Evaluation of an Educational Programme on Proper Intrafamilial Distribution of Food among the Women in a Village of Bangladesh

A.M.M. Mokarram Hossain[1], A. Hafez[2] & Noor Zahan Begum[3]

1. Assistant Professor of Clinical Nutrition. Institute of Nutrition and Food Science, University of Dhaka, Bangladesh. 2. Associate Professor of Bio-Statistics, NIPSOM, Dhaka, Bangladesh. 3. Associate Professor of Physiology, Sir Salimullah Medical College, Dhaka, Bangladesh.

Introduction

In many economically disadvantaged population,the male head of the family received the largest share of family diet in relation to the other members of the family e.g. infants, adolescents, pregnant women, lactating mothers and the aged[1]. Preference in parental care, feeding patterns, intra-familial food distribution, treatment of illness are all favorable to male children and as a result possibly, the female death rates are higher than male[2]. When asked regarding food allocation among the children of different sexes, women tend to deny of unequal treatment invariably, but when inquiry is made child prefer-ence are expressed by majority of women[3]. One worker showed that the energy and protein intake (kcal/kg/-day) varid significantly in different seasons for adults and young chidren and the young childrens proportional intake was low, girls being the lower than the boys[4].

In Bangladesh the intake of foods are remarkably higher for males in all age groups. This disparity of intake of foods reflects the sex discrimination in intrafamilial food allocation. The dietary food distribution of pulses and nuts shows that pregnant and lactating mothers have less share of this type of food in cmparison to other members of the family. They are found to have taken almost no meat in their daily diet in relation to other members of the family. The egg intake among the family members are very much insignificant. Dietary food distributors should know proper distribution of eggs according to the priority of the family members. A significant sex biased distribution of fish remains among the family members. Female of all age groups consumes less fish than that of their male counterpart. This shows a sex differential pattern of food allocation in the family. The elder age group (60-69 years) of male and females usually consume highest amount of milk and milk products in the family, though normallu at that time their protein requirement is less in comparison to the other members of the family[5]. From the above findings, it is clear that, there is lack of know-ledge towards proper intrafamilial distribution of food among the women in our country. So it is very much important for the women to know as to how to choose and distribute the right kinds of foods to the right members of the family. Considering the above factors the present paper has tried to present an evaluative

findings of an educational intervention programme on proper intrafamilial distributin of food among the women of a village near Dhaka.

Materials and Methods

The study was carried out in a village named Chandpur, about 30 K.M. away from Dnaka. Out of 164 households of the village 75 were selected using simple random sampling technique. Women who distributies dietary food in relation of the head of house holds in the family were chosen as rspondents and the same respondents were considered for the educational intervention programme. The study was conducted in 3 phases. (1) Setting the educational objectives according to the level of knowledge on some specific aspects of intrafamilial distribution of food identified from the base line data, (2)Implementation of an educationl progamme by preparing a curriculum with the selected appropriate educational methods and media, (3) Evaluation of the educational programme to know the change in knowledge by administering the same questionaire used in baseline survey. Level of knowledge on different types of foods and their intrafamilial distributon was judged on three scales e.g. full knowledge (F.K.) (all relevent answers marked correctly), partial knowledge (P.K.) (At least one correct answer) and no knowledge (N.K) (no reply or wrong scoring). An one day educational programme was chalked out by the researcher himself for implementation in the study area. It was decided that the programme could be implemented in small batches through group discussion and

lectures. Accordingly the study population was divided into seven small batches and entire village was thus covered in seven days. After a gap of seven days each batch was evaluated to observe the change in knowledge on different aspects of proper distribution of food in the family.

