



A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING PREVENTION OF IODINE DEFICIENCY DISORDERS (IDDs) AMONG THE PRIMARY SCHOOL CHILDREN IN A PRIMARY SCHOOL AT AGARTALA.

Nursing

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ABSTRACT

Introduction: Iodine is an essential micronutrient crucial for normal physical and mental development. Iodine deficiency, a major public health concern globally, affects millions of children, leading to a range of health problems known as Iodine Deficiency Disorders (IDDs). These disorders include goitre, hypothyroidism, cretinism, and impaired cognitive function, resulting in significant social and economic burdens. This study aims to evaluate the effectiveness of a structured teaching program on the prevention of iodine deficiency disorders (IDDs) among primary school children. The objectives include assessing pre-test and post-test knowledge scores, comparing these scores to gauge the program's impact, and identifying associations between knowledge levels and selected socio-demographic variables. **Methodology:** A quantitative research approach was selected to assess the knowledge regarding the prevention of Iodine Deficiency Disorders (IDDs) among primary school children in a selected school in Agartala. The study employed a pre-experimental, one-group pre-test post-test design to measure the impact of a structured teaching programme on students' knowledge. The methodology involved administering a structured knowledge questionnaire before and after the intervention to evaluate changes in understanding. The study was conducted at Henry Derojio H.S. English Medium School with a sample of 80 primary school children selected through non-probability convenient sampling. The structured knowledge questionnaire, which consisted of two sections covering relevant areas, was used for data collection. **Results:** the knowledge score distribution among 80 primary school children regarding the prevention of Iodine Deficiency Disorders (IDDs): 40% had poor knowledge, 55% had average knowledge, and 5% had good knowledge. Table 3.1 and Figure 13 indicate a significant association between knowledge scores and age ($p = 0.006$). Table 3.2 and Figure 14 show a significant association with gender ($p = 0.013$). Table 3.3 and Figure 15 reveal no significant association with religion ($p = 0.060$). Tables 3.4 to 3.10 and corresponding figures demonstrate significant associations with educational qualification, source of information, type of family, and parental education, with p -values < 0.05 . Finally, Table 4.1 highlights a significant increase in post-test knowledge scores compared to pre-test scores ($p < 0.0001$). **Conclusion:** The Structured Teaching Programme (STP) significantly improved the knowledge of primary school children regarding the prevention of Iodine Deficiency Disorders (IDDs). The mean knowledge score increased from 5.70 to 13.14 post-intervention, demonstrating the effectiveness of STP in enhancing awareness and understanding among the children.

KEYWORDS

Effectiveness, Structured Teaching Programme (STP), knowledge, prevention, Iodine Deficiency Disorders (IDDs).

INTRODUCTION

Iodine deficiency disorders (IDDs) pose a significant health threat, especially among children, leading to cognitive impairments and developmental delays. India, a country with a large population, has been actively battling IDD through various programs, including iodization of salt. However, research suggests that knowledge regarding IDDs and their prevention remains inadequate, particularly among children. This lack of awareness can hinder effective prevention efforts and perpetuate the problem.

Tripura, a state in Northeast India, is geographically isolated and faces specific challenges in implementing public health programs effectively. Understanding the knowledge gaps and the effectiveness of educational interventions on IDDs among schoolchildren in Tripura is crucial for developing targeted interventions to combat the problem.

Globally, 2.2 billion people live in areas with iodine deficiency, including 200 million in India, where 54.4 million have goitre and 8.8 million have IDD-related handicaps. In India, 211 out of 245 districts are affected. Iodine deficiency impairs children's IQ and school performance, with severe deficiencies lowering IQ by up to 13.5 points. Prevention through daily iodized salt intake, ensuring at least 150 micrograms of iodine per person, is effective and inexpensive. Effective IDD control measures have reduced prevalence in developed countries, but it remains a major issue in Latin America, Africa, and Asia.

