

# Effectiveness of Programmed Instruction on Knowledge Regarding Health Problems of Primary School Children and Its Management Among Primary School Teachers

Sunitha R<sup>1</sup>, Dr. Babu Dharmarajan<sup>2</sup>

<sup>1</sup>PhD Research Scholar, Faculty of Nursing, Sri Balaji Vidyapeeth University, Pondicherry

<sup>2</sup>Dean/Principal, Uttarakhal College of Nursing, Uttarakhal University, Dehradun, 248 007. Uttarakhand

Corresponding Author: Dr. Babu Dharmarajan

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## ABSTRACT

The present study was aimed to assess the effectiveness of programmed instruction on knowledge among primary school teachers about management health problems in primary school children. A quasi-experimental, one-group pre- and post-test research design was adopted to carry out the study. A self-administered knowledge questionnaire was used to collect the data among samples who were selected through purposive sampling technique. Results evidenced that there was a significant improvement in the overall posttest knowledge score while compared with overall pretest knowledge score. The calculated value was significantly higher than the table value, hence it is evident that the posttest knowledge of primary school teachers on management of common health problems were increased through the programmed instruction. Thus, increasing knowledge of primary school teachers regarding management of common preschool children health issues could provide an opportunity to protect the majority of young children.

**Key words:** Primary school children; school teachers; health problems; instruction material

## INTRODUCTION

Improving the health of a children would be a cost-effective way for the development of a Nation and also at Globe. Children comprises the strong fundamental for the healthy and mighty Nation<sup>1</sup>. The quality of

childhood life solely depends on the type of environment - school and unhealthy neighbourhood social surroundings could put them at stress and could increase the vulnerability to develop emotional disorders. As children were easily amenable to different stresses and strain, it was imperative on the part of parent and teachers to know the intricacies of a healthy psychosocial environment leading to behavioural patterns which are personally satisfying and socially acceptable<sup>2</sup>. In India, a survey carried out by UNICEF among school children revealed that about half of the ailments were related to poor sanitary conditions and lack of personal hygiene. Common childhood infections like childhood diarrhoea, respiratory illnesses and bacterial skin infections could be averted by simple hand washing with soap before eating and after using the toilet, that is important for grade-schoolers to practice good hygiene particularly hand washing because they are spending much time in close contact with each other in the classroom, sharing everything from desks and chairs to germs<sup>3</sup>. The leading cause of morbidity and mortality in children under 5 years old worldwide was diarrheal diseases, whereas, the burden of diarrheal diseases was disproportionately high among children in low- and middle-income countries.

Specifically young children were vulnerable to diarrheal disease and a high proportion of the deaths occur in the first 2 years of life. Worldwide, the majority of deaths related to diarrhea took place in Africa (half of deaths from diarrhea among young children) and South Asia and was the largest cause of death among children under five years old<sup>4</sup>. Among all illness, Acute Respiratory Infections (ARI) account for 30-60% of paediatric outpatient attendance and 20-30% of hospital admissions<sup>5</sup>. Rhinitis a disease of the upper airway though not viewed as a life threatening condition, it was also recognized to impose significant burden to the quality of life of sufferers and their caretakers and imposes an economic cost to society<sup>6</sup>.

A study was conducted in rural areas of Delhi to determine the prevalence of periodontal disease and dental caries among the 458 children of both sexes aged 5 to 14 years in primary schools of four different villages revealed dental caries were observed in 63.83% of study population, about 30.21% had decayed teeth, in all 80.4% of the students belongs low socio-economic group and the results evidenced that large population were remained ignorant about effects of poor oral health<sup>7</sup>.

A study carried out to estimate the prevalence of skin disease among school children aged 6-14 years in Chandigarh, India among 2,586 children showed that the most common conditions were skin infections (11.4%), pityriasis alba (8.4%), eczemas (5.2%), infestations (5%), pigmentation (2.6%), keratinization (1.3%), nevi (1.1%) and also found that malnutrition, over crowding, poor standards of hygiene, and low socio-economic status were important factors for prevalence<sup>8</sup>.

