

IMPACT OF EDUCATION INTERVENTION ON NUTRITION KNOWLEDGE OF ADOLESCENT GIRLS

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ABSTRACT

Today, nutrition is more important than ever. Adolescents have a significant amount of knowledge regarding healthy foods and believe that healthy eating involves moderation, balance, and variety. Despite this knowledge, they feel difficult to follow healthy eating recommendations and frequently consume foods that they perceive as unhealthy. A study was conducted with the objective to assess the nutritional knowledge of school going rural adolescent girls (13 to 18 years). The study was conducted in the Mangrop village of Bhilwara district of Rajasthan. Data was collected using a developed questionnaire to assess the nutritional knowledge of the respondents. Questions on nutritional deficiency disorders were included in the tool. Findings revealed that their nutrition related knowledge was not up to the mark and a majority of them were not aware about nutritional deficiency disorders. Ignorance about micronutrients prevailed in adolescent girls. Therefore, there is a need to educate the rural adolescent girls regarding health and nutrition awareness, as they are future mothers.

KEYWORDS: Nutritional Deficiency Disorders, Micronutrients, Food, Adolescent Girls

INTRODUCTION

Nutrition is the basis of human development and resultant economic development. Absence of nutrition results in a situation of malnutrition. There are many factors which contribute to, aggravate and result in the conditions of malnutrition i.e. poverty, food availability, lack of care of the vulnerable group, education etc. Education plays a major role in combating malnutrition. Low educational level of the people affects their food intake. Especially, if mothers are educated and have even a basic knowledge of nutrition, health and hygiene it can go a long way in preventing the conditions of malnutrition (Sehgal and Raghuvanshi, 2004). Thus, there is a need to look into nutritional programmes targeting children, adolescents, pregnant and lactating women to make it more effective.

Schools provide a special medium for nutrition education and intervention to improve adolescent's health and nutritional status. The basic aim is to help children acquire nutrition knowledge and to develop and encourage desirable eating habits and food choices. Adolescents can also help change the eating habits of their families by demanding desirable food, and when they themselves become parents in the future, they can impart good dietary habits to their children. Therefore, a common maxim about how to bring about a real change in dietary habits is "Go to school." With the Right To Education Act, 2009 coming into force with effect from 1st April 2010, and the SSA Framework of Implementation being revised to correspond to the Right to Education (RTE Act), the KGBV component of SSA would also be implemented in

the overall context of child rights and child entitlements and in harmony with the spirit and stipulations of the Act. The objective of KGBV is to ensure access and quality education to the girls of disadvantaged groups of society by setting up residential schools with boarding facilities at the elementary level. The Kasturba Gandhi Balika Vidyalaya (KGBV) scheme was launched by the Government of India in August, 2004 for setting up residential schools at upper primary level for girls belonging predominantly to the SC, ST, OBC and minorities in difficult areas (SSA components KGBV 2007). To strengthen any nation, there is a need for healthy mothers. Nutritional awareness is important today in India, many young girls and women are malnourished and anaemic (Sharma and Chawla, 2005). Due to lack of accurate information and proper guidance, adolescents are prone to various nutritional morbidities. Only healthy mothers can produce healthy citizens (Eelizabeth, 2000). They do not have proper knowledge about their nutritional requirement; inadequate knowledge may cause various health problems. This can be achieved by providing information on the relationship between diet and health; the relationship between nutrition and health status and the nutritional needs of the population and of individuals; the causes and consequences of nutritional disorders (FAO, 1997). Every adolescent girl must be protected against under nutrition and nutritional deficiencies like anaemia through dietary counselling, weekly iron and folic acid supplementation and twice yearly de-worming prophylaxis (UNICEF, 2003). Health is a fundamental human right and health is central to the concept of quality of life (Bashir, 2013). All animals, including humans, have to eat and drink. Food gives us energy and the nutrients that our bodies need to grow and to be healthy. Understanding the link between the food that you put in your mouth and how it affects your body is very important for a happy and healthy life. So the present study conducted an object to assess impact of nutrition education programme on nutritional knowledge of adolescent girls.

METHODOLOGY

Locale and Sample of Study

For the present study, 50 adolescent girls between the ages of 13-18 years of KGBV, Mangrop, and Bhilwara district of Rajasthan were selected. KGBV was selected purposefully because these schools are residential and thus are easily approachable.

