Nutri Garden: A Road Map for Enhancing the Health Status of Girl Children

Rekha Tiwari and D S Tomar

Krishi Vigyan Kendra, (RVSKVV), Ujjain (Madhya Pradesh)

ABSTRACT

The nutrition is a burning issue in India which leads to malnourished problem in girl children and paramount anemic patients can be seen in the rural area. There are several reasons like lack of knowledge, economic problem and lack of education with regard to balanced diet. The study was undertaken by the KVK, Ujjain in collaboration with the ICDS and allied departments. A total of six villages were selected from 6 blocks of Ujjain District. Only severe malnourished girl children were identified from these villages and thus 16 families could be identified. Vegetable seed kits were provided to these families along with the scientific layout of nutri-garden. The physical parameter age, height and weight were also calculated for enhancing the health status of the girl child in rural area. The impact of the KVK activities was assessed in terms of before and after intervention followed by the per cent change in malnutrition by calculating BMI.

Keyword

INTRODUCTION

Health and nutrition are the most important contributory factor for human resource development in the country. Nutrients which obtained through food have vital effects on physical growth and development, maintenance of normal body function, physical activity and health (Krishnaswamy, 2011). Human needs a wide range of nutrients to perform various functions in the body and to lead a healthy life. The nutrient includes protein, fat, carbohydrates, vitamins and minerals but still the vegetable cultivation was not in habit of the farm families. Limbu (2019) observed that imparting nutritional education had a positive effect on knowledge level of the farm women. Utilizing methods like frontline demonstration, field day, method demonstration along with lectures for imparting trainings could have resulted in significant improvement of knowledge. Nath *et al* (2020) also revealed that Government should take necessary steps to reduce the problems faced by farmwomen to boost the production and productivity in vegetable farming. It was also evident that because of unawareness of nutrients and consumption of vegetables in daily diet of rural people specially girl children, face the malnutrition problem. Hence, a study was conducted by KVK, Ujjain for minimizing the malnutrition problem and to assess the physical parameters of girl child to overcome the nutrient deficiency problem and enhance the health status. A new concept of Nutri Garden was given in villages along with the detail technology of cultivation of vegetables at household level.

MATERIALS AND METHODS

A special targeted survey was conducted in collaboration with staff working under Integrated Child Development Scheme (ICDS) and allied departments. All six block were visited and identified one village from each block. The selected villages were Kalyanpura, Ratnakhedi Kalesar Kanchankhedi Pitlwadiya and Kalapiapl from block Ujjain, Tarana, Ghattiya, Khachrod, Badnagar and Mahidpur, respectively to collect the mal nutrition data.

Corresponding Author's Email: rekhaup_2007@rediffmail.com

Table 1. Detail of selected group for the study as per the Malnutrition category.

Block	Village	Malnourished Girl Children	Percentage	Remark
Ujjain	Kalyanpura	04	25.00	Yellow Category
Tarana	Ratnakhedi	01	06.25	Red Category
Ghattiya	Kalesar	03	18.75	Red Category
Khachrod	Kanchankhedi	03	18.75	Red Category
Badnagar	Pitlwadiya	03	18.75	Red Category
Mahidpu	Kalapiapl	02	12.50	Red Category

Three categories were made for identification of the health status of children *viz.,* red, yellow and green colour. Red colour indicated sever problem of malnutrition, yellow colour for moderate health status and green colour pointed out the good health of the children. Targeted total 16 girl children were identified and selected as per sever and moderate category for the further study who were less than 5 yr.

Physical Parameter

Physical parameters were calculated in terms of age (yr), weight (kg), height (cm). Body Mass Index (BMI) was calculated by using height and weight of the respondent. Vegetable seed kits containing leafy vegetables, climbers, roots and tubers, beans and fruits type vegetables viz. brinjal, chilly and tomato etc were provided to the participants. A systematic layout of the nutri garden with a total area of 100 m² with a bed size of 1.5m X 5 m was laid out.

The impact in terms of minimizing the malnutrition problem was assessed before and after consumption of the vegetables in daily diet by calculating the BMI (Body Mass Index) by using following formula
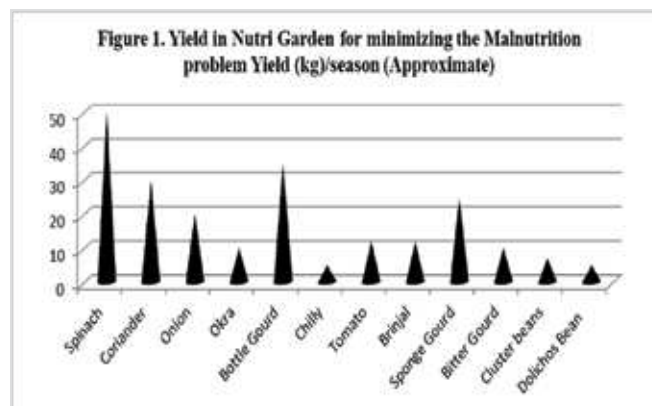
$$BMI= \frac{Weight\ (kg)}{Height\ ^2(cm)}$$

RESULTS AND DISCUSSION

Total six villages were selected namely Kalyanpura, Ratnakhedi, Kalesar, Kanchankhedi, Pitlawdiya and Kalapipal from each block of Ujjain District covering 16 sample size for the study. The selected girl children fell under two category of malnutrition (Table 1).