School plays a crucial and formative role in the spheres of cognitive, language, emotional, social and moral development of children. A growing recognition that schools have a significant role in promoting positive health. Teachers were powerful groups who were studied the nature of individual growth in their process of education and equipped them to be in a position to shape and

reshape behaviors that were warranted<sup>9</sup>. The school is an educational institution where groups of pupils pursue defined studies at defined levels; receive instructions from one or more teachers. The school health service is one of the aspects of community health nursing, it refers to providing need based comprehensive services to pupils to promote and protect their health, control diseases and maintain their health<sup>10</sup>.

## **MATERIALS AND METHODS**

A quasi-experimental, one-group pre- and post-test design was used to assess the effectiveness of programmed instruction on knowledge about common health problems of primary school children and its management among primary school teachers.

The sample size was calculated by a pilot study and reviews, keeping the estimated power 80 percent and 5% of significance. The sample size of the present study consisted of 40 primary school teachers working in the selected schools of Bangalore who were selected through purposive convenient sampling technique.

### **Description of the tool**

The investigator developed a study specific structured knowledge questionnaire on management of common health problems among primary school children developed. Based on the pre testing, suggestions from the experts few items were excluded; also, through item analysis, discriminative index and difficulty index, some of the items were modified. Thus, final draft of the tool consists of 35 items. In order to establish reliability of the tool, the Spearman Brown's Prophecy formula was used and reliability co-efficient of the tool was calculated by using raw score formula. The calculated 'r' value was 0.92 and the developed tool was found to be reliable.

The tool consists of two parts: Part A, Part B and Part C.

Part A: includes variables of age, educational qualification, marital status, total years of experience, number of

children and years of experience and previous exposure to formal training to manage minor health issues among primary school children and Part B deals with the knowledge items on dental conditions (8), respiratory conditions (6), GI conditions (7), worm infestations (4), skin conditions (5) and eye infections (4); whereas, Part C includes programmed instruction on management of common health problems of primary school children.

### Data collection procedure

After the self-introduction, explaining the purpose of the data collection and the subject's willingness to participate in the study was ascertained by the investigator. The subjects were assured the anonymity and confidentiality of the information

provided by them and written consent is obtained from the subjects.

Pretest Assessment: All pre-school teachers were given a questionnaire which was divided into demographic data, knowledge items on common health problems among primary school children, before the intervention. Each subject took 35-45 minutes to complete the knowledge questionnaire. Intervention: Programmed instruction on management of common health problems and its related management was distributed to the subjects on the same day and informed to study carefully and ready for posttest after one week. Posttest assessment: The post-test was done after one-week post-intervention with the same questionnaire used in the pretest.

### Findings and Discussion

Table 1: Frequency and Percentage distribution of demographic variables among primary school teachers N=40

Demographic Variables	F	%
Age in years		
21-25 years	23	58
25-30 years	9	23
30-35 years	4	10
> 35 years	4	10
Gender		
Male	-	0
Female	40	100
Educational qualification		
Undergraduate	23	58
Post graduate	17	42
Any other	-	-
Total years of experience		
0-3 years	9	23
4-6 years	21	53
7-9 years	6	15
> 10 years	4	10
Marital status		
Married	28	70
Un married	12	30
Number of children		
0	9	23
1	22	55
2	7	17
> 2	2	5
Previous exposure to formal training to treat health issues		
Yes	34	85
No	6	15

In the present study majority of the subjects were females, this is similar to other study findings that in their study majority of study participants were females. It might be due to the fact that at pre-school level female tutors are generally preferred as highlighted in previous reports<sup>11</sup>. In the present study,

most of the subjects 23 (58%) belong to the age group of 21-25 years and equal number of subjects 4 (10%) subjects belong to the age group of 30-35 years and >35 years. These were similar to the findings of Narendar Dawani et.al (2013) where the mean age of sample was 28 ±8.64 years

with 66.7% (64) below 30-year age bracket and 33.3% (32) over 30-years old. The present study findings related to educational qualification such as 23(58%) subjects completed undergraduate and 17(42%) have done post-graduation degree are congruent with findings of Narendar Dawani which showed that nine percent of teachers had received secondary school education, 33% had higher education, 47% had received

graduate degree whereas only ten percent were postgraduates<sup>12</sup>.