Selection of Different Aspects of Nutritional Deficiency Disease

Different aspects of nutritional deficiency diseases were selected after an extensive review of literature relevant and available on nutrition like a school text book. The following aspects of nutrition were finalized for imparting information to rural adolescent girls.

Macro Nutrients Deficiency Disorder

- Undernutrition and obesity
- Protein Energy Malnutrition (PEM)

Micro Nutrients Deficiency Disorders

- Vitamin A deficiency disorder (VAD)
- Vitamin B complex, vitamin C and vitamin D
- Iodine deficiency disorder (IDD)
- Anemia

Knowledge about Causes of Acne and Pimples

Development of research tool

A structured tool was developed to assess nutritional knowledge of adolescent girls enrolled in KGBV. Questionnaire technique was selected for this purpose. The tool contained two sections. In first section, information related to the general profile of the respondents i.e Name, father's name, address, age, class, religion, caste, and father's occupation, type of family, food habits and monthly income of family were added. Section second had questions pertaining to their nutritional knowledge.

Development of Information Package

An information package was developed using selected messages and for this, in depth content was collected from the relevant and available literature. For each selected aspect flash card, slides, posters and games were developed. The content was delivered through lecture supplemented with audio visual aids in the form of videos, charts, flashcard, folders and slides.

Delivering of Nutrition Education Package

In present study nutrition education package was delivered to the target group by the investigator who visited the school at least twice in a week for six weeks continuously. Various education methods, namely lecturette, storytelling, nutritional songs, poems and videos were used according to the package developed for the purpose.

Procedure for Data Collection

The knowledge test was administered twice, i.e. before the delivery of training to know the initial knowledge and after 15 ± 2 days of completion of the training to find out retention of knowledge.

Analysis of Data

After collecting data, it is necessary to analyze it with the help of statistics to arrive at a proper and adequate conclusion. Frequency and percentage, Mean Per cent Score (MPS) and paired 't' test were used to analyzed data.

RESULTS

General Background Information

All the respondents (100%) were belonging to a Hindu family. The majority of respondents (64%) were from other backward caste (OBC) and 32 per cent were from schedule caste. Sixty four per cent adolescent girls had joint type of family structure. The majority (92%) of them were vegetarian. Only 4 per cent were from ovo vegetarian. Their main family occupation was business, farming and labourer work. Sixty per cent of respondents had ₹ 5000-10000 as their monthly family income.

Knowledge of Respondents Regarding Nutritional Deficiency Disorders

Macro Nutrients Deficiency Disorder

Under Nutrition and Obesity

The data in Table 1 indicate that at baseline, 30-34 per cent respondents had knowledge about the effect of under nutrition on the body and excess of nutrients which lead to obesity. After the nutritional intervention most of the respondents (62-74%) reported about the effect of under nutrition on body, i.e. risk of infection and infectious disorders,

growth retardation, low working capacity, nutritional deficiency disorders etc. and excess of nutrients which lead to obesity i.e. fat, calorie and carbohydrate.

Protein Energy Malnutrition (PEM)

It was depicted that knowledge regarding symptoms of protein energy malnutrition i.e. growth retardation, hyperkeratosis, stunting and wasting was only 10-26 per cent at initial stage. After NEP, it increased up to 54-66 per cent.

Micro Nutrients Deficiency Disorders

Micronutrient deficiencies such as vitamin A deficiency, iron deficiency anaemia and iodine deficiency disorders have been major nutritional problems in developing countries, adversely affecting people's health, performance and income and thereby becoming major impediments to economic development (Arlappaet *al.* 2011). Therefore, there is a need to initiate sustainable long term nutrition intervention such as nutrition education programme, oral intervention for prevention and control of micronutrient deficiency disorders.

Vitamin A Deficiency Disorder (VAD)

VAD, which can cause growth retardation and impaired vision, remains a significant public health issue among populations that do not consume enough vitamin A, which is found in animal products and certain fruits, including mangoes (Elizabeth, 2003). Table 2 further reveals that 24-32 per cent of respondents had knowledge about vitamin A deficiency disorder, but after the NEP majority of respondents (64-72%) showed their knowledge about vitamin A deficiency disorder.

Vitamin B Complex, Vitamin C and Vitamin D

Knowledge of respondents about deficiency symptoms of vitamin B complex, vitamin C and vitamin D were very low (16-30%) at the initial stage. After providing nutrition education through power point presentation it increased up to 52-80%. The reason in increased knowledge may be because during the programme posters, pictures, presentations, etc. were used for providing education.

