Effectiveness of Group-Based Counseling on Health Status and Dietary Intake of Women and Their Children

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Abstract: _Introduction- Good nutrition is important for maintaining healthy growth and development. It is very essential to focus on women and child health as a healthy mother will give birth to a healthy child and a healthy child will develop into a productive citizen of the country._ _Objectives-The present study was undertaken to assess the effectiveness of Group-based counselling on the health status and dietary intake of the rural married women and their children._ _Methodology-A pre test- post test control group design was used. 120 subjects (women and their children) were selected randomly for the study._ _Results- The pre and post test results of the women and the children revealed that there was more increase in all the parameters among Experimental group as compared to Control group. The gain score results revealed that, though Group-based counselling was significantly effective in increasing the body mass index, haemoglobin and other nutrients intake but it was not effective in improving fat intake among the women. Among children, group-based counseling has positive effect in improving the weight of children belonging to 5 to 19 years whereas it was not significantly effective in improving the other parameters._ _Conclusion-The study emphasizes on primary level prevention ie: early identification of the problems, their referral and treatment which will help to improve the health status of women and their children which in turn will help to achieve our Millennium development goals. These types of community based programmes if continued for longer duration will definitely contribute to improve the health status of people._

Keywords: Group-based counselling, effectiveness, health status, dietary intake

1. Introduction

The World Health Organization defines health as a "state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity".

The term woman is used to refer to a female of at least fifteen years of age. The health of Indian women is intrinsically linked to their status in society(**Victoria A. et al 1998**).Research on Indian women's status has revealed that especially in rural areas the contributions of women towards their family are overlooked and they are always considered as an economic burden which in turn affects their health status (**Saha et al 2010**).

2. Review of Literature

The WHO Global Database on Anemia (2008) reported that, the globally it is estimated that 1620 million people are affected by anemia and prevalence of anemia for the general population is 24.8%.About 468 million women aged 15 to 49 years (30% of all women) are anemic, and at least half of this anemia is due to deficiency of iron.

Onis, M. de, Blossne, M. and Borghi, E. (2011) stated that, 1 in 4 of the world's children are stunted in developing countries.

Every third woman in India is undernourished (35.6 % with low Body Mass Index) and every second woman (15-49 years) is anemic (55.3%) (**Planning Commission ,2010**).

National Family Health Survey (2005-2006) states that nearly every second young child in India today is undernourished. seven out of every ten children under five years in India are anemic.

Gopalan, (2003) pointed out that good nutrition not only enables one to lead a socially and economically active life but it also it improves the quality of life as evidenced through enhanced nutritional status of the population groups. Researchers have proved that there is a link between fetal under nutrition and increased risks of impaired growth and chronic diseases and therefore it is very essential to prevent malnutrition at every stage of the life. The women often lack adequate knowledge of exactly what is needed nutritionally or precisely how to find out so, nutrition education and counselling is an important aspect to improve women's health.

Group-based counselling is an invaluable tool for self learning and experimenting with different ways of behaving. It is a form of therapy, which posits that people benefit from shared experiences. Usually, it's focused on a particular issue, contributions from other members are considered valuable since all in the group share similar issues.

3. Materials and Methods

A pre- test post-test control group design was adopted for the study. The study was conducted among 120 rural mothers and their children (120), randomly selected from two villages of Durg district (C.G). 60 mothers and their children(60) were belonging to Experimental group and 60 mothers and their children(60) in the Control group.

Permission and informed consent was taken from the higher authorities and subjects respectively. Health status parameters included height, weight, BMI, haemoglobin and dietary intake. Height and weight were measured using statndard techniques, Haemoglobin was measured by using Cyanmethaemoglobin method and dietary survey was conducted by using 24- hours dietary recall method as prescribed by ICMR. All the health status parameters were measured among the subjects before intervention. The intervention ie; Group-based counselling was conducted among rural women belonging to Experimental group. No intervention was imparted to control group. Post–test was conducted four months after the intervention for both the Experimental group and Control group.

The subjects(women) of Experimental group were educated and counselled regarding normal balanced diet, food groups, requirements of different nutrients, its sources and its importance in daily life, deficiency diseases caused by the inadequate consumption of these nutrients, meal frequency food hygiene, food preparation and cooking methods.

Low cost nutritious diet ie; paushtik khichari, paushtik roti, mint chutney, chewra mix, til ragi ladoo, rich in calories, protein , fat, iron, calcium and other nutrients were also conveyed to them. The protocol included nutrition education counselling that focused on locally available nutritious foods (emphasizing healthy foods rich in energy, protein, fat, iron, calcium vitamin c) as per "The dietary guidelines for Indians'' (National institute of nutrition, Hyderabad 2010) and Nutritious recipes for complementary feeding of infant and young children (food and nutritionboard2008). Intervention materials were tailored to low literacy needs and to the primarily local culture of the study participants.The session ended with discussions, solving queries and feedback. .