In the present study 70% of the subjects were married and 30% of the subjects were reported unmarried; whereas, 55% subjects had previous exposure to formal training to manage minor health issues among primary school children and 45% subjects not undergone any training.

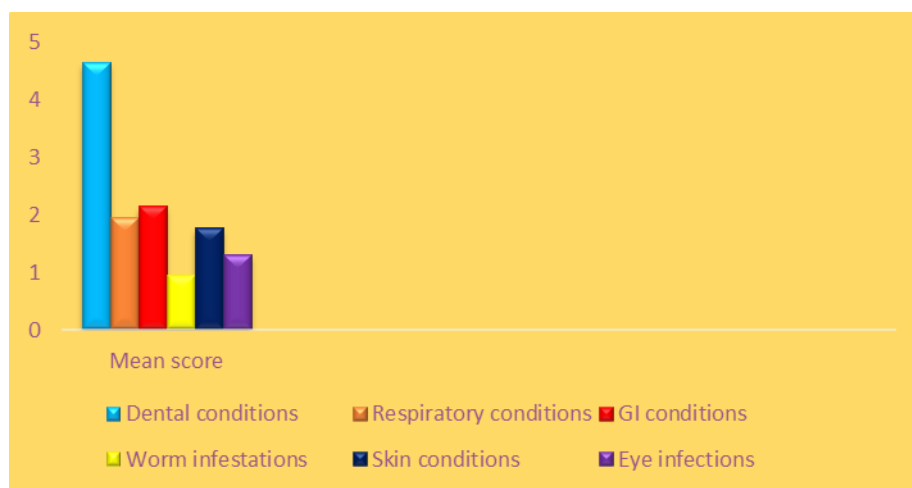


Fig 1: Bar diagram showing distribution of mean knowledge score among primary school teachers in the pre test

Fig-1, showed that the maximum mean percentage score obtained by the subjects was 52.07 in the area of dental conditions and its related management and the minimal mean percentage score obtained by the subjects was 19.50 in the aspect of worm infestations and its management. The current study findings also similar with the study findings of exploring the attitudes and theoretical understanding of the management of allergic reactions among future teachers at Slovenian schools, which

found that teachers had positive attitude and an average understanding of managing allergic reactions (59.4%, SD=16.1) and only 17.1% were not aware of their responsibility for children's health in the class room<sup>13</sup>. Also, these findings were similar to the findings of Hinshaw SP which showed that teachers had less knowledge regarding behavioural disorders mainly attention deficit (45%) with median block-scores of (56%) respectively<sup>14</sup>.

Table 2: Area wise mean and mean percentage score of subjects in the post test N=40

	Minimum	Maximum	Mean	SD
Dental conditions	4	8	4.25	0.86
Respiratory conditions	4	6	2.77	0.38
GI conditions	5	7	3.42	0.46
Worm infestations	3	4	2.61	0.39
Skin conditions	3	5	3.03	0.54
Eye infections	3	4	2.46	0.34

Table 2, evidenced that in the post test, subjects scored maximum mean percentage score in the aspect of eye infections and their related management, whereas, minimal mean percentage score was in the area of

dental conditions and its related management. However, more or less same mean percentage score was obtained by the subjects was in the aspects of GI conditions and worm infestations respectively.

