

Development of early childhood nutrition education package for preschool children and their parents in Kochi

Nimmi Jacob, Manu .V.Thomas

Department of Home Science, St. Teresa's College Ernakulam

Abstract- Children are the nation's most important resource. They hold the potential and set the limits of future development of any country. Children are not born with the innate ability to choose a nutritious diet, instead their food habits are learned through experience and education. Basic knowledge of food and normal eating is learned in childhood. Parents have been found to be the principle regulators of children's eating and food supply, and the home environment is most influential on children's consumption behaviors. Preschool children between the age group of 3 ½ yrs to 4 ½ years and 4 ½ years to 5 ½ years and their parents were selected for the nutrition education programme. The tools developed for the programme includes PowerPoint presentation and recipe booklet on smart school snacks for the parents. A nutrition handbook containing information about basic nutrition, food pyramids, stories and rhymes on nutrition were developed for the preschool children. The samples were subjected to pre test and post test to evaluate the impact of the developed tools.

Index Terms- nutrition education, preschoolers

I. INTRODUCTION

Children are the nation's most important resource. They hold the potential and set the limits of future development of any country. Children in the earliest years of their lives are of critical importance both to their immediate wellbeing and to their future (UNICEF, 2011). Preschool children constitute 20 per cent of the Indian population. This is a huge human resource which needs to be developed and nurtured for the country to progress. The young children to develop into responsible citizens with correct attitudes towards food and hygienic practices, nutrition and health education (NHE) should be started as early as possible. Nutrition and health education in the formative years of preschool age will help to inculcate correct habits and will aid in instilling right beliefs (Ramesh and Saroj 2003). Research evidence suggests that children are not born with the innate ability to choose a nutritious diet; instead their food habits are learned through experience and education. Basic knowledge of food and normal eating is learned in childhood (Birch, 1999).

The nutrition education of preschoolers requires the involvement of the young child's primary role models: parents, caregivers and teachers. Socioeconomic status and cultural traditions strongly influence eating habits and therefore health, nutrition status and disease rates (Birch, 1984). Early nutrition education

should be a part of the school curriculum and that enables children to learn at an early age, the importance of healthy eating. Healthy eating habits developed early in life will encourage healthy eating as an adult (Fernandez, 2006).

Parents have been found to be the principle regulators of children's eating and food supply and the home environment is most influential on children's consumption behaviors (Cambell et al., 2006).

II. REVIEW OF RESEARCH

As given by Hunsley (1982) nutrition education is so important to two to five year olds because the quality of their nutrition affects their growth and development. These positive food practices and attitudes that are established during the early years are believed to affect food choices and consequently nutritional status throughout life. The early years are the most important years for nutrition education because it is during this period that lifetime eating habits are formed. According to Singleton (1992), the early years in a child's life are critical ones to the formation of health promoting nutritional concepts and behavior.

A child's eating behaviour is strongly influenced by the family environment. The family eating environments include parents own eating behaviours and child feeding practices. Results of research on behavioural mediators of familial patterns indicate that parents own eating behaviours and their parenting practices influence the development of children's eating behaviours (Birch et al., 1984). Parents create environments for children that may foster the development of healthy eating behaviours and weight, or that may promote overweight and aspects of disordered eating. Characteristics of these environments include socio-demographic factors, parental activity, parental eating styles and parents' child-feeding styles. Parents shape the development of children's eating behaviours, not only by the foods they make accessible to children, but also by their own eating styles behaviour at mealtimes and child feeding practices. Parent's child-feeding practices are associated with children's eating behaviours, including specific eating styles, food selection and preferences, and the regulation of energy intake (Silvia et al., 2008). Nutrition education can bring about the desired change only through appropriate nutrition education tools.

III MATERIALS AND METHODS

100 preschool children (n=100) between the age group of 3.5 to 4.5 and 4.5 to 5.5, and their parents from Kochi were selected to conduct the nutrition education.

I Development of nutrition education package

The Nutrition Education package was formulated for the study consisted of

1. Nutrition Handbook for preschool children

A handbook titled as ABC of healthy eating containing information about basic nutrition, commonly available foods and their names along with learning alphabets, food guide pyramid, stories and rhymes on nutrition. Nutrition based activities were also given in the handbook.

2. Power point presentation for parents

In the present study a power point titled “Eating right everyday” was formulated to educate the parents on basic dietary guidelines. The five food groups, recommended dietary allowance for preschool children, dangers of processed and ready to eat foods, deficiency diseases, tips for healthy eating and promoting healthy eating for preschool children were the major points selected to make the PowerPpoint.

3. Recipe Booklet for parents

A recipe booklet titled “Smart School Snacks” was developed. A literature review published by the University of Florida titled “The Benefit of Healthful Snacking” convinced that using school snacks as the venue to teach nutrition lessons was appropriate. Research showed the importance of focusing nutrition education on away from home food consumption and snacking. Bobroff, (2005). A recipe booklet containing healthy snack preparations suitable for preschoolers were too planned. This book enabled the parents to select healthy snacks for their kids.

II Evaluation of education package by experts

Nutrition Education packages (Power point Presentation and Nutrition Hand Book) were evaluated by experts on the basis of its efficiency using a 5 point score card.

