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Opinion about Kitchen Garden and Nutritional Knowledge of Vegetables in the Diet among the Gardeners in Dharwad District of Karnataka

Pooja Halyal* and Geeta Tamgale

*Department of Extension and Communication Management, College of Community Science,
University of Agricultural Sciences, Dharwad, Karnataka, India*

**Corresponding author*

ABSTRACT

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Vegetables constitute an important component of the human diet. They are recognized as health food globally and play an important role in overcoming micronutrient deficiencies and providing good health. They are natural sources of vitamins and minerals, like calcium, phosphorus, iron, carbohydrates and proteins. These nutrients are necessary for growth and build resistance against diseases and one of the way to get vegetables is by kitchen garden. Kitchen garden is a healthy activity which improves the nutritional status of the family as vegetables produced in the garden are consumed by household members. Kitchen garden can be described as a mixed cropping system that encompasses vegetables, fruits, plantation crops, spices, herbs, ornamental, medicinal plants as well as livestock that can serve as a supplementary source of food and income. The present study was conducted in Hubli and Dharwad taluks of Dharwad district during 2019-20. Snowball sampling technique was used to select 60 respondents. Of these 45 were urban and 15 were rural. The data was collected through personal interview method and analysed with suitable statistical tests. The findings of the study revealed that, large majority of both (rural 93.33 %, urban 84.44 %) the respondents had favourable opinion towards kitchen gardening. None of the respondents (rural & urban) are found in less favourable opinion category. With respect to knowledge, most (93.33 %) of the rural respondents had medium knowledge. Whereas, 53.33 per cent of the urban respondents had medium level of knowledge and 46.67 per cent of them had high level of nutritional knowledge. None of them fall under low level category of knowledge. The kitchen garden could be an effective motivational tool that could mitigate the problem of malnutrition. Hence the present study was conducted to study the opinion and nutritional knowledge of vegetables in the diet among the gardeners.

Introduction

Fruits and vegetables play an important role in the human diet and are considered in dietary guidance because of high concentrations of dietary fibre, vitamins,

minerals, especially electrolytes & antioxidants. Studies have shown that daily consumption of fruits and vegetables could help to prevent major diseases such as cardiovascular diseases and certain types of cancer. Insufficient consumption of fruits and

vegetables was among the major risk factors recognised as contributing to the worldwide non-communicable disease. Experts recommend 400 g of fruits and vegetables per day (excluding potatoes and other starchy tubers) for the prevention of chronic diseases of the heart, cancer, diabetes and obesity, as well as for the prevention and alleviation of several micronutrient deficiencies. As fruits and vegetables are the major source of micro nutrients for the body, they play a key role in nutritional security of human beings. "Nutrition Security implies physical, economic and social access to balanced diet, clean drinking water, safe environment and health care". Some of the mentionable obstacles for nutritional security in India are ignorance about proper weaning foods, unhealthy dietary habits and poor intake of fruits & vegetables. Despite the abundant production of fruits & vegetables in the country, many a common man cannot access them. They are getting out of reach of majority of Indian population because of the increasing prices. Lack of these fruits and vegetables in the diet is the major cause for high malnutrition rates in the country. For healthy and balanced diet consumption of five portion of fruits and vegetables per day is recommended. A large majority of Indians are vegetarian either because of cultural practices or due to high cost of non-vegetarian food. Therefore, vegetables play an important role both for the nutritive value and palatability. They provide taste, better digestibility and increases appetite. One of the best way to meet out the family needs is to grow one's own fruits and vegetables at the household level.

Kitchen garden or home garden is one of the ancient food production system and is commonly practiced throughout the world. Most of the horticulture professionals believe that ancient housewives started cultivating the homestead land in a systematic way in order

to meet out the food requirements of the family. Since early times it has been a practice to grow a variety of vegetables on a small plot near to the house. Fruits and vegetables were being grown according to the season and to cater domestic needs. Kitchen garden is generally defined as growing of fruits and vegetables in terrace or backyard of the house to satisfy the purpose of household. Some of the terms used for kitchen garden are; nutrition garden, backyard garden, rooftop garden and homestead garden. Kitchen garden can be described as a mixed cropping system that encompasses vegetables, fruits, plantation crops, spices, herbs, ornamental, medicinal plants as well as livestock that can serve as a supplementary source of food and income. Hence the present study was conducted on opinion about kitchen garden and nutritional knowledge of vegetables in the diet among the gardeners.

Materials and Methods

The study was undertaken during 2019-20. The study was conducted in Dharwad and Hubli taluks of Dharwad district of Northern Karnataka. Respondents from rural and urban areas of both taluks were selected by snowball sampling technique. The total sample size was 60 gardeners. Of these 15 were rural and 45 were urban. A well-structured and pre-tested interview schedule was used to collect the data. Data were collected by face-to-face interview with the help of interview schedule. The data was analysed with suitable statistical tools.