4. Results and Discussion

The pre and post test results of the women and the children revealed that there was more increase in all the parameters among Experimental group as compared to Control group. To find out the mean changes in health parameters of women and children belonging to Experimental group (received Group-based counselling) and Control group, **gain score** was calculated and compared with the help of **independent sample 't' test(Table 1).** A higher mean gain in **body mass index** was observed among the women belonging to Experimental group (**M=0.11**) as compared to women of Control group (**M=0.02**) **[t=3.11, p<.01).** Regarding biochemical estimation, a significantly higher mean gain scores in **haemoglobin levels** was observed among the women belonging to Experimental group (**M=0.83**) as compared to Control group (**M=0.11**) **[t=2.52, p<.01).** Mean gain in energy, carbohydrate, protein, iron, vitamin C and calcium intake of women belonging to Experimental group has increased significantly after 4 months of study duration as compared to women of control group from baseline scores at .01 level of statistical significance. No significant difference was observed in mean gain in fat intake of women belonging to Experimental group and Control group **{t=0.68, p>.05)** Thus it can be concluded that Group-based counselling was

not effective in significantly improving the fat intake of the women but it was effective in increasing the body mass index, haemoglobin and other nutrients intake.

Among the children, **(Table 2)** no statistically significant difference in mean gain scores for height measurement and haemoglobin level was observed between Experimental group and Control group when mean gain in height and haemoglobin was compared separately with each other. The calculated 't' values are statistically not significant also support these findings. Mean gain in weight among children of 2-5 years and >19 years belonging to Experimental group and Control Group did not show any significant difference **(t=1.49,p>.05) (t=0.84, p>.05)** resp. In contrast to this, significantly **higher mean gain in weight** was observed for **5-19 age** group children belonging to Experimental group **(M=0.38)** as compared to children of Control group **(M=0.10)** with same age group. **[t=8.41, p<.05).**

No statistically significant difference in mean gain scores in haemoglobin level was observed between Experimental group I and Control group when compared for 2-5 years, 5-19 years and >19 years age group was compared separately with each other. The calculated **t=1.24, t=0.80 and t=0.45** respectively which are statistically insignificant also support these findings.

Results indicate that overall mean gain score for Experimental group(children belonging to mothers attended group based counselling) and Control Group in terms of health status parameters i.e. height, weight and haemoglobin level did not differ significantly with each other in the age groups i.e. 2-5 yrs, 5-19 yrs and >19 yrs except that in age group 5-19 years where gain score on weight differ significantly between two groups. This reveals that group-based counseling has positive effect in improving the weight of children belonging to 5 to 19 years whereas it was not significantly effective in improving the other nutritional status parameters among the children belonging to this group.

Results depicted in (**Table 3**) indicate that the mean gain in energy intake of children belonging to Experimental group has increased significantly after 4 months of study duration as compared to children of control group in which mean gain in energy intake has decreased after 4 months of study period(t=7.49, p<.01). Similar findings were obtained in other parameters i.e. carbohydrate (t=5.19, p<.01and protein intake (t=6.60, p<.01).

Mean gain in intake of fat, iron and vitamin C was also significantly increased after 4 months of study period among children of Experimental group as compared to increase in control group from baseline scores at .01 level of statistical significance. The calculated t values of 4.72, 4.35, and 2.86 were significant at .01 level. No significant difference was observed in mean gain in calcium intake of children belonging to Experimental group and control group. {t=0.99. p>.05). Among the children belonging to Control Group, significant decrease in post test mean intake of energy, carbohydrate and protein was observed as compared to pre test mean intake of energy, carbohydrate and protein.

The findings of the present study can be supported by other studies.

Aloafe H, Zee J et al (2009) in their study narrated that, nutrition knowledge scores and mean intakes of various nutrients, including absorbable iron, dietary iron, and vitamin C, were higher significantly in the intervention group (p <.05) than in the control group after 26 weeks. Mean haemoglobin and serum ferritin values were also significantly higher in the intervention group than in the control group.

Moore Burley Jean et al (2007) assessed the effect of nutrition education programme on haemoglobin levels and nutritional status of adolescent girls. The findings of the study revealed that the weight and BMI of the girls increased significantly but there was no significant improvement in height and haemoglobin levels of these girls.

