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RESEARCH ARTICLE

EFFECTIVENESS OF NUTRITION AND HEALTH EDUCATION AMONG SELF HELP GROUP WOMEN

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ABSTRACT

Woman is the central figure who provides the child care, hygiene, nutrition and even primary health care among families. The health and nutritional status of women are at large very critical and various strategies are being adopted to improve the condition. One of the best agency through which women's status can be improved is Self Help Groups. Three hundred Self Help Group women aged between 30-40 years were selected randomly from Karamadai Block of Coimbatore District, Tamil Nadu and divided equally into two groups – Experimental and Control group. Socio-economic status, dietary background and nutritional knowledge of all the women were assessed. Anthropometric parameters such as height, weight, BMI and Waist Hip Ratio were measured using standardized procedures. They were clinically examined for signs of various nutritional deficiencies. Haemoglobin levels were also estimated to identify the prevalence of anaemia. Based on the results and the reports from PHC centres a Nutrition and Health Education Programme was planned and imparted to the Experimental group for a period of three months through demonstrations, exhibitions, lectures and leaflets,. The evaluation of nutrition and health education was done through a structured questionnaire administered before and after nutrition education about their knowledge, attitude and practices. The data revealed that majority of the women belonged to lower socioeconomic status and their dietary practices were not satisfactory. Clinical signs and symptoms of nutritional deficiency were also prevalent. Mean haemoglobin levels were below normal (10g/dl) among many women indicating anaemic status. Nutrition education showed a positive effect in the experimental group. It is suggested that there is a great need for proper selection and intake of foods in the daily dietaries which can be achieved by changing their attitudes towards proper consumption through nutrition and health education. Long term intervention strategies are the need of the hour.

INTRODUCTION

Women constitute one-half of humanity and they are the pivot around which the family moves. They are the source from which various human activities flow and draw inspiration (Gopalan, 2006). Women are the central figure who provides the child care, hygiene, nutrition and even Primary Health Care (Balasubramaniam, 2006). In developing countries, the percentage of women in organized sector ranges from 15 to 20 per cent whereas it is 78-80 per cent in developed countries. Educated women folk in organized sector enjoys socio economic status on par with male counterparts but it is not so in the case of rural women folk. The number of undernourished women was estimated to be 36 per cent (BMI <18.50, out of which 44 per cent were moderately or severely thin). At the same time, the number of overweight/ obese women has been increasing steadily, 21 percent of women and 15 percent of men are overweight or obese (NFHS-3, 2005-06 and NFHS-2-2000). One in three women in rural India above the age of 35 have been found to be overweight (The Times of India, April 6, 2009). Health is an essential constituent of total well being, it has been reiterated time and again by researchers, policy makers and in various policy documents that no society or nation can achieve total well being of its people, ignoring health. In other words, women's empowerment cannot be achieved by ignoring or denying issues related to health of women. Although women's empowerment has been a central issue on the agenda of various developmental programmes for so many years, women's health has got only little attention (Anant Kumar, 2006). Health is obviously an integral component of women's well-being and empowerment and it is also organically linked to their empowerment within the household and the society. It is in this context, that Self Help Groups play the important role of ensuring good health for the women through empowering them within the household as well as within the society. Self Help Group (SHG) is a group of village-based financial intermediary usually composed of 10-15 local women.

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The group may be either a registered or unregistered group having homogenous socio-economic backgrounds, willfully joining together with an attitude to save their money, make use of such funds to contribute to a common fund with an intention to meet their emergency needs on the basis of mutual help (Mandal, *et al*., 2010). The SHGs are being implemented in India since 1999 as an important poverty alleviation programme. They are gaining momentum and their number has gone up from about 400,000 in 2001 to a whopping number of 1,620,000 in 2005 and about 90 per cent of them are Women Self Help Groups (NABARD, 2005). It is assumed that Self Help Groups will play a larger role in its contribution towards improving women's health and empowerment as well as for achieving 'Millennium Development Goals' in developing countries. It is important to identify various dietary and nutrition problems prevalent among different segments of the population and continuosly monitor diet and nutrition situation of the country to disseminate authentic health and nutrition information through appropriate extension activities (National Institute of Health, 2005).