III Conduct of nutrition education programme

The hand book developed was used as a nutrition education tool for preschoolers and developed power point for parents.

IV Impact assessment of the developed tools

The impact of the developed education package was assessed by using a pre test and a post test.

Nutrition knowledge among preschool children were assessed by using three activities based on nutrition. Play way method was used to conduct the assessment, where the child understands his needs and goals while playing.

Three activities were distributed before and after the nutrition education programme. The difference in response obtained were noted and were statistically evaluated using t-test.

To evaluate the impact of developed power point, ten questions based on the power point presentation were formulated and were

distributed among the parents before and after the conduct of the education programme. The responses were statistically evaluated using t- test to assess the impact.

using nutrition education tools such as folders, slides, leaflets, charts and audio visual CDs, among children’s girls in Hyderabad city revealed significant improvement in the nutrition related knowledge in the experimental group (Rao et al, 2007).

IV. RESULT AND DISCUSSION

Development of handbook for preschool children



Fig 1- Developed nutrition handbook, Power point CD & recipe book

Evaluation of developed nutrition education package by experts were given in Table 1

Table 1 The mean scores given for the nutrition handbook and power point by experts

Characteristics	Mean scores for handbook (max. score =5)	Mean scores for power point (max. score =5)
Clarity	4.5	4.2
Brevity	4	3
Relevance to topic	5	5
Appropriateness of target group	5	5

Evaluation of nutrition education package by experts revealed that relevance to topic and appropriateness of the target group obtained the maximum score of 5 and 4.5 respectively.

Impact assessment of nutrition education using the developed tools

Table 2 Mean test score of Nutrition education using Handbook by preschool children 3.5 to 4.5 years (n=50)

Activity	Test	Mean (Max. score =5)	SD	Mean Difference	Calculated t - value	Table d t - value	Si g
Identification of food	Pre	3.32	0.9	-	12.69	** 2.680	S
	Post	5.00	0.0	1.68			
Knowledge on healthy & Unhealthy Foods	Pre	2.08	0.8	-	24.90	** 2.680	S
	Post	5.00	0.0	2.92			
Health effect of food	Pre	0.90	0.6	-	22.90	** 2.680	S
	Post	4.16	0.7	3.26			

S → Significant
** Level of Significance is 0.01

Table 3 Mean test score of Nutrition education using Handbook by preschool children 4.5 to 5.5 years (n=50)

Activity	Test	Mean (Max. score =5)	SD	Mean Difference	Calculated t - value	Table d t - value	Si g
Identification of food	Pre	4.90	0.30	-0.10	2.33	* 2.001	S
	Post	5.00	0.00				
Knowledge on healthy & Unhealthy Foods	Pre	4.20	0.63	-0.80	8.85	** 2.680	S
	Post	5.00	0.00				
Health effect of food	Pre	2.44	0.90	-2.36	18.5	** 2.680	S
	Post	4.80	0.40				

S → Significant
** Level of Significance is 0.01
* Level of Significance is 0.05

Among the three activities given for preschool children between the age group of 3.5 to 4. All pre test has got least score. But

when post test was conducted identification of food and knowledge on healthy and unhealthy food scored a maximum score of 5. But children find it difficult to respond with the health effects of food even in post test. In the case of children between the age group of 4.5 to 5.5 they responded comparatively better during pre test. But showed a significant difference in the responses between pre and post test. Since the calculated t value is greater than the tabled t value, for all the three activities it can be concluded that the nutrition education was brought about a significant difference in the knowledge level preschool children in both age groups.

Table 4 Mean test score of power point presentation by parents (n=100)

Test	Mean (Max :5)	SD	Mean Difference	Calculated t - value	Tabled t - value	Si g.
Pre	4.86	1.15	-4.18	26.057	2.626**	S
Post	9.04	0.85				

S → Significant
** Level of Significance is 0.01

The effectiveness of the PowerPoint evaluated by conducting the nutrition education also revealed that there is a significant difference in the level of knowledge among the parents both during pre and post test .The calculated ‘t’ value is greater (26.057) than the tabled ‘t’ value. (2.626). It can be concluded that the PowerPoint has brought about a significant difference in the knowledge level of the parents and had the level of significance of 0.01

V Conclusion

The study was to develop a nutrition education package for preschool children and their parents. The developed packages were evaluated by experts in the field of nutrition. Nutrition education was conducted using the developed tools. The impact of the education programme was evaluated by means of pre test and post test. The effectiveness of the education programme for preschool children revealed that majority of the children obtained maximum test score during post test compared to pre test. Even the parents also received maximum score for their post test. So the present study indicated that nutrition education during early years can impart greater knowledge among children. The study also revealed that nutrition education should also be given to parents during the early years of their child’s life as they are the primary decision makers at home. so the developed nutrition education tool was effective in imparting nutrition knowledge among preschool children and their parents.

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AUTHORS

First Author – Nimmi Jacob , M.Sc. Food And Nutrition,
Lecturer , Department of Home science , St.Terasas College
,Ernakulam. nimsmails@gmail.com

Second Author – Manu V Thomas , M.Sc Food & Nutrition ,
Department of Home science , St.Terasas College ,Ernakulam.
Manu.anoop@gmail.com.