Vani Sethi, et al (2003) in their study revealed that, nutrition education imparted to the mothers for two months helped to increase the weight of their children whereas the length did not improve as length for age is an indicative of chronic malnutrition and a short term nutrition intervention is not sufficient to bring about positive change. In a study undertaken by Walsh et al (2002) in his study pointed out that, food aid nutrition intervention programme though it succeeded in improving the weight status of these children, it was unable to facilitate catch-up growth in stunted child.

Table 1: Comparison of gain scores on measures of health status parameters of married women of Experimental Group & Control Group.

Health Status Parameters	Groups	Mean	S.D	't'
1 Anthropometric				
Weight (kg)	Experimental Group (N=60)	0.11	0.15	0.66(NS)
	Control group (N=60)	0.06	0.61	
Body Mass Index (kg/m2)	Experimental Group (N=60)	0.11	0.21	3.11 **
	Control group (N=60)	0.02	0.05	
2. Biochemical Estimation				
Haemoglobin (g/dl)	Experimental Group (N=60)	0.83	1.20	2.52**
	Control group (N=60)	0.11	1.85	
3. Dietary Survey				
Energy (kcal/d)	Experimental Group (N=60)	201.25	154.20	3.59**
	Control group (N=60)	115.73	100.95	
Carbohydrate (g/day)	Experimental Group (N=60)	28.78	22.05	2.74**
	Control group (N=60)	18.84	17.28	
Protein (g/day)	Experimental Group (N=60)	10.73	10.62	7.20**
	Control group(N=60)	0.79	1.22	
Fat (g/ day)	Experimental Group	4.79	4.99	0.68(NS)
	Control group (N=60)	4.13	5.67	
Iron (mg/ day)	Experimental Group (N=60)	12.80	6.08	9.72**
	Control group (N=60)	4.18	3.16	
Vitamin C (mg/ day)	Experimental Group (N=60)	22.43	17.48	5.65**
	Control group (N=60)	7.41	10.84	
Calcium (mg/ day)	Experimental Group (N=60)	386.60	88.62	33.73**
	Control group (N=60)	0.64	1.04	

** Significant at .01 level; NS --Not Significant

Table 2

Health Status Parameters	Age Group (years)	Groups	Gain Score		
			MEAN	S.D	't'
1Anthropometric					
Height (cm)	2-5	Experimental Group (N=16)	0.68	0.55	1.61 (NS)
		Control group (N=16)	0.40	0.43	
	5-19	Experimental Group (N= 27)	0.66	0.66	0.18 (NS)
		Control group (N= 27)	0.62	0.79	
Weight (kg)	2-5	Experimental Group (N=16)	0.33	0.16	1.49 (NS)
		Control group (N=16)	0.22	0.24	
	5-19	Experimental Group (N= 27)	0.38	0.14	8.41 **
		Control group (N=27)	0.10	0.08	
	>19	Experimental Group (N=17)	0.16	0.15	0.84 (NS)
		Control group (N=17)	0.12	0.11	
Haemoglobin g/dl	2-5	Experimental Group (N=16)	0.31	0.28	1.24 (NS)
		Control group (N=16)	0.21	0.15	
	5-19	Experimental Group (N= 27)	0.05	0.10	0.80(NS)
		Control group (N=27)	0.07	0.10	
	>19	Experimental Group (N=17)	0.16	0.15	0.45(NS)
		Control group (N=17)	0.08	0.14	

Comparison of Gain Score on Measures of Health Status Parameters of Children (2-5), (5-19) And (>19) Years Belonging To Experimental Group And Control Group
** Significant at .01 level; NS --Not Significant

Table 3: Comparison of Gain Scores on Measures of Dietary intake (Dietary Survey) Between Children Belonging To Experimental Group &Control group

Dietary intake	GROUPS	MEAN	S.D	't'
. Dietary				
Energy kcal/d	Experimental Group	105.69	86.15	7.49**
	Control group	−75.82	166.6	
Carbohydrate g/d	Experimental Group	9.65	15.74	5.19**
	Control group	−20.00	41.36	
Protein g/d	Experimental Group	5.46	7.57	6.60**
	Control group	−1.51	3.08	
Fat g/d	Experimental Group	5.02	6.12	4.72**
	Control group	1.14	1.77	
Iron mg/d	Experimental Group	3.42	5.32	4.35**
	Control group	0.37	0.94	
Vitamin C mg/d	Experimental Group	1.81	3.19	2.86**
	Control group	0.28	2.60	
Calcium mg/d	Experimental Group	13.97	28.61	0.99 (NS)
	Control group	8.95	26.44	

**** Significant at .01 level; NS --Not Significant**

5. Conclusion

The study concluded that group-based counselling helps to improve the health status parameters of the women and children. These programmes if continued persistently for longer duration will definitely have significant changes in the health status. Such group-based counselling sessions helps to create awareness among the mothers and adolescent girls regarding the importance of nutrition which will improve the nutritional status of the entire society and all together will help to achieve our Millennium Development goals.