Till date, the functioning of SHGs has been viewed only from an economic perspective. However, how these economic benefits are being translated into change in women's status, particularly their health status has not been explored. Women's participation in income generating activities is believed to increase their status and decision making power. Health and nutritional status is very important in achieving the women empowerment. Educating the women especially SHG women is the need of the hour. The impact of nutrition and health perspectives in SHGs would pave way for enhancing the nutritional profile of women in rural areas. The impact of nutrition and health perspectives will lead to healthy living in a family and simultaneously it will lead to healthy society (Gibney, 2004). Hence the present investigation was undertaken with the following objectives to

- Study the socio-economic background of the SHG women
- Assess their health and nutritional status
- Evaluate the nutritional knowledge, attitudes and dietary practices of SHG women
- Plan and impart a nutrition and health education programme and evaluate the impact of the same.

MATERIALS AND METHODS

Selection of area and sample for the study

The area selected for the study was Karamadai Block of Coimbatore District in Tamil Nadu. There are 19236 SHG groups in Coimbatore District, out of which 1044 groups are in 17 Panchayat villages in Karamadai Block. Since the investigator was familiar to this area and the co-operation extended by the Self Help Group Women formed the basis for selection of Karamadai Block. Among the 1044 SHGs in Karamadai, 50 SHGs were selected at random and from each group six members were selected. Thus a total number of 300 Self Help Group Women from 50 groups formed the sample for the study. Adult women in the age group of 30-40 years and who have been involved in Self Help Group activities for at least one year were selected for the study. The selected women were equally divided into two groups viz. Experimental and Control Group.

Collection of socioeconomic and dietary information

Various socioeconomic factors indirectly influence the nutritional status of the people in a community. The ethnic background and the educational level of subjects influence their knowledge in various fields, and indirectly influences the food availability and food choice. Again the level of income influences the quantity and quality of foods available and finally the diet and dietary habits. Taking all these factors into consideration the socioeconomic background of the subjects were collected using a structured interview schedule. Expenditure on foods, frequency of food purchase, percentage of expenditure on different food groups, knowledge of the women regarding the nutritional deficiencies, its consequences were included in the interview schedule. The dietary background of the women was gathered by including questions on the type of diet, frequency of meals per day, food and nutrient intake, food beliefs and taboos, food consumption pattern and type of diet taken during illness.

Assessment of nutritional status

Anthropometric measurements such as height, weight, Body Mass Index and Waist Hip Ratio were measured for all the selected women. Nutritional anthropometry is a measurement of human body at different ages and levels of nutritional status. It is based on the concept that an appropriate measurement should reflect any morphological variation occurring due to significant functional physiological change. Anthropometric measurements can be used to assess the type, extent and duration of malnutrition in a community. Anthropometry is relatively efficient to detect individuals at high risk of mortality associated with malnutrition (Bamji *et al*., 2010). Clinical assessment was done for all the selected women by a medical practitioner for the signs of deficiency diseases using a schedule formulated by the investigator to assess the nutritional deficiency. It is based on examination for changes, related to inadequate nutrition, that can be seen or felt in superficial epithelial tissues, especially the skin, eyes, hair or in organs near the surface of body (Megha Mittal, 2013). A 24 hour food recall method was carried out for 3 days for ten per cent of the Self Help Group women to assess their mean food and nutrient intake. The raw equivalent weights of the foods consumed by the women were calculated. From this nutrient intake was calculated using the nutritive value of Indian Foods (ICMR, 2007) and compared with ICMR Recommended Dietary Allowance for Indians for food and nutrient intake (ICMR, 2010). Haemoglobin estimation was carried out for all the selected women by Cyanmethhaemoglobin method with the help of a laboratory technician. Based on the observations and health records from Primary Health Centre, the prevalence of deficiencies such as iron, vitamin A, Calcium and other related illnesses are found to be more prevalent among the women of Self Help Groups in Karamadai Block.

Planning, implementation and evaluation of nutrition and health education

Nutrition and Health Education can serve as an effective tool to modify dietary habits of population groups (Food and Nutrition Service, 2010). Thus, an attempt was made to educate the Self

Help Group women on nutrition and health issues. Nutrition and Health Education to the experimental group was imparted to the women during their Self Help Group meetings. Basic knowledge on nutrition and health through lectures, exhibition, demonstrations and leaflets was imparted to the women of the experimental group by the investigator through group contacts for a period of three months. The aspects covered for the education included:

- Foods rich in essential nutrients and their importance
- Significance of balanced diet and menu planning
- Causes of nutritional deficiencies
- Signs and symptoms and the effects of nutritional deficiencies
- Preventive measures – diagnosis, treatment, control measures and foods to be taken.