Results

Table 1 shows that, the full knowledge and partial knowledge groups had increased from 2.6% to 46.7% and 6.7% to 42.6% respectively with the decrease of no knowledge group from 90.7% to 10.7% Value of Z was highly significant at 1% level. (P<0.01 for full knowledge). Table 2 Indicated that after education full knowledge increased from 1.3% to 81.37% with a decrease of partial knowledge from 82.7% to 12% and no knowledge from 16% to 6.7% (P<0.01 for full knowledge). In pre-education period, 2.6%,2.6% and 94.8% respondents had full knowledge, partial knowledge and no knowledge respectively. After the education, the no knowledge group had been decreased from 94.8% to 13.3% value of Z was highly significant at 1% level. (P<0.01 for the differences in percentages having full knowledge at pre and post educational period) (Table 3). Table 4 shows that 0%, 13.3% and 86.7 % of the respondents had full knowledge, partial knowledge and no knowledge on the higher requirements of body building and maintenance food among the family members in pre-education stage. In post-education stage it became 28 (37.3%) and 43(57.4%) and 5(5.3%) with an increase of full

knowledge and partial knowledge to 37.3% and 57.4% respectively. (P<0.01 for full knowledge).

It has also been seen that in posteducation period knowledge increased to 40%, partial knowledge increased to 53.3% and no knowledge decreased from 93.4% to 6.7% showing significant differences in the proportions between pre and post education. (P<0.01 for full knowledge). (Table 5). In the table 6, after the intervention programme an increase of full knowledge to 39% ,partial knowledge to 53% and decrease of no knowledge to 8% have been shown. Z test confirmed increase in the level of full knowledge at post education period. (P<0.01 for full knowledge).

Before education programme about 0%,23(30.6%) and 52(69.4%) respondents had full knowledge, partial knowledge and no knowledge respectively. After the education programme an increase in full knowledge to 38.6% and partial knowledge to 56% had been noticed with decreased of no knowledge group to 5.4% (P<0.01 for full knowledge). (Table 7). Table 8 shows that full knowledge had been increased from 0% to 84% in post-education with a decrease of partial knowledge and no knowledge group from 93.4% to 16% and 6.6% to 0% respectively showing programme was effective (P<0.01 for full knowledge).

In the table 9, the full knowledge group were increased to 68% followed by decrease of partial knowledge to 29.3 % and 2.7% (P<0.01 for full knowledge). In the post education period (table 10), the No knowledge was decreased from 77.4% to 6.7% The full knowledge and partial knowledge group was seen to incereased from 0% to 45.2%, 22.6% to 48.1% respectivetively. (P-<0.01 for full knowledge). Table 11 shows that there was a decrease of 'No Knowledge' Group to 9.3% in post education period and increase of 'Full Knowledge' group from 0% to 34.7% (P<0.01 for full knowledge).In Table 12 there were increase of full knowledge group from 0% to 6.8%, decrease of partial and no knowledge group to 6.6% and 6.6% respectively. (P<0.01 for full knowledge). Table 13 analyses of all the 12 aspects that are studied. It shows that at pre-education stage in general respondents did not have full knowledge on any aspect. They have either partial knowledge or no knowledge. The over all picture as summarised in this table was 0.6% 'Full Knowledge', 35% 'Partial Knowledge' and 64.4% 'No Knowledge'. The pre-education 2.4% of 'Full Knowledge' was change to a post-education minimum of 34.7% (Table 3) and maximum of 86.8% (table 12). yielding an average of 53% (Table 13). Consequently 'Partial Knowledge' group averaged out to 40.2% and 'NO Knowledge' group reduced to about 6.8% (Table-13). The achievement was significant. (P<0.01 for full knowledge).

