

Non-formal Applied Nutrition Education Programme with a Group of Students Attending a Vocational Rehabilitation Centre

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Introduction

The nutritional problems of Bangladesh is wide-spread, persistent and apparently increasing with time. Malnutrition affects the children under five, pregnant and lactating mothers. Nutrient consumption has decreased significantly in the last two decades¹. The major determinant of the nutritional problems have been analysed by a number of authors^{1, 2}. It is essentially due to the lack of nutrition knowledge coupled with poverty and disease. Many cases of undernutrition could be prevented if the mothers know how to make the best use of their available food. A farmer's family does not know how to plan his farming according to the nutrient need of his family. Moreover, a number of taboos and beliefs act against proper nutrition. All these emphasised the need for nutrition education in all social classes³.

To provide nutrition education to the common mass, non-formal approach has been advocated by a number of authors⁴⁻⁷. Non-formal education system has a number of advantages over the formal system specially in the behavioral sphere³. Non-formal nutrition education is relatively a new approach in Bangladesh. Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN) has been conducting an applied nutrition programme. The main point of intervention of the programme is non-formal applied nutrition education to make the people aware of their problems and resources to solve the problems on self help basis. The approach of the programme has a basic difference with the original concept of nutritional rehabilitation as defined by Bengoa⁸. BIRTAN's approach is home based and on attempting to develop self reliance.

In this paper we report on the evaluation of the impact of a comprehensive non-formal applied nutrition education programme conducted with a batch of students attending the vocational rehabilitation centre of the institute.

Materials and Methods

The Trainees

Trainees attending the rehabilitation centre of the institute for vocational training were invited to attend the applied nutrition training programme. Fifty trainees responded to the invitation.

The Syllabus

The training was conducted with a pre-planned syllabus consisting basic concept of food, nutrition and health, food groups, nutrient content and food value of the foods, nutrient and food requirement of various age groups, balanced food for various age groups, domestic food preservation techniques, safe water, basic sanitation, personal and family hygiene, kitchen gardening. The programme was conducted in 28 lectures and 14 sessions of practical food demonstrations.

Training method

The lectures were made in a simple language using local vocabulary and with prepared educational materials tested previously for their understanding and clarity, Flip charts, posters, pictures, models and most of the time original food articles were demonstrated in the lectures and in the demonstrations. Formulation and preparation of balanced food for various age groups were practically demonstrated and fed to the trainees as their snacks and lunch.

Evaluation

The trainees were interviewed with a pretested questionnaire before the training, regarding the knowledge on food and nutrition, dietary habit, basic sanitation, safe water and the pattern of morbidity and mortality. The trainers were again interviewed after six months of the training with the same set of questionnaire to evaluate the impact of the training in terms of knowledge gained and adoption of the knowledge in their families. In a separate questionnaire, the trainers were asked to comment on the methodology of the training programme and to suggest for improvement. The records of 34 trainees who were available for impact study after six months were considered for this paper.

Results

Table I shows the family background of the trainees Majority of the trainees were below the age of 20 years and were unmarried. Most of the trainees were literate (70.6%) (Table II). About 53% families had monthly family income below Tk. 2,000.00 (Table III). Table IV shows the relationship of the trainees with the head of the family they live with. 47% live with parents, 6% live with relatives and 5% live independently.

In reply to the question of sources of food procurement, 94% stated that market was the source during pre-training period and 85% stated as market after the training (Table V). Families having kitchen garden and poultry have increased compared to the pre-training period.

Knowledge of food and nutrition have improved due to the training (Table VII). More trainees could reply the questions correctly even after six months of training. The results were put to a Chi square test and were found to be significantly different ($P < 0.05$). Adoption of knowledge after the training was evaluated. Before training fathers were given the best food of the family and the trend changed towards the children who really needs the best food (Table VIII). But the difference was not significant. Knowledge of nutrient requirement of pregnant and lactating mothers increased significantly ($P < 0.05$) and higher number of families adopted the knowledge.

In reply to the questions regarding the methodology and the quality of the training programme, the trainees made clear comments (Table IX). 90% of the trainees told the topics of lectures were enough. The language of deliberations, demonstration and practical sessions were clear to the most of the trainees. But 96% of the trainees opined for another such programme which reflected their genuine interest generated during the programme under evaluation. Regarding the methodology, the trainees suggested to emphasise almost all aspects of the programme.

Discussion

The greatest need of the people regarding nutrition education is for practical nutrition advice in straight forward and free language easily understandable to the people. To emphasise these aspects, the planning, selection of trainers, use of education materials and presentation of visual aids needs care. The results obtained in this programme needs careful analysis in the light of the background of the trainees and the methodology followed.

Increase in the knowledge of food and nutrition of the trainees was significant but the adoption of the gained knowledge was not significantly higher in all aspects indicating some deficiency in the methodology. Of course of bring any change in behavioral matters is difficult but repeated attempts may help to improve the rate of adoption⁹. Similar inference could also be drawn from the number of trainees with partially correct reply on the knowledge of food and nutrition. Trainees with partial correct replies need more education to make their knowledge sound and correct which will also help to increase the rate of adoption. The trainees also commented in the similar manner. Improvement in teaching aids is essential. Gosh et. al.¹⁰ also reported similar observation on the visualization of teaching aids by rural women. They recommended the use of live demonstration instead of talking alone. The experience of this programme will be helpful to the workers engaged in similar programmes.