Objectives Of The Study:

1. To assess the Pre-test and posttest knowledge score regarding Prevention of Iodine Deficiency Disorders among the Primary School children.
2. To compare the Pre-test and Post-test knowledge score regarding Prevention of Iodine Deficiency Disorders among the Primary School children.
3. To find out the association between knowledge regarding prevention of Iodine Deficiency Disorders and the selected socio demographic variables.

Hypothesis:

H₁: There will be significant association between the knowledge of Primary School Children and selected socio-demographic variables.

Research Methodology

Research Approach

A quantitative research approach was used to assess the knowledge regarding the prevention of Iodine Deficiency Disorders (IDDs) among primary school children in a selected school in Agartala.

Research Design

A pre-experimental, one-group pre-test post-test design was adopted. This design measured the effect of the independent variable (Structured Teaching Programme on IDD prevention) on the dependent variable (knowledge of the primary school children).

Variables

- **Dependent Variable:** Knowledge of primary school children regarding the prevention of IDDs.
- **Independent Variable:** Structured Teaching Programme (STP) on IDD prevention.
- **Demographic Variables:** Age, gender, religion, educational qualification, parental education, information source, family type, salt type, and prior knowledge of IDDs.

Setting

The study was conducted at Henry Derojio H.S. English Medium School in Agartala, chosen for its geographical proximity, feasibility, and availability of participants.

Population

The target population consisted of 80 primary school children from the selected school in Agartala.

Sample and Sampling Technique

The sample consisted of 80 primary school children who met the inclusion criteria. Non-probability convenient sampling was used.

Inclusion and Exclusion Criteria

- **Inclusion Criteria:** Primary school children aged 8 to 10 years, studying at the selected school, and willing to participate.
- **Exclusion Criteria:** Children unwilling to participate, those not involved in the pre-test, and those unavailable during the study period.

Research Tool

A structured questionnaire was developed after an extensive literature review and consultations with experts. The tool was finalized in English and translated into Bengali.

Description of Tools

The questionnaire comprised two sections:

- **Section A:** Demographic data (10 items) including age, gender, religion, educational qualifications of the children and their parents, source of information, type of family, type of salt used, and prior knowledge of IODs.
- **Section B:** Knowledge assessment (15 items) covering: General information (3 items), Major disorders and clinical manifestations (4 items), Prevention and control (8 items)

Validity and Reliability

- **Content Validity:** Established through expert review (four nurse educators, one medical expert, and one statistician). Modifications were made based on their feedback.
- **Reliability:** Tested using the split-half method and Karl Pearson's coefficient correlation. The reliability was found to be significant ($r(1/2) = 0.75$) and further validated using the Spearman-Brown formula ($r = 0.85$).

Data Collection Procedure

Data were collected using the structured questionnaire before and after the administration of the Structured Teaching Programme (STP) on IDD prevention.

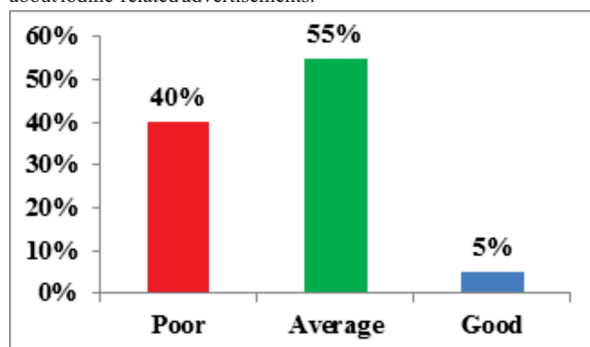
Ethical Permission

Ethical clearance was obtained from the Institutional Ethical Committee of People's College of Nursing and Research Centre. Written permission was secured from the school principal, and informed consent was obtained from participants. Privacy, anonymity, and data confidentiality were maintained, and ethical guidelines were followed throughout the study.