Results and Discussion

Opinion about kitchen gardening

Table 1 discloses the information about opinion of the respondents about kitchen gardening. All the rural respondents (100.00%) strongly agreed to the statement

that 'Kitchen garden provides safe food to the family' followed by the statement 'Vegetables from kitchen garden are fresh and healthy' (93.33%). The rural gardeners strongly agreed to the statement 'Kitchen gardening increases physical activity & exercise' (87.50%). Very few per cent (6.67%) of them strongly disagreed to the fact that 'Kitchen garden will help to start a small business at home'.

In case of urban respondents, cent per cent of the respondents strongly agreed that kitchen garden provides safe food to the family followed by kitchen garden helps the family members to get a higher share of vegetables (97.78%) and equal per cent i.e. 95.56 per cent of the gardeners strongly agreed that kitchen garden produces fresh and healthy vegetables, kitchen garden helps to improve the nutritional status of the family and also kitchen gardening increases physical activity and exercise. Less per cent of the respondents strongly disagreed to the statement that kitchen garden helps to create clean and healthy environment (04.44%).

The overall opinion index of the respondents was found to be 68.10 which mean that kitchen gardeners have favourable opinion to the extent of 68.10per cent.

Figure 1 shows overall opinion of the kitchen gardeners towards kitchen gardening. About 93.00 per cent of rural respondents and 84.44 per cent of urban respondents had favourable opinion about kitchen gardening and none of them had less favourable opinion. This may be because kitchen gardening is affordable and it does not need a huge area to grow fruits and vegetables. People can use balconies and even window sills. Through kitchen gardening the family can get fresh and chemical free fruits & vegetables. The continued practice of gardening itself shows that they have favourable opinion towards kitchen gardening (Table 2).

Nutritional knowledge of vegetables in the diet

Table 3 indicates the knowledge of the respondents about nutrition in the diet. The result in the table revealed that, cent per cent of the rural respondents knew that ginger is recommended to cure cold & cough and large majority (93.33%) of them said that, consumption of whole fruit provides better nutrients. Only 20.00 per cent of the rural respondents rightly identified that "Sapota helps in strengthening of bones" and few per cent (13.33%) of them said that, cutting vegetables into big pieces helps to reduce the loss of nutrients. In case urban respondents, all of them were aware that "Ginger recommended to cure cold and cough" and "Consumption of whole fruit provides better nutrients". Nearly 33.00 per cent of the rural respondents said that, roots & tubers are useful to provide calorie to our body and only 13.33 per cent had knowledge about the fact that cutting of vegetables into big pieces helps to reduce loss of nutrients in the vegetables. The overall nutrition knowledge index was found to be 63.87, which indicates that kitchen gardeners are having better knowledge to the extent of 63.87 per cent.

Figure 2 shows the level of knowledge of the kitchen gardeners about nutrition of vegetables in the diet. It could be seen that most (93.33%) of the rural respondents had medium level of knowledge about nutrition from vegetables, 06.67 per cent of them had high knowledge and none of them belonged to low knowledge level category. In case of urban respondents, more than half (53.33%) of the respondents had medium level of knowledge followed by high level (46.67%) and none of them fall under low level category. This could be because of indigenous knowledge of the respondents and also more exposure to social media (Table 4).