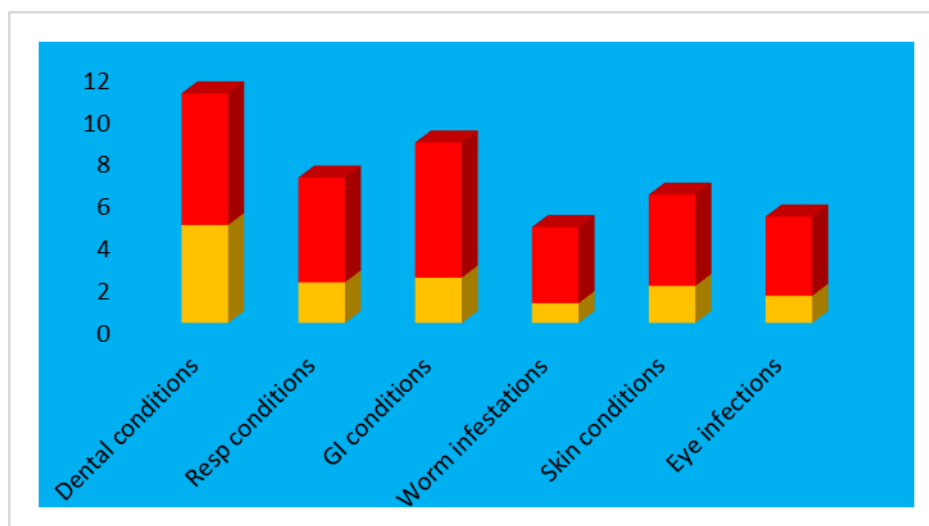


Fig-2: Bar diagram showing the comparison of mean knowledge score among primary school teachers in the pre and post test

From the above fig 2, it was clear that, there was an improvement in the post test mean percentage knowledge score compared to pretest knowledge score at  $p < 0.001$ . In the pre-test, majority of the subjects 27(67.5%) had moderate level of knowledge and 13 (32.5%) subjects had inadequate level of knowledge in the management of common health problems and its related management. There was a significant improvement in the overall posttest knowledge score (8.53) while compared with overall pretest knowledge score (19.54) with a significant gain of 11.01, which was found to be highly significant at the level of  $p < 0.001$ . The present study findings were similar with the following study findings of effectiveness of Structured Teaching Programme on selected common behavioural problems of children in selected schools at Vadodara evidenced that in pre test, primary school teachers were having an average 49.40% knowledge regarding selected common behavioural problems of children and mean score was  $14.82 \pm 3.372$  and in post test, average 75.83% knowledge regarding selected common behavioural problems of children and mean score was  $22.75 \pm 2.802$  with calculated t- value of  $33.233(2.00)$  0.05 level of significance<sup>15</sup>. Similar study done by Sailaxmi B, to evaluate the effectiveness of planned teaching programme on knowledge of school teachers regarding management of hyperactive students among

cohort group of 40 teachers, teaching from 1st to 7th standard of selected private schools showed that mean difference between pre-test (14.6) and post-test score (30.5) and the difference was significant ( $t=16.03, p < 0.01$ )<sup>16</sup>. Also, the study findings were congruent with the findings of Bhanwara Priyesh, which showed that the knowledge of majority (93.34%) of the teachers in pre-test of the experimental had an average knowledge score whereas in post-test a majority 75% of the study participants had a good knowledge score, and evidenced the planned teaching was effective in increasing the knowledge of teachers regarding behavioral problems<sup>17</sup>. Another study findings of Patidar Rakesh (2016) concluded that the self-instructional module enhanced the knowledge of primary school teachers regarding prevention of worm infestations<sup>18</sup>. From the above the findings, it was clearly evident that programmed instruction was effective in improving the knowledge about common health problems among pre school teachers. Hence, research hypothesis ( $H_1$ ) stated that there will be a significant difference between the pre and posttest knowledge score regarding the management of common health problems of school children by primary school teachers at  $p < 0.05$  was accepted. Also, findings evidenced that though there was no significant association found

between the demographic variables of age in years, educational qualification, total years of experience, marital status and number of children, there was a significant association was found between the previous exposure to formal training to manage minor health issues among primary school children (4.256) at  $p < 0.05$  among selected participants.

## CONCLUSION

By virtue of the training and opportunity to influence large number of children and their parents, teachers form a particular group of interest in planning and implementation of oral health programs. In the present scenario, most of the mothers were working and the children spend more time in the school with their school teachers. In India due to poverty and prevailing socio-cultural milieu a substantial number of school children suffer from various diseases which can be prevented if diagnosed and treated early. If a teacher who is mingling and spending much time with school children is capable of identifying and taking an appropriate action would be beneficial to the society and country. Also, it is important to the school organizations and other community organizations to keep the teachers with updated knowledge of easily manageable health issues among children. However, school health nurse also had a equal role to improve the health status of school children in the form periodically conduction various seminars and workshops.

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