Iodine Deficiency Disorder (IDD)

Iodine Deficiency Disorders are one of the biggest worldwide public health problems of today. Twenty six per cent of the respondents showed knowledge regarding IDD at initial stage. After imparting nutrition education, knowledge of respondents about this aspect increased. The retention in gaining knowledge was 74 per cent.

Anemia

Anaemia is a condition in which the blood fails to supply the body tissue with sufficient amount of oxygen. This is either due to the lack of red blood cells or haemoglobin. In the absence of proper knowledge, care and diet, girl suffers from a deficiency of iron or anaemia which is not good for the rest of the life of an adolescent girl (Gupta, 2011). Therefore, nutritional awareness related to anaemia should be given priority in schools to have healthy adolescents. Data in Table 1 reports that at baseline only 16 per cent of respondents showed their knowledge regarding anaemia. The majority of respondents (84%) were not aware about anaemia. Knowledge about deficiency symptoms of iron at initial stage was 14-26 per cent, which increased up to 22-98 percent after NEP. After imparting nutrition education 70 per cent girls mentioned about anaemia. A study conducted by Kaur and Singh (2009), on rural women revealed that the

knowledge regarding signs, symptoms and method of anaemia prevention were significantly higher in the intervention group compared to control group after providing nutrition education.

Knowledge about Causes of Acne and Pimples

Acne vulgaris is the most common, chronic inflammatory disease of the skin, affecting adolescents. Table 2 reveals that at baseline the knowledge regarding the causes of acne, pimples and pigmentation was 56 percent in adolescent girls. At base line majority of girls were aware about acne and pimples because many adolescent girls are suffering from this due to hormonal changes at this stage and poor dietary sources. After imparting nutrition education, knowledge regarding acne and pimples increased up to 84 per cent. Increase in knowledge may be because, adolescent girls are more conscious about skin problems. Study by Koch *et al.* (2008), revealed that both written handouts and audio-visual computerized presentations about acne vulgaris confer significant and equivalent benefits in terms of short- and long-term knowledge gains among adolescent patients with acne.

CONCLUSIONS

From the findings of the present study, it can be concluded that, the overall knowledge of girls in general, about nutritional deficiency diseases was marginally on an average side. They had very low knowledge about the aspects, nutritional deficiency disorders. But, after imparting nutrition education tremendous improvement was observed in the knowledge of respondents, as they gained knowledge in all the aspects of nutrition. This indicates that the nutrition education programme was effective in creating awareness in rural adolescent girls; hence retention in gaining knowledge was desirable.

REFERENCES

1. Arlappa, N., Laxmaiah, A., Balakrishna, N., Harikumar, R., Kodavanti, R. M., Reddy, C., Saradkumar, S., Ravindranath, M. and Brahmam, G. N. V. 2011. Micronutrient deficiency disorders among the rural children of West Bengal, India. *Annals of Human Biology*.38: 281–89.
2. Bashir, R. 2013. Prevalence of iron deficiency anaemia among adolescent girls and impact of health and nutrition education programme in changing their dietary behaviour. Dissertation submitted to the University of Kashmir.
3. Eelizabeth, B. M. 2000. *Developmental psychology: a life span approach*. 5th Edn Tata McGraw Hill.
4. Elizabeth, Ransom, I. and Elder, L. K. 2003. *Nutrition of women and adolescent girls: why it matters*. Population Reference Bureau. Cited from: <http://www.prb.org/Publications/Articles/2003/NutritionofWomenandAdolescentGirlsWhyItMatters.aspx> Retrieved on: 20-10-2013.
5. FAO, Corporate Document Repository. 1997. *Agriculture, food and nutrition for Africa: a resource book for teachers of agriculture*. Cited from: <http://www.fao.org/docrep/W0078E/W0078E00.htm> 25-10-2013 Retrieved on: 20-10-2013.
6. Gupta, S. 2011. *Development Missionary's Voice*. Cited from: <http://shantitda.wordpress.com/?s=Anaemia%3A+An+Exterminate+for+Adolescent+Girls> Retrieved on: 25-10-2013
7. Kaur, M. and Singh, K. 2009. Effect of health education on knowledge, attitude and practices about anemia among rural women in Chandigarh. *Indian Journal of Community Medicine*. 26: 3-8.