Table I. Family background of the students

Age group in yrs	Unmarried	Married	Widow	Divorce	Total
<15	10	0	0	0	10
16--20	12	3	0	0	15
21--25	0	2	0	0	2
26--30	0	4	1	1	6
31 +	0	1	0	0	1
All ages	22	10	1	1	34

Table II. Level of education of the student

Age group in yrs	Illiterate	Primary	Secondary	Higher Secondary
<15	2	5	3	0
16--20	4	4	5	2
21--25	1	1	0	0
26--30	3	2	1	0
31 +	0	1	0	0
All ages	10	13	9	2

Table III. Monthly family income of the student

Income (Tk.)	% of student
Upto 1,000	17.65
1001--2000	33.29
2001--3000	11.76
3001--4000	20.59
Above 4000	8.82
No reply	5.88

Table IV. Relation of the student with the head of the family

Relationship	% of student
Self	2.94
Parent	47.06
Husband	20.59
Brother	20.59
Uncle/Auntie	5.88
No reply	2.94

Table V. Syllabus of the training programme

Topic	Lecture	Demonstration
Definition of food & nutrition	2	1
Food groups & their function	2	1
Nutrient content of foods	2	1
Nutrient/Food requirement of various age group	4	2
Domestic food preparation & storage	4	2
Balanced food for various age group	4	2
Safe water	1	1
Basic sanitation	1	1
Kitchen gardening	3	2
Personal and Community hygiene	2	1
Care of Pregnant and lactating mothers & children	4	2

Lecture -- 45 min. ; Demonstration -- 30 min.

Table VI. Information on the source of collection of food

Foods	Source	% of Families	
		Before Training	After training
Staple food	Market	94.12	85.29
	Ration Shop	00	00
	Own Produce	00	00
	All sources	5.88	14.71
Kitchen garden	Have	35.29	52.94
	Don't have	64.18	47.06
Poultry birds	Have	41.18	58.82
	Don't Have	58.82	41.17

Table VII. Knowledge of food and nutrition

Question	% of student						χ ² values
	Pre--training			Post--training			
	Correct	Partial correct	Incorrect	Correct	Partial correct	Incorrect	
Why we eat food	8.82	82.35	8.82	35.29	58.82	5.88	14.62
What is good food	14.71	29.41	55.88	17.64	73.53	8.82	2.45
Naming good food	41.18	41.18	17.65	52.94	38.24	5.88	12.13
What is energy giving food	26.47	2.94	70.59	73.53	8.82	17.65	7.16
Naming energy giving food	26.47	2.94	70.59	35.29	14.71	50.00	19.20
Naming food for repair and maintenance	8.82	32.35	58.82	58.82	5.88	35.29	4.02
Naming food for protection	41.18	11.76	47.06	50.00	11.76	38.24	9.48

(P < 0.05)

Table VIII. Dietary habit of the students' family

Food habits	% of families		
		Before training	After training
Whether all family members eat together	Yes	73.53	76.47
	No	14.71	14.71
	No reply	11.76	8.82
If no who eats first	Father	8.82	8.82
	Brother	5.88	5.88
	Children	00.00	5.88
	No reply	85.29	74.41
Who is served the best food in the family	Father	47.06	29.41
	Brother	11.76	23.53
	Children	00.00	35.29
	Mother-in-Law	00.00	11.76
	No reply	23.53	00.00
Self comment on the nutritional status of the family members	Good	38.24	44.12
	Fair	32.35	29.41
	Bad	29.41	14.71
	Don't know	00.00	11.76
If not good self prescription for improvement	More money	8.82	14.71
	More food	5.88	29.41
	More care	2.94	14.71
	Don't know	82.35	41.18
Knowledge of nutrient requirement of P/L mothers	Have	79.41	94.12
	Have not	20.58	5.88
	If yes whether practices		
	Yes	67.65	79.41
	No	14.81	15.64

Table IX. *Comments of the students on the methodology of the training*

Item	Comment of students %	
Whether topics of lectures were helpful	Yes	90
	No	00
	No comment	10
Whether language was clear to understand	Yes	80
	No	5
	No comment	15
Whether demonstration of food (Dummy / original) was enough	Yes	85
	No	9
	No comment	9
Whether practical food preparation demonstration was enough	Yes	95
	No	2
	Don't know	3
Do you think another such programme is needed for you	Yes	96
	No	2
	Don't know	2
If yes, which portion of the programme you need to be emphasised	*More practice	45
	More demonstration	35
	More lectures	30
	All aspects	20

* More than one replies.

Summary

Trainees attending a rehabilitation centre were given non-formal nutrition education for fourteen days covering food nutrition and related matters. The trainees were interviewed before and after six months of the training to assess their knowledge and adoption of the gained knowledge and to comment on the methodology of the training. The training improved the knowledge of the students significantly but the rate of adoption of the knowledge gained into practice was not at par with the improvement of knowledge. More intensive and repeated education may be needed to change the behaviour to adopt the knowledge gained.

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