Using a specially designed questionnaire, the nutrition Knowledge, Attitude and Practices (KAP) of the women in Experimental and Control groups were assessed. For each question of Knowledge and Practice that was answered correctly, a score of one was awarded, whereas for the question that was answered wrongly or unanswered, a score of zero was given. A score of half was given when the answer was partly correct. For evaluation of the Attitudes of women, their favourable statements were scored three for agree, two for disagree and one for undecided. The specially designed questionnaire was administered to all the women before the nutrition education and after the nutrition education programme. Based on the results, the change in KAP of the women of both the groups were found out.

RESULTS AND DISCUSSION

The findings obtained from this study are presented and discussed under the following aspects

Demographic Profile of the SHG women

The socio-economic background of the selected SHG Women are presented in Table 1

Table 1. Demogrpahic profile of the SHG women

(No: 300)

Details	Number	Per cent
Educational Status		
Uneducated	25	8.3
Primary	60	20.0
Secondary	90	30.0
Higher Secondary	75	25.0
College	50	16.7
Total	300	100
Occupation		
Business	60	20
Private	90	30
Daily wages	150	50
Total	300	100
Monthly Family Income*		
< Rs.2100	80	26.7
Rs.2101 – 4500	110	36.7
Rs.4501 -7500	50	16.7
> Rs.7500	60	20.0
Total	300	100
Age (years)		
21-30	100	33.3
31-40	200	66.7
Total	300	100

* 11th Five year plan 2007 - 2012

Majority of the women (30%) were educated up to secondary school education, followed by 25 per cent studied up to higher secondary school and only 16.7 per cent studied up to college level. In spite of all Governmental efforts still eight per cent are uneducated. A maximum of 50 per cent SHG women were working on daily basis, whereas 30 per cent of the women were employed in private sectors. Only 20 per cent of women were involved in business. With regard to monthly income 36.7 per cent being the majority of women had Rs. 2101 to 4500 whereas 20 per cent had more than Rs.7500 per month. It is also seen that 26.7 per cent of women had a very low income of less than Rs. 2100 per month. Considering the age of the selected SHG women, it was seen that a majority (66.7%) belonged to 31-40 years category and the remaining (33.3%) were 21-30 years of age.

Type and Size of Families of SHG Women

Table 2 gives details regarding the type and size of families of SHG women.

Table 2. Type and size of families of SHG women

(N : 300)

Details	Number	Per cent
Type of Family		
Nuclear	190	63
Joint	110	37
Total	300	100
Family Size		
2 -4 members	150	50
5 – 7 members	40	13
Above 7 members	110	37
Total	300	100

The present day trend of more inclination towards nuclear families and declining joint families is also evident in the present study with 63 per cent being nuclear families and 37 per cent joint families. The size of families was 2-4 members among 50 per cent of families, whereas 37 per cent had large sized families with more than seven members. The common observation among the society in the present day is more of nuclear families with small family norms.

Monthly Food Expenditure Pattern

The monthly food expenditure pattern of the families studied is presented in Table 3. A maximum of 45 per cent of the families spent 30-50 per cent of their monthly food expenditure on cereals and 63 per cent of the families spent 10-20 per cent on pulses. With regard to Green Leafy Vegetables, a maximum of 48 per cent of families spent 1-2 per cent of their monthly income. Similarly 1-2 per cent of income was spent on other vegetables and fruits by a maximum of 42 and 33 per cent of families. Expenditure on nuts and oilseeds was found to be 10-20 per cent among 60 per cent of families. A majority of 60 and 65 per cent of families respectively spent less than 10 per cent on fleshy foods and milk and milk products. Expenditure on sugar and jaggery and beverages occupied 1-2 per cent among majority of families. Food expenditure pattern revealed that green leafy vegetables, other vegetables, fruits and milk and milk products were purchased less. These food groups need to be given greater importance since they are protective foods.

