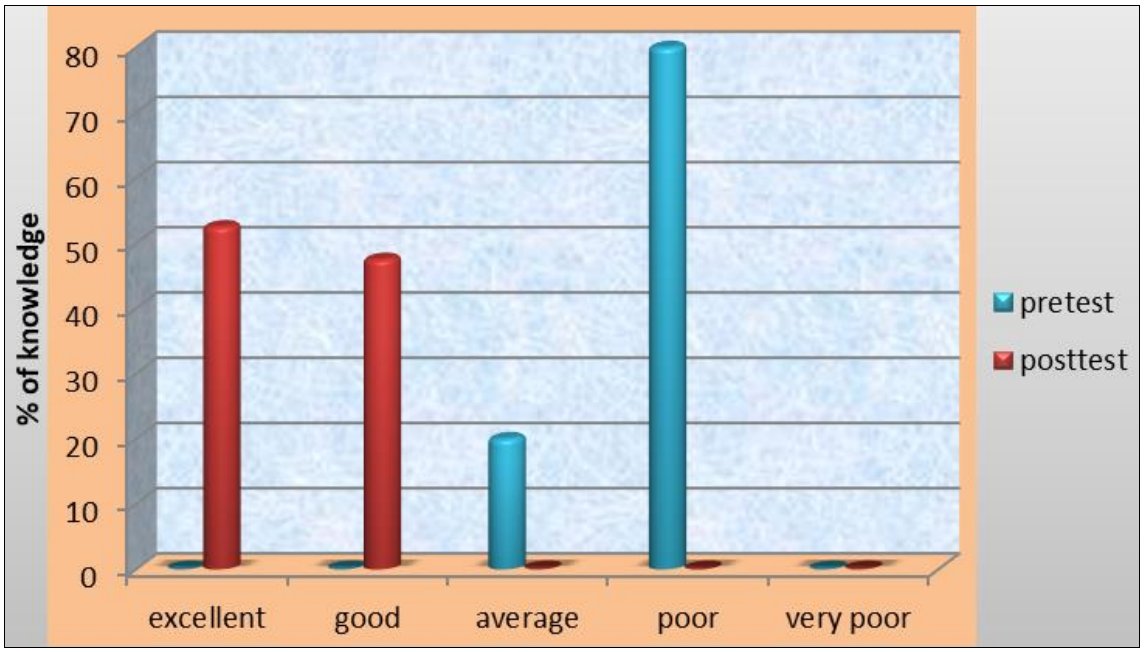

Fig 1: Level of knowledge

Knowledge wise comparison of school children in pre-test and post-test reveals the following results. In pre-test, out of 50 school children 80% had poor knowledge followed by 20% subjects with average knowledge & 80% poor knowledge. No one had excellent, good and very poor knowledge regarding environmental sanitation. However after MMEP (post-test) 52% school children had excellent knowledge followed by 48% school children with good knowledge and no one had average, poor and very poor knowledge regarding environmental sanitation.

It shows that MMEP is an effective method in improving knowledge of school children regarding environmental sanitation.

Section III: Assessment of the effectiveness of MMEP on knowledge regarding environmental sanitation.

Table 1: Show the test, mean, std. error, mean diff., SD diff., paired t-value and table value

Test	Mean	Std. Error	Mean Diff.	SD Diff	Paired t-value	Table value
Pre-test (xi)	7.62	0.43	12.02	2.69	24.9	$^{2}.0^{2}$
Post-test (x2)	19.65					

As the calculated t value (24.9) was much higher than table 't' value (2.02) the hypothesis:

H_1: There is a significant difference between pretest and posttest scores of school children regarding environmental sanitation was accepted. Findings revealing the presence of significant difference between pre-test and post-test knowledge scores, hence the planned teaching programme is proved to be effective (Table 1).

Section IV: Association between post-test knowledge scores of school children regarding environmental sanitation.

Table 2: Show the Socio demographic variables, DF, Chi-square value, table value, level of significance and significance

Sl. No	Socio demographic variables	DF	Chi-square value	Table value	Level of Significance	Significance
1.	Age	1	0.13	3.84	0.05	Not significant
2.	Gender	1	0.83	3.84	0.05	Not significant
3.	Parents Education	1	0.03	3.84	0.05	Not significant
4.	Income	1	0.11	3.84	0.05	Not significant
5.	Type of family	1	0.01	3.84	0.05	Not significant
6.	Type of residency	1	3.05	3.84	0.05	Not significant
7	Previous knowledge about environmental sanitation	1	2.55	3.84	0.05	Not significant

Chi square was calculated to find out association between post-test practice scores of diabetic patients with their selected sociodemographic variables by using 2 × 3 & 2 × 2 contingency table. There was no significant association was found between the post-test practice scores and their socio-demographic variables: So H_3, there is a significant association between the knowledge scores of school children regarding environmental sanitation with their selected socio demographic variables is rejected.

It reveals that no extraneous variable was affected the study and the study had internal consistency. The MMEP is the only measure which increased the knowledge of school children.

Conclusion

The conclusions drawn from the study are as follows:

Majority (42.5%) of the school children belong age group of 6-8 years.

- As per the findings of the study, majority 62.5% of school children were males and 37.5% were females.
- Majority (65%) of school children completed SSLC
- As per the findings of the study, majority of school children parents i.e. 45% have 5001-10000 monthly income
- Majority (80%) of school children have nuclear family
- The present study reveals that overall mean knowledge score obtained by the school children in pre-test was 7.62 with standard deviation 1.99 whereas the overall mean knowledge score obtained by the school children in the post-test was 19.65 with standard deviation 1.69.
- The improvement mean score for overall knowledge was 12.02 with the calculated 't' value 24.9. The calculated t value was much higher than table 't' value (2.02), thus it indicates that there is a significant difference between the pre-test and post-test knowledge scores. Therefore the MMEP is effective in increasing the knowledge level of school children.
- No significant association was found between the post-test knowledge scores and their socio-demographic variables.

Conflict of Interest

Not available

Financial Support

Not available

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How to Cite This Article

Parit P, Rajesh K. A study to evaluate the effectiveness of multimodal educational program on knowledge of school children regarding environmental sanitation at selected areas of Belagavi district. International Journal of Research in Paediatric Nursing 2023; 5(2): 114-117.