8. Koch, P. E., Ryder, H. F, Dziura, J., Njike, V. and Antaya, R. J. 2007. Educating adolescents about acne vulgaris: a comparison of written handouts with audiovisual computerized presentations. US National Library of Medicine, National Institutes of Health. 142: 208-14.
9. SarvaShiksha Abhiyan (SSA). 2007. Ministry of Human Resource Development. Department of School Education & Literacy, Govt. of India. Cited from: <http://ssa.nic.in/girls-education/kasturba-gandhi-balika-vidyalaya/guidelines-for-implementation-of-kgbv-scheme> Retrieved on: 15th March, 2013
10. Sehgal, S. and Raghuvanshi, R. S. 2004. Text book of community nutrition.
11. Sharma, S. and Chawla, P. K. 2005. Impact of nutrition counselling on anthropometric and biochemical parameters of school girls 7-9 years. Anthropologist. 7: 121-25
12. Unicef, 2003. Nutrition. Cited from: <http://www.unicef.org/india/nutrition.html> Retrieved on 25th October, 2013.

APPENDICES

Table 1: Distribution of Respondents about their Knowledge on Nutritional Deficiency Disorders N=50

| S. No. | Items | Pre Test | | Post Test | |
|-----------|---|----------|----|-----------|----|
| | | F | % | F | % |
| 1. | Knowledge About Nutritional Deficiency Disorders | | | | |
| a. | Effect of Under Nutrition on Body | 17 | 34 | 31 | 62 |
| b. | Excess of Nutrients Which Lead To Obesity | 15 | 30 | 37 | 74 |
| 2. | Protein Energy Malnutrition Symptoms | | | | |
| a. | Growth Retardation | 5 | 10 | 29 | 58 |
| b. | Hyper Keratosis, Hyper Pigmentation and Flag Sign | 7 | 14 | 33 | 66 |
| c. | Stunting, Wasting and Fatty Infiltration of Liver | 13 | 26 | 27 | 54 |
| 3. | Vitamin A Deficiency Symptoms | | | | |
| a. | Night Blindness, Inability To See | 16 | 32 | 36 | 72 |
| b. | Bitot's Spots | 12 | 24 | 32 | 64 |
| 4. | Deficiency Symptoms of Vitamin B Complex, Vitamin C or Vitamin D | | | | |
| a. | Weakness in Muscle and Low Working Capacity | 14 | 28 | 40 | 80 |
| b. | Angular Stomatitis, Cheilosis and Magenta Tongue | 12 | 24 | 33 | 66 |
| c. | Spongy Bleeding Gums and Wounds Fail To Heal | 15 | 30 | 26 | 52 |
| d. | Rickets | 13 | 26 | 29 | 58 |
| 5. | Deficiency Symptoms of Iodine | | | | |
| a. | Goitre and Mental Retardation | 13 | 26 | 37 | 74 |
| 6. | Knowledge About Anaemia | 8 | 16 | 35 | 70 |
| 7. | Deficiency Symptoms of Iron | | | | |
| a. | Paleness Of Skin and Conjunctiva | 10 | 20 | 32 | 64 |
| b. | Anorexia | 9 | 18 | 38 | 76 |
| c. | Irritability | 11 | 22 | 11 | 22 |
| d. | General Fatigue and Lassitude | 10 | 20 | 40 | 80 |
| e. | Headache | 7 | 14 | 45 | 90 |
| f. | Spoon Shaped Nail Shaped | 10 | 20 | 49 | 98 |
| 8. | Causes of Acne and Pimples in Adolescent | 28 | 56 | 42 | 84 |

Table 2: Overall Nutritional Knowledge (MPS) of the Respondents during Pre and Post-Test N=50

| Aspect | Pre Test | | | | | | MPS | Post Test | | | | | | Gain (%) | T-Values | |
|----------------------------------|----------|----|--------|----|------|---|-------|-----------|---|--------|----|------|----|----------|----------|--------|
| | Low | | Medium | | High | | | Low | | Medium | | High | | | | MPS |
| | f | % | f | % | f | % | | f | % | f | % | f | % | | | |
| Nutritional deficiency disorders | 39 | 78 | 11 | 22 | 0 | 0 | 24.48 | 0 | 0 | 14 | 28 | 36 | 72 | 68.96 | 44.48 | 20.28* |

* Significant at 0.5 per