Table 3. Food expenditure pattern of the familes studied

(No:300)

Food	Percentage of food expenditure	Percentage of families
Cereals	<30	40
	30-50	45
	50-60	13
	>60	2
Pulses	<10	22
	10-20	63
	20-30	7
	>30	8
Green Leafy Vegetables	Nil	4
	<1	10
	1-2	48
	2-3	23
	>3	15
Other vegetables	Nil	17
	<1	12
	1-2	42
	2-3	22
	>3	7
Fruits	Nil	4
	<1	32
	1-2	33
	2-3	24
	>3	7
Nuts and Oils	Nil	10
	<10	20
	10-20	60
	20-30	10
Fleshy Foods	Nil	5
	<10	60
	10-20	30
	20-30	5
Milk and milk products	Nil	2
	<10	65
	10-20	30
	20-30	3
Sugar and Jaggery	Nil	-
	<1	30
	1-2	50
	2-3	20
Beverages	Nil	5
	<1	35
	1-2	60

Dietary Habits of the SHG Women

Of the 300 women studied, 95 per cent were non vegetarians and 60.4 per cent of the women planned their menu in advance to save time to go to work early. Only 3.6 per cent of the families possessed kitchen garden. Food pattern was modified for infants, weaning infants, preschoolers, pregnant and lactating mothers and old people. During infancy, cow's milk was the major food given by the mothers and they considered milk as essential for healthy living. Cereals were avoided, because they thought solid foods were difficult to chew. Weaning infants were given idli and rice, because they are easily digested, easily available and soft to eat. Egg was not included during the early stages of infancy since it was difficult to digest. Hot and spicy foods were avoided for preschoolers because they may cause irritation and stomach disturbances. During pregnancy, vegetables, egg and non vegetarian foods were given for general improvement of health. Foods avoided during pregnancy included papaya, pine apple and gingelly seeds, because these foods were believed to cause abortion by producing heat. Foods like garlic, greens, dry fish were given to lactating mothers to produce more milk and to prevent constipation. Senior people were mostly given rice and ragi porridge, because they are easy to consume and digestible. Crispy foods were avoided because they might be difficult to chew or bite. Adolescents had no restriction in food intake and they consumed all types of food. Non vegetarian foods, oily foods, ice cream, butter milk and cool drinks were avoided during fever for reasons such as indigestion and may increase body temperature. During diarrhoea, spicy foods were excluded as they may worsen the condition. Seasoned foods, spicy and salty foods were avoided during chicken pox, because they may cause vomiting and irritation of the gastro intestinal tract. Potato was considered to be a gas producing food. Certain foods like brinjal, yam, egg and dried fish were reported to cause skin diseases.

Food Intake

The mean food intake per day by the SHG women is given in Table 4

Table 4. Mean food intake of the selected SHG women

Foods	Suggested Intake (g) (ICMR, 2010)	Actual Intake (g)	Percentage deficit/excess
Cereals and millets	330	310	-6
Pulses	45	47	+4
Leafy vegetables	100	50	- 50
Other vegetables	200	75	-63
Roots and Tubers	200	80	-60
Fruits	100	60	-40
Milk and Milk products	300	200	-33
Fats and oil seeds	25	30	+20
Sugar and jaggery	30	22	-27

The intake of cereals was found to be deficit by 6 per cent. The intake of leafy vegetables, other vegetables, roots and tubers, fruits and milk and milk products were found to be deficit by 50, 63,60, 40 and 33 per cent respectively. Fat intake was found to be excess by 20 per cent. It is also observed that consumption of sugar and jaggery was found to be deficit by 27 per cent, a welcome observation. The consumption of pulses was found to be slightly high. In general, the intake of protective foods like vegetables, fruits, milk and milk products was found to be unsatisfactory, which may affect their nutritional status.

Nutrient Intake

The mean nutrient intake of the selected SHG women compared with ICMR (2010) is given in Table 5.

Table 5. Mean nutrient intake of the selected SHG women

Nutrients	Suggested Intake (g) (ICMR, 2010)	Actual Intake (g)	Percentage deficit/excess
Energy (kcal)	2230	2010	-27
Protein (g)	55	53	-12
Calcium (mg)	600	200	-67
Iron (mg)	21	10	-41
Beta carotene (mcg)	4800	1000	-79
Thiamine (mg)	1.1	1.6	+14
Riboflavin (mg)	1.3	1.8	+13
Niacin (mg)	14	16	-11
Vitamin C (mg)	40	22	-45
Folic acid	200	96	-52

The energy intake was found to be slightly inadequate by 27 per cent and protein by 12 per cent. It was observed that the intake of calcium, beta carotene, folic acid, vitamin C and iron were found to be highly deficient ranging from 41 to 79 per cent. Thiamine and riboflavin was found to be slightly in excess of Recommended Allowance. Inadequate intake of vegetables, fruits, milk and milk products might have brought these deficiencies in nutrients.