In the normal daily consumption practice of meal in rural families was pulses, Bengal gram flour, pickle and negligible amount of vegetable. It was evident that production of spinach, bottle gourd, coriander and sponge gourd was abundant while okra, chilly and bean were cultivated minimally.

Figure 1. Yield in Nutri Garden for minimizing the Malnutrition problem Yield (kg)/season (Approximate)

Emphasis was given on vitamins because at rural area the diseases and symptoms were very common related to deficiency of vitamins. The vegetables were good source of almost vitamins like carotene, thiamin riboflavin and niacin. The ascorbic acid (Vit. C) was completely absent in farmers routine daily diet whereas ascorbic acid is essential vitamin for protein digestion and helps in formation of hemoglobin. Spinach and Corinder were reach source of Carotene chilly, spinach and bitter gourd were the richest source of ascorbic acid (Longvah *et al, 2017*).

Table 2. Nutrient contents in vegetables /100g.

Vegetable	Nutrients / 100 g. β carotene				
	Vit A (µg)	Vit C (mg)	Vit. B1 (mg)	Vit. B2 (mg)	Vit. B3 (mg)
	Carotene	Ascorbic acid	Thiamine	Riboflavin	Niacin
Spinach	2605 ± 521	30.28 ± 4.71	0.16 ± 0.016	0.10 ± 0.009	0.33 ± 0.03
Coriander	3808 ± 891	23.87 ± 11.67	0.09 ± 0.005	0.05 ± 0.004	0.73 ± 0.03
Onion	1.10 ± 0.06	10.96 ± 2.00	0.07 ± 0.012	0.02 ± 0.004	0.21 ± 0.01
Okra	69.10 ± 10.41	22.51 ± 1.60	0.04 ± 0.005	0.07 ± 0.009	0.61 ± 0.01
Bottle Gourd.	44.05 ± 11.68	04.33 ± 1.55	0.03 ± 0.003	0.01± 0.001	0.14 ± 0.01
Chilly	125 ± 122	94.07 ± 11.67	0.09 ± 0.033	0.1 ± 0.038	0.89 ± 0.15
Tomato	905 ± 58.4	00.03 ± 0.004	0.03 ± 0.004	0.52 ± 0.01	27.47 ± 1.77
Brinjal	146 ± 24.0	02.09 ± 0.85	0.06 ± 0.016	0.11 ± 0.011	0.53 ± 0.08
Sponge Gourd	130 ± 00	3.80 ± 00	0.03 ± 00	0.01 ± 00	0.04 ± 00
Bitter Gourd	126 ± 7.10	50.87 ± 3.03	0.06 ± 0.008	0.04 ± 0.005	0.29 ± 0.03
Cluster Bean	241 ± 32.8	17.96 ± 5.83	0.05 ± 0.006	0.03 ± 0.005	0.71 ± 0.05
Walore	35.52 ± 6.0	5.99 ± 00	0.07 ± 00	0.07 ± 00	0.32 ± 00
FP (Farmers' Practice)					
Red Gram Pulse	127 ± 26.3	00	0.45 ± 0.046	0.11 ± 0.006	2.09 ± 0.14
Bengal Gram flour	165 ± 22.8	00	0.35± 0.029	0.15 ± 0.003	1.87 ± 0.06

The results revealed that there was a slight positive growth in height and weight after consumption of vegetable in daily diet. BMI totally depends on height and weight, as these two parameters increase, BMI also increases. Before consumption of vegetables BMI was 12.23 ±1.86 whereas after one year it was 13.07 ± 0.89.

CONCLUSION

The study showed that daily consumption of vegetables in daily diet enhanced the health status and help in minimizing the malnutrition problem to maximum extend. Nutri Garden which contents all types of vegetables can play a vital role especially in rural area where consumption of vegetable is not in practice, hence for habituating them for incorporating vegetables in their daily diet, Nutri Garden is excellent weapon. It could be a cheapest source for rural people specially girl children for overcome the malnutrition problem.

Table 3. Physical Parameters of Selected respondents with respect to age, height and weight.

Parameter	Before			After		
	Mean ± SD	Minimum	Maximum	Mean ± SD	Minimum	Maximum
Age (yr)	4.37 ± 0.44	3.8	5.0	05.37 ± 0.44	4.8	6.0
Height (cm)	98.21 ± 6.82	88	107	103.07 ± 6.68	91	112
Weight (kg)	11.44 ±1.55	9.5	14.2	13.88 ± 1.52	10.8	15.5
BMI	12.23 +1.86	10.85	17.16	13.07 + 0.89	11.55	14.80

REFERENCES

Anonymous (2016.) *Report* of ICDS (Integrated Child Development Scheme), Ujjain.1-   98

Krishnaswamy K (2011). *Dietary Guidelines for Indians-A manual*. National Institute of Nutition, Indian Council of Medical Research, Hyderabad. 1-123

Longwah t, Ananthan r, Bhaskracharya K and Venkalah K (2017). Indian Food Composition Tables. *National Institute of Nutrition (Indian Council of Medical   Research), Dept. of Health Research,* GOI, Hyderabad.1-535.

Limbu Rashmi, Arya Manisha and Ankita (2019). Effect of Nutrition Education on Knowledge Level of Farm women. *J Krishi Vigyan* **8** (1) : 92-95

Nath Sujit K, Muna Sagarika, Swastika Sadhna and Soren Laba (2020). Constraints Encountered in Vegetable Cultivation by Farmwomen of Odisha: An Empirical study. *J Krishi Vigyan* **8** (2) : 35-39