Table 1. Knowledge on energy giving food of the respondents

Respondents	Pre- Education				Post- Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	1 (2)	3 (5)	55 (93)	59 (100)	23 (39)	28 (47)	8 (14)	59 (100)
Daughter	1 (14)	1 (14)	5 (72)	7 (100)	5 (72)	2 (28)	0	7 (100)
Mother	0	1 (11)	8 (87)	9 (100)	7 (78)	2 (22)	0	9 (100)
Total	2 (2.6)	5 (6.7)	68 (90.7)	75 (100)	35 (46.7)	32 (42.6)	8 (10.7)	75 (100)
95% confidence interval	0 to 6.2	1.0 to 12.3	84.1 to 97.3		35.4 to 58	31.4 to 53.8	3.7 to 17.7	

Z = -6.2 significant at 1% level (P< 0.01) for full knowledge.

Table 2. Knowledge of food for repair and maintenance

Respondents	Pre-Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	53 (90)	6 (10)	59 (100)	48 (81)	6 (10)	5 (9)	59 (100)
Daughter	1 (14)	3 (43)	3 (43)	7 (100)	6 (86)	1 (14)	0 (0)	7 (100)
Mother	0 (0)	6 (67)	3 (33)	9 (100)	7 (78)	2 (22)	0 (0)	9 (100)
Total	1 (1.3)	62 (82.7)	12 (16)	75 (100)	61 (81.3)	9 (12)	5 (6.7)	75 (100)
95% confidence interval	0 to 3.9	74.1 to 91.3	7.7 to 97.3		72.4 to 90.1	4.7 to 19.3	1.1 to 12.3	

Z = -10 significant at 1% (P< 0.01) for full knowledge.

Table 3. *Knowledge on food for protection*

Respondents	Pre-Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	2 (3)	57 (97)	59 (100)	16 (27)	33 (56)	10 (17)	59 (100)
Daughter	1 (14)	0 (0)	6 (86)	7 (100)	4 (57)	3 (43)	0 (0)	7 (100)
Mother	1 (11)	0 (0)	8 (89)	9 (100)	6 (67)	3 (33)	0 (0)	9 (100)
Total	2 (2.6)	2 (2.6)	71 (94.8)	75 (100)	26 (34.7)	39 (52)	10 (13.3)	75 (100)
95% confidence interval	0 to 6.3	1.0 to 6.3	89.7 to 99.8		29.1 to 40	40.7 to 63.3	5.7 to 21.1	

Z = -5.3 significant at 1% level (P< 0.01) for full knowledge.

Table 4. *Distribution of respondents knowledge on the higher requirements of body building and repairing food among the family members.*

Respondents	Pre-Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	8 (14)	51 (86)	59 (100)	20 (34)	35 (59)	4 (7)	59 (100)
Daughter	0 (0)	1 (14)	6 (86)	7 (100)	2 (29)	5 (71)	0 (0)	7 (100)
Mother	0 (0)	1 (11)	8 (89)	9 (100)	6 (67)	3 (33)	0 (0)	9 (100)
Total	0 (0)	10 (13.3)	65 (86.7)	75 (100)	28 (37.3)	43 (57.4)	4 (5.73)	75 (100)
95% confidence interval		6.6 to 20.9	79 to 94.4		26.4 to 48.2	46.2 to 68.6	0.3 to 10.4	

Z = -6.2 significant at 1% level (P< 0.01) for full knowledge.

Table 5. *Knowledge on the dietary sharing of pulses in the family.*

Respondents	Pre-Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	3 (5)	56 (95)	59 (100)	21 (36)	33 (56)	5 (8)	59 (100)
Daughter	0 (0)	1 (14)	6 (86)	7 (100)	3 (43)	4 (57)	0 (0)	7 (100)
Mother	0 (0)	1 (11)	8 (89)	9 (100)	6 (67)	3 (33)	0 (0)	9 (100)
Total	0 (0)	5 (6.6)	70 (93.4)	75 (100)	30 (40)	40 (53.3)	5 (6.7)	75 (100)
95% confi-dence inter val		1 to 12.2	87.8 to 99		29 to 51	42.1 to 64.6	1.1 to 12.3	

Z = -6.11   significant at 1% level (P< 0.01) for full knowledge.