Anthropometric measurements of the SHG Women
a.Height and Weight

The mean height and weight of the SHG Women in comparison with ICMR (2010) norms is presented in Table 6

Table 6. Mean height and weight of the SHG women

(N: 300)

Parameters	ICMR (2010)	Mean±SD	Percentage of Deficit/Excess
Height (cm)	161.0	160.21± 6.14	-0.5
Weight (Kg)	56.1	70.2± 8.43	+25.1

The mean height of the SHG women was found to be 160.21 cm which was slightly less than the height of the Indian women suggested by ICMR (2010). The mean weight of the SHG women was found to be 70.2 kg which was greater than that of 56.1 kg suggested by ICMR (2010) and the percentage excess was found to be 25.1 per cent. The findings indicate that the selected SHG women were found to be obese, whereas height was found to be satisfactory.

Body Mass Index

The Body Mass Index of the SHG women categorized according to WHO (2004) is given in Table 7

Table 7. Body mass index of the SHG women

(N: 300)

Classification	BMI Class*	No	%
Underweight	<18.50	-	-
Normal range	18.50 – 24.99	30	10.0
Overweight	≥ 25.00	70	23.3
Pre-obese	25.00 – 29.99	60	20.0
Obese	≥ 30.00	80	26.7
Obese class I	30.00 – 34.99	40	13.3
Obese class II	35.00 – 39.99	20	6.7
Obese class III	≥40.00	-	-
Total		300	100

* WHO (2004)

Body Mass Index is a most effectively used indicator to describe the magnitude of nutritional status of population (Ismail, *et al*., 1995). The present study recorded the prevalence of overweight based on BMI to be 23.3 per cent. The prevalence of pre-obese, obese, obese class I and obese class II were found to be 20, 26.7, 13.3 and 6.7 per cent and have a total of 46.7 per cent revealing that nearly 50 per cent of women were found to be in the obese category, which is an alarming observation. There were no women in the underweight category and only 10 per cent of women were in the normal BMI class. According to the National Family Health Survey (NFHS,2005 - 2006), the percentage of married women aged 15–49 years who are overweight or obese increased from 11% in NFHS- 2 to 15% in NFHS-3.

Waist to Hip Ratio (WHR)

WHR is the ratio of circumference of the waist to that of the hips. It was determined by using a measuring tape to measure the circumference of hips at the widest part of buttocks and waist at the smaller circumference of natural waist, usually just above the belly button. The ratio was determined by dividing waist measurement by hip measurement and the health risk was determined thereafter compared with WHO (2008) is given in Table 8

Table 8. Waist to hip ratio of the SHG women

(N: 300)

Waist to Hip ratio*	No	Per cent
Normal (<0.8)	60	20
High (>0.8)	240	80

* WHO, 2008

In the present study 80 per cent of SHG women had more than 0.8 WHR which is very crucial and coincides with the state of obesity among the SHG women. In general anthropometric measurements among the SHG women revealed more of obesity and a higher WHR which has to be considered for nutrition education.

Clinical Assessment

Clinical signs and symptoms of the SHG women is presented in Table 9

It is evident from the findings of the present study that 40 per cent of the SHG women had good nutritional status. Edema, Joint pain, sleeping disturbances, Restlessness and worm infestation was reported by 55, 60,40, 50 and 25 per cent of the SHG women. Twenty four per cent of the SHG women had poor hair condition like brittle, lusterless and discoloured hair. Conjunctival xerosis, which is a well-known ocular manifestation of vitamin A deficiency, was seen among 20 per cent of the SHG women. Fifteen per cent of the SHG women had dim vision and only 5 per cent of the women was affected with Bitot's spot. Symptoms like fluorosis, chalky teeth, mottled and discoloured enamel, bleeding gums and paleness of tongue were found among 2, 4, 10, 42, 23 per cent of the women respectively.

Other clinical symptoms like skin rashes, roughness, allergy, boils, paleness of face, dryness of face, brittle nails and white spots on finger nails were also found among 5,15,4,2,44,42, 34, 18 per cent of women respectively. The changes in skin and hair can provide clues to the presence of an underlying vitamin deficiency. Thyroid enlargement was found among 5 per cent of the SHG women. Gastrointestinal problems like improper digestion, ulcer and worm infestation was found among 28, 16, 25 per cent of the women respectively. Symptoms like sleep disturbance, mental confusion, calf tenderness and restlessness were found to be a maximum of 40, 21, 40 , 50 per cent respectively.