RESULTS

Demographic Key Findings Of The Study

The study revealed that the majority of the primary school children (41.3%) were 10 years old, followed by 9-year-olds (37.5%) and 8-year-olds (21.3%). In terms of gender, slightly more than half (51.3%) were female. The predominant religion among the children was Hinduism (71.3%). Educationally, most children were in classes 4 and 5 (37.5% each), with the remainder in class 3 (25%). Mass media was the main source of information about iodine deficiency disorders for 56.3% of the children. Joint families constituted the majority (45%), with the rest from nuclear (36.3%) and extended families (18.8%). Mothers of the children primarily had higher secondary education (25%), while fathers mostly had postgraduate degrees (23.8%). Most families (72.5%) used iodized salt, and 65% of children had heard about iodine-related advertisements.



Graph:1 Level Of Knowledge Score Of Primary School Children Regarding Prevention Of Iodine Deficiency Disorders.

Table 1: Difference Between Pre & Post Test Knowledge Score Regarding Prevention Of Iodine Deficiency Disorders.

Level of Knowledge	Mean	SD	Paired t test	P value
Pretest	5.70	1.91	24.60**	<0.0001
Posttest	13.14	1.64		

Table 1 shows a significant improvement in knowledge regarding the prevention of Iodine Deficiency Disorders among primary school children following a Structured Teaching Programme. The pre-test mean score was 5.70 (SD = 1.91), indicating low initial knowledge.

After the intervention, the post-test mean score increased to 13.14 (SD = 1.64). The t-value of 24.60 and a p-value of less than 0.0001 confirm that the observed difference is statistically significant. These results demonstrate the effectiveness of the Structured Teaching Programme in substantially enhancing the children's knowledge about Iodine Deficiency Disorders.

Table 2 Section Wise Differences Between Pre-test And Post-test Knowledge Score.

Sections		Mean	SD	T value
General Information	Pre	1.14	0.76	15.75**
	Post	2.74	0.52	
Major disorders & clinical manifestation	Pre	1.38	0.95	15.41**
	Post	3.51	0.71	
Prevention & Control	Pre	3.19	1.23	17.74**
	Post	6.89	1.23	

Table 2 presents the section-wise differences between pre-test and post-test knowledge scores among primary school children on the prevention of Iodine Deficiency Disorders. In the General Information section, the mean score increased from 1.14 (SD = 0.76) in the pre-test to 2.74 (SD = 0.52) in the post-test, with a t-value of 15.75. For Major Disorders and Clinical Manifestations, the mean score rose from 1.38 (SD = 0.95) to 3.51 (SD = 0.71), yielding a t-value of 15.41. In the Prevention and Control section, the pre-test mean score was 3.19 (SD = 1.23), which significantly improved to 6.89 (SD = 1.23) in the post-test, with a t-value of 17.74. These findings indicate substantial knowledge gains in all sections, demonstrating the effectiveness of the Structured Teaching Programme.

Regarding The Association Between Selected Demographic Variables And The Level Of Knowledge

The chi-square value was significant when compared to the table value at the 0.05 level of significance, indicating a significant relationship between knowledge scores and sociodemographic variables such as age, religion, educational qualification, source of information about Iodine Deficiency Disorders, type of family, educational qualification of mother, educational qualification of father, type of salt consumed, and whether they had ever heard about iodine-related advertisements. However, the chi-square value was not significant for the variable of religion, revealing no significant relationship between knowledge scores and religion.

CONCLUSION

The present study aimed to assess the effectiveness of a Structured Teaching Programme on the knowledge regarding the prevention of (IDD) among primary school children. The Data was collected from eighty children using a structured knowledge questionnaire before and after the STP. In knowledge levels. Before the STP, only 4 (5%) children had good knowledge, 44 (55%) had average knowledge, and 32 (40%) had poor knowledge, with a pre-test mean score of 5.70. After the STP, the post-test mean score rose to 13.14, showing a statistically significant increase (t-value = 24.60, $P < 0.0001$). The study concluded that the STP was effective in enhancing the children's knowledge about IDD prevention, emphasizing the crucial role of nurses in providing health education and promoting preventive measures among primary school children.

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