Table 6. *Knowledge on the sharing pattern of fish in take among the family members*

Respondents	Pre-Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	7 (12)	52 (88)	59 (100)	22 (37)	31 (53)	6 (10)	59 (100)
Daughter	0 (0)	1 (14)	6 (86)	7 (100)	1 (14)	6 (86)	0 (0)	7 (100)
Mother	0 (0)	1 (11)	8 (89)	9 (100)	6 (67)	3 (33)	0 (0)	9 (100)
Total	0 (0)	9 (12)	66 (88)	75 (100)	29 (39)	40 (53)	6 (8)	75 (100)
95% confi-dence inte-rval		4.7 to 19.3	80.7 to 95.3		28 to 50	41.8 to 64.3	3.7 to 14.1	

Z - score = -4.2 significant at 1% level (P< 0.01) for full knowledge.

Table 7. *Knowledge on the sharing of meat and egg in the family*

Respondents	Pre Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	20 (34)	39 (66)	59 (100)	22 (37)	33 (56)	4 (7)	59 (100)
Daughter	0 (0)	2 (29)	5 (71)	7 (100)	1 (14)	6 (86)	0	7 (100)
Mother	0	1 (11)	8 (89)	9 (100)	6 (67)	3 (33)	0 (0)	9 (100)
Total	0 (0)	23 (30.6)	52 (69.4)	75 (100)	29 (38.6)	42 (56)	4 (5.4)	75 (100)
95% confidence interval		20.0 to 41.0	60.1 to 80.7		28.3 to 49.6	45.7 to 67.2	0.3 to 10.5	

Z- score = -4.2 highly significant at 1% level (P< 0.01) for full knowledge.

Table 8. *Knowledge on the sharing of milk and milk products in the family*

Respondents	Pre Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	59 (100)	0 (0)	59 (100)	53 (89)	6 (10)	0 (0)	59 (100)
Daughter	0 (0)	5 (71)	2 (29)	7 (100)	4 (57)	3 (43)	0 (0)	7 (100)
Mother	0 (0)	6 (67)	3 (33)	9 (100)	6 (67)	3 (33)	0 (0)	9 (100)
Total	0 (0)	70 (93.4)	5 (6.6)	75 (100)	63 (84)	12 (16)	8 (0)	75 (100)
95% confidence interval		87.8 to 99.0	6.6 to 12.2		75.8 to 92.3	31.4 to 24.3	0 0	0 0

Z = -10.4 highly significant (P< 0.01) for full knowledge.

Table 9. *Knowledge n the dietary allowances of pregnant and lactating mothers in relation to other women*

Respondents	Pre-Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	38 (64)	21 (36)	59 (100)	41' (70)	16 (27)	2 (3)	59 (100)
Daughter	0 (0)	2 (29)	3 (71)	7 (100)	4 (57)	3 (43)	0 (0)	7 (100)
Mother	0 (0)	4 (44)	5 (56)	9 (100)	6 (67)	3 (33)	0 (0)	9 (100)
Total	0 (0)	44 (58.6)	31 (41.4)	75 (100)	51 (68)	22 (29.3)	2 (2.7)	75 (100)
95% confidence interval		57.5 to 69.7	30.3 to 52.5			57.5 to 78.5	13 to 39.8	0 to 6.2

$Z = -8.8$ highly significant ($P < 0.01$) for full knowledge.

Table 10. *Knowledge on the nutritional needs of the children compared to adults by body surface area*

Respondents	Pre-Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	15 (25)	44 (75)	59 (100)	25 (42)	29 (50)	5 (8)	59 (100)
Daughter	0 (0)	1 (14)	6 (86)	7 (100)	2 (29)	5 (71)	0 (0)	7 (100)
Mother	0 (0)	1 (11)	8 (89)	9 (100)	7 (78)	2 (22)	0 (0)	9 (100)
Total	0 (0)	17 (22.6)	58 (77.4)	75 (100)	34 (55.2)	36 (48.1)	5 (6.7)	75 (100)
95% confidence interval		13.1 to 32.0	67.9 to 86.8			39.5 to 50.9	36.8 to 59.4	1.1 to 12.3

$Z = -6.6$ highly significant ($P < 0.01$) for full knowledge.