References

[1] Victoria A.Velkoff and Arjun Adlakha (1998).Women of the world. Women's health in india.International Programs Center December U.S. Department of Commerce Economics and Statistics Administration. BUREAU OF THE CENSUS. https://www.census.gov/.../wid-9803.pdf

[2] Saha UC, Saha KB. A trend in women's health in India – what has been achieved and what can be done. Rural and Remote Health .April-June;10(2) :1260. Epub. 2010 June 16. Available at ://www.rrh.org.au .,. ., www.ncbi.nlm.nih.gov/.

[3] De, Benoist, B., McLean, E., Egli, I., Cogswell,M.,(Eds) (2008).Worldwide prevalence of anemia 1993–2005: WHO global database on anemia. Geneva, World Health Organization, Retrieved from whqlibdoc.who.int/publications/2002/9241562072 .

[4] Onis, M. de. Blossne, M. and Borghi, E. (2011) 'Prevalence of stunting among pre-school children 1990-2020', Growth Assessment and Surveillance Unit. Public Health Nutrition, Jul (14), 1-7. Retrieved fromhttp://www.gainhealth.org/about-malnutrition/fastfacts on 14.9.14

[5] National Family Health Survey (NFHS-III), 2005-2006, http://www.nfhsindia.org/pdf/India.pdf.

[6] Addressing India's Nutrition Challenges, Report of the Multistakeholder Retreat Planning Commission Government of IndiaNew Delhi 7-8 August 2010.

[7] Gopalan, C. (2003).Women and nutrition in India. The Indian Journal of Nutrition and Dietetics, 36(4), 35-36.

[8] Nutritious Recipes For Complementary Feeding Of Infants And Young children. Food And Nutrition Board. Ministry Of Women And Child Development Government Of India(2008).

[9] Kamala Krishnaswamy, k. And Sesikeran, B. (2010) .Dietary guidelines for Indians, a national institute of nutrition, Hyderabad – 500 007, India Manual. 13-37.

[10] Alaofè H, Zee J, Dossa R, O'Brien HT (2009) .Education and improved iron intakes for treatment of mild iron-deficiency anemia in adolescent girls in southern Benin. Food Nutr Bull. 30(1):24-36.

[11] Jean Burley Moore, Lisa Renee Pawloski (2007). Impact of a Nutrition Intervention Program on Impact of a Nutrition Intervention Program on the Growth and Nutritional Status of Nicaraguan Adolescent Girls Coll. Antropol. 31 2: 403–411. Original scientific paper.

[12] Vani Sethi, Sushma Kashyap, and Veenu Seth (2003). Effect of Nutrition Education of Mothers on Infant Feeding Practices Indian Joumal of Pediatrics, Volume 70-June.

[13] Walsh CM, Walsh CM, Dannhauser A, Joubert G l (2002) The impact of a nutrition education programme on the anthropometric nutritional status of low-income children in South Africa. Public Health Nutr. Feb; 5(1):3-9.

[14] Victoria A.Velkoff and Arjun Adlakha (1998).Women of the world. Women's health in india . International Programs Center December U.S. Department of Commerce Economics and Statistics Administration. BUREAU OF THE CENSUS. https://www.census.gov/.../wid-9803.pdf.

[15] Saha UC, Saha KB. A trend in women's health in India – what has been achieved and what can be done. Rural and Remote Health . Apr-Jun;10 (2):1260. Epub 2010 Jun 16. Available: http://www.rrh.org.au ., www.ncbi.nlm.nih.gov/.

[16] Onis, M. de. Blossne, M. and Borghi, E. (2011) 'Prevalence of stunting among pre-school children 1990-2020', Growth Assessment and Surveillance Unit. Public Health Nutrition, Jul, (14), 1-7. Retrieved fromhttp://www.gainhealth.org/about-malnutrition/fastfacts on 14.9.14

[17] De, Benoist, B., McLean, E., Egli, I., Cogswell,M.,(Eds) (2008).Worldwide prevalence of anemia 1993–2005: WHO global database on anemia. Geneva, World Health Organization, Retrieved from whqlibdoc.who.int/publications/**2002**/9241562072 on 12.7.13.

[18] National Family Health Survey (NFHS-III), 2005-2006, http://www.nfhsindia.org/pdf/India.pdf.

[19] Addressing India's Nutrition Challenges, Report of the MultistakeholderRetreat Planning Commission Government of India, New Delhi 7-8 August 2010.