Table 9. Clinical Signs of nutritional deficiency among the SHG women

(N: 300)

Clinical signs	No	Percentage of prevalence
Healthy and free from diseases	120	40
Hair		
Brittle	36	12
Lusterless	24	8
Discoloured	12	4
Ocular manifestations		
Conjuctival xerosis	60	20
Dim vision	45	15
Bitot's spot	15	5
Teeth		
Fluorosis	6	2
Chalky	12	4
Mottled and discoloured enamel	30	10
Gums		
Bleeding gums	126	42
Tongue		
Paleness of tongue	69	23
Skin		
Rashes	15	5
Roughness	45	15
Allergy	12	4
Boil	6	2
Face		
Pale	132	44
Dryness	126	42
Nails		
Brittle nails	102	34
White spots on nails	54	18
Thyroid gland		
Thyroid enlargement	15	5
goitre	3	1
Subcutaneous tissue		
Oedema	165	55
Joint pain	180	60
Muscle pain	84	28
Internal system		
Gastrointestinal		
Improper digestion	84	28
Ulcer	48	16
Worm infestation		**25**
Nervous system		
Sleep disturbances	120	40
Mental confusion	63	21
Calf tenderness	120	40
Restlessness		50

Blood Haemoglobin levels

Table 10 presents the details regarding the blood haemoglobin levels of the SHG women

Table 10. Haemoglobin levels of the SHG women

(N : 300)

Anaemic status	Hb levels*(gm %)	Number	Percent
Normal	> 12	36	12
Mild	10-12	60	20
Moderate	7-10	198	66
Severe	< 7	6	2
Mean Hb level of SHG women	10.0 ±0.9		
Total		300	100

* WHO, 1996

Haemoglobin level is the most commonly used indicator to detect anaemia at the field level. (Subadra Seshadri, 2001). Majority namely 66 per cent of the SHG women were suffering from moderate anaemia with haemoglobin levels of 7-10 g/dl. Only 12 per cent of the SHG women had normal haemoglobin levels. Mild anaemia was found among 20 per cent of women and severe anaemia was found among 2 per cent of women. The mean haemoglobin level of all the 300 SHG women was found to be 10g/dl which reveals the mild anaemic status.

Knowledge, Attitude and Practices of Self Help Group Women

The mean scores on Knowledge, Attitude and Practice of Self Help Group women before and after nutrition and health education is given in Table 11

Table 11 depicted that the gain in KAP scores were 7.71,4.05,3.67 with reference to knowledge, attitude and practices respectively among Experimental group. In case of control group, the gain in KAP scores were negligible i.e. 0.17,0.58 and 0.89 respectively. The nutritional knowledge scores of both experimental and control group women before nutrition education was similar as revealed by the low scores (4.37 and 4.85) among the groups. After Nutrition Education experimental group gained more scores in nutritional knowledge which was statistically significant at one per cent level.

The attitude scores of the experimental (4.11) and control groups (4.02) before nutrition education was only 4.11 and 4.02 respectively. Nutrition education improved the attitude scores to 8.16 and 4.60 respectively among experimental and control group. There is a statistically significant increase at one per cent level in attitude scores over control group. With regard to scores for nutrition practices, though similar scores were observed among experimental (3.57) and control group (3.23) before nutrition education, but after nutrition education to experimental group the scores increased by 3.67 which was significant at one per cent level. Control group showed no increase in scores and statistically not significant.

Conclusion

The present study is an effort to create awareness among the SHG women of Karamadai Block about the nutrition, health, deficiency diseases and its consequences. Lack of awareness on nutrition among women may be the reasons for malnutrition and deficiency diseases in the families. Nutrition and health education imparted to SHG women improved their knowledge, attitude and practices on nutrition and health. To sustain the awareness on nutrition and health among the people, such education programmes should be organized at a large scale with continuous monitoring.

Table 11. Mean knowledge, attitude and practice scores of self help group women before and after nutrition and health education

Maximum Score: 20

Details	Experimental group				Control group			
	Before	After	Gain in scores	T - values	Before	After	Gain in scores	T-values
Knowledge	4.37±2.06	12.08±1.85	7.71	34.10**	4.85±2.67	5.02±1.95	0.17	0.63^{NS}
Attitude	4.11±1.93	8.16±1.01	4.05	22.77**	4.02±1.85	4.60±1.25	0.58	3.18^{NS}
Practices	3.57±1.23	7.24±1.2	3.67	26.16**	3.23±1.02	4.12±1.31	0.89	6.57^{NS}

** Significant at 1 % level, NS – Not significant

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