Table 11. *Respondent's knowledge on food in take of the female child in relation to male child*

Respondents	Pre- Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	3 (5)	56 (95)	59 (100)	18 (30)	34 (58)	7 (12)	59 (100)
Daughter	0 (0)	1 (14)	6 (86)	7 (100)	1 (14)	6 (86)	0 (0)	7 (100)
Mother	0 (0)	2 (22)	7 (78)	9 (100)	7 (78)	2 (22)	0 (0)	9 (100)
Total	0 (0)	6 (8)	69 (92)	75 (100)	26 (34.7)	42 (56)	7 (9.3)	75 (100)
95% confidence interval		1.9 to 14.1	85.9 to 98.1		33.8 to 45.4	44.8 to 67.2	2.8 to 16	0

Z = -5.6 highly significant (P< 0.01) for full knowledge.

Table 12. *Knowledge on the types of foods that are to be served just after delivery*

Respondents	Pre- Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	0 (0)	51 (86)	8 (14)	59 (100)	51 (86)	4 (7)	4 (7)	59 (100)
Daughter	0 (0)	6 (86)	1 (14)	7 (100)	6 (86)	0 (0)	1 (14)	7 (100)
Mother	0 (0)	5 (56)	4 (44)	9 (100)	8 (89)	1 (11)	0 (0)	9 (100)
Total	0 (0)	62 (82.7)	13 (17.3)	75 (100)	65 (86.8)	5 (6.6)	5 (6.6)	75 (100)
95% confidence interval		74 to 91.2	8.1 to 28.6		79.0 to 94.4	1.0 to 12.3	1.0 to 12.2	

Z = -10.7 highly significant (P< 0.01) for full knowledge.

Table 13. *Respondent's overall Knowledge on different aspects of food including its intramilial distribution*

Respondents	Pre- Education				Post-Education			
	F.K	P.K	N.K	Total	F.K	P.K	N.K	Total
Wife	1 (0.1)	262 (37)	445 (63)	708 (100)	360 (51)	288 (41)	60 (8.0)	708 (100)
Daughter	3 (3)	24 (29)	57 (68)	84 (100)	39 (46)	44 (53)	1 (1.0)	84 (100)
Mother	1 (1)	29 (27)	78 (72)	108 (100)	78 (72)	30 (28)	0 (0)	108 (100)
Total	5 (0.6)	315 (35)	580 (64.4)	900 (100)	477 (53.0)	362 (40.2)	61 (6.8)	900 (100)
95% confidence interval	0.1 to 1.1	31.9 to 38.1	61.3 to 67.5		49.8 to 56.3	37.0 to 43.4	5.2 to 8.4	

$Z = -2.5$ highly significant ($P < 0.01$) for full knowledge.

Discussion

The impact of education programme was significant interms of achieving high percentage of women having full knowledge on any aspect and all aspcts combined (Table 3 to 13). Z test at 1% level confirmed this position. At pre-education stage percentage of food distributors having full knowledge on any aspects, in general was Zero or around Zero and did not exced 2.6% at the most. (Table 1). Increase in the percentage of the respondents having full knowledge had increased to at least 34.7% (Table 11) from a level of Zero percent. Highest 86.8% full knowledge was achieved on knowledge about foods that were to be served just after delivery (Table 12). Over all increase in the full knowledge of proper intrafamilial food allocation of the respondents due to intervention programme was 52.6%. Another study done by Haq et al[6] showed 45% increase of Nutritional knowledge in a rural community. Various workers such as Manoff, R. K.[7] and Quddus M.A. et al[8] have shown similar results as we have got in our study. The introduction of Nutrition education programme has impact on the nutritional status of children and development of awareness to lactating and pregnant mothers, 9,10. Caldwell J.C. 11 in his study "Education as a factor of mortality decline" showed that mothers when given education on food and nutrition will decline the death rate of the children showing impact of nutrition education. Chowdhury et al 12 in his study showed that a substantial improvement of nutritional knowledge can be

found after proper nutrition educational intervention.Respondents with partial correct answer need more education to make their knowledge sound and correct which will also help to increase the rate of adoption. Of course, to bring any change in behaviour, is very difficult, but repeated attempts, may help to improve the rate of adoption13.

Summary

The study has been carried out among 75 respondents in a village Chandpur, near Dhaka with a view to assess the existing level of knowledge on different apects of intrafamilial distribution of food and to observe the change in their knowledge after an educational intervention programme. An one day educational programme was chalkedout and implemented in7 batches simulteneously to cover the whole village, After a gap of 7 days each batch was evaluated to observe the change in knowledge. Assessments in the level of their knowledge before & after of each training were conduced by a standard questionaire. Over all full knowledge obtained by the respondents initially was 0.6% which increased 53.0% after the educational intervention programme. The post educational findings showed a significant $(P<0.01)$ increase in knowledge level among respondents on every aspects of intrafamilial distribution of food that had been studied.

References

1. Gopal Das, T, saxcna, K., Gupta, A. : Intrafamilial distribution of Nutrients in a deep Forest-Dwelling tribe of Gujrat, India, Ecology of Food and Nutrition, 13, 69-79, 1983.

2. Stan D' Souza, Lincoln C. Chen, Sex diffentials in Mortality in Rural Bangladesh, Population and development Review, 6(2): 257-269, 1980.

3. Lincoln C, Chen, Emdadul Haque, Stand D' Souza, Sex bias in the family allocation of food and health care in rural Bangladesh, population and development review, 7 (1): 55-70, 1981.

4. Abdullah, M., Wheeler, E.F., Seasonal variations, and the Intrahousehold distribution of food in a Bangladeshi village American Journal of Clinical Nutrition, 41 : 1305-1313, 1985.

5. Hasan, N., Ahmad, K: Nutrition Survey of Rural Bangladesh,INFS, Dhaka University, P. 195-210, 1985.

6. Huq, M.H; Malek MA and Ahmed, K: Nutrition Education through Secondary schools, Proceedings of the 3rd Bangladesh Nutrition Seminar; Dhaka, P. 185-194, 1979.

7. Manoff, RK; Social marketing and Nutrition Education; A Pilot Project in Indonesia, UNICEF, Asignment Children 65 (68) : 95-113, 1984.

8. Quddus, M.A.; Islam AIM and Karim. Bangladesh Academy for Rural Development, Education of Rural Health and Nutrition Project, Kotbari, Comilla, November, P. 32-37, 1984.

9. Beaton, G.H., and Begoon, J.M, Nutrition in prevntive medicine WHO, Geneva, P. 318, 1976.

10. Burgee, A., and Dean, R.F.A.(edt.), Malnutritional and Food habits. London, Tavistook Pupulation, P.120, 1962.

11. Caldwell, J.C., Education as a factor of Mortality declne, An examination of Nigerian data, Poulation studies, Vol. 33, 395-413,1979.

12. M.M.H. Chowdhury, M.A.H. Bhuiyan, M.A. Malek, A study on the effect of Nutrition education in changing knoledge attitude and practice on food and related behaviour, Bangladesh Journal of Nutrition, 1: 10-14 1987.

13. Kabir Ullah, M., Mahfuz, M.A. and Ebrahim. M.N., Nonformal Applied Nutrition Education Programmewhith a group of students attending a vocational Rehabilitation Centre, Nutritional Journal of Bangladesh, 1(2): 122-127, 1988.