Table.1 Opinion of kitchen gardeners about kitchen gardening n=60

Sl. No	Statements	Rural (n ₁ =15)					Urban (n ₂ =45)					Opinion Index
		SA F (%)	A F (%)	UD F (%)	D F (%)	SD F (%)	SA F (%)	A F (%)	UD F (%)	D F (%)	SD F (%)	
1	Kitchen garden provides safe food to the family	15 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	45 (100.00)	0 (0.00)	0 (0.00)	0 (0.00)	0 (0.00)	79.67
2	Family members gets a higher share of vegetables through kitchen garden	12 (80.00)	03 (20.00)	0 (0.00)	0 (0.00)	0 (0.00)	44 (97.78)	01 (2.22)	0 (0.00)	0 (0.00)	0 (0.00)	78.67
3	Vegetables from kitchen garden are fresh and healthy	14 (93.33)	01 (6.67)	0 (0.00)	0 (0.00)	0 (0.00)	43 (95.56)	02 (4.44)	0 (0.00)	0 (0.00)	0 (0.00)	79.00
4	Kitchen garden will help to start a small business at home	08 (53.33)	04 (26.67)	01 (6.67)	01 (6.67)	01 (6.67)	15 (33.33)	24 (53.33)	05 (11.11)	01 (2.22)	0 (0.00)	63.33
5	Kitchen garden helps to conserve environment/ protect environment	09 (60.00)	06 (40.00)	0 (0.00)	0 (0.00)	0 (0.00)	34 (75.56)	11 (24.44)	0 (0.00)	0 (0.00)	0 (0.00)	74.33
6	Kitchen garden helps to improve the nutritional status of the family	12 (80.00)	03 (20.00)	0 (0.00)	0 (0.00)	0 (0.00)	43 (95.56)	02 (4.44)	0 (0.00)	0 (0.00)	0 (0.00)	78.33
7	Kitchen garden enables to get more vitamins and minerals rich foods to family members	06 (40.00)	9 (60.00)	0 (0.00)	0 (0.00)	0 (0.00)	42 (93.33)	03 (6.67)	0 (0.00)	0 (0.00)	0 (0.00)	76.00
8	Kitchen garden helps to alleviate malnutrition through the consumption of fresh and nutritious vegetables	08 (53.33)	07 (46.67)	0 (0.00)	0 (0.00)	0 (0.00)	36 (80.00)	09 (20.00)	0 (0.00)	0 (0.00)	0 (0.00)	74.67
9	Kitchen garden helps to utilize leisure time of a family members	04 (26.67)	06 (40.00)	05 (33.33)	0 (0.00)	0 (0.00)	19 (42.22)	26 (57.78)	0 (0.00)	0 (0.00)	0 (0.00)	66.00
10*	Watering of plants every day is a difficult task in kitchen garden	0 (0.00)	07 (46.67)	0 (0.00)	01 (43.75)	02 (12.50)	03 (6.67)	17 (37.78)	03 (6.67)	21 (46.67)	01 (2.22)	41.00
11*	More people are required in maintenance of kitchen garden	0 (0.00)	14 (87.50)	01 (12.50)	0 (0.00)	0 (0.00)	01 (2.22)	40 (88.89)	01 (2.22)	03 (6.67)	0 (0.00)	57.33

Table.1 Contd.....

Sl. No	Statements	Rural (n ₁ =15)					Urban (n ₂ =45)					Opinion Index
		SA F (%)	A F (%)	UD F (%)	D F (%)	SD F (%)	SA F (%)	A F (%)	UD F (%)	D F (%)	SD F (%)	
12*	Vegetable cultivation in the kitchen garden is very costly	0 (0.00)	08 (56.25)	02 (12.50)	05 (31.25)	0 (0.00)	02 (4.44)	30 (66.67)	11 (24.44)	02 (4.44)	0 (0.00)	53.00
13	Vegetable cultivation has become a venue for the get togetherness of the whole family members	02 (12.50)	13 (87.50)	0 (0.00)	0 (0.00)	0 (0.00)	15 (33.33)	29 (64.44)	01 (2.22)	0 (0.00)	0 (0.00)	65.00
14	Kitchen garden helps in effective space utilization	03 (18.75)	12 (81.25)	0 (0.00)	0 (0.00)	0 (0.00)	26 (57.78)	19 (42.22)	0 (0.00)	0 (0.00)	0 (0.00)	69.67
15	Kitchen garden helps to create clean and healthy environment	03 (18.75)	10 (68.50)	0 (0.00)	02 (12.50)	0 (0.00)	09 (20.00)	31 (68.89)	02 (4.44)	01 (2.22)	02 (4.44)	59.33
16	It helps family to get fruits and vegetables throughout the year	10 (68.50)	01 (6.25)	01 (6.25)	01 (6.25)	02 (12.50)	07 (15.56)	24 (53.33)	01 (2.22)	08 (17.89)	05 (11.11)	52.00
17	Kitchen garden will give practical experience about farming to the children	06 (37.50)	9 (62.50)	0 (0.00)	0 (0.00)	0 (0.00)	21 (46.67)	22 (48.89)	02 (4.44)	0 (0.00)	0 (0.00)	68.33
18	Kitchen garden helps to grow vegetables as per the need of the family members	7 (50.00)	08 (50.00)	0 (0.00)	0 (0.00)	0 (0.00)	34 (75.56)	11 (24.44)	0 (0.00)	0 (0.00)	0 (0.00)	72.33
19	Kitchen gardening increases physical activity and exercise	13 (87.50)	02 (12.50)	0 (0.00)	0 (0.00)	0 (0.00)	43 (95.56)	02 (4.44)	0 (0.00)	0 (0.00)	0 (0.00)	78.67
20	Kitchen waste can be recycled into compost for the use of kitchen garden	07 (50.00)	08 (50.00)	0 (0.00)	0 (0.00)	0 (0.00)	39 (86.67)	06 (13.33)	0 (0.00)	0 (0.00)	0 (0.00)	75.33
Overall opinion index											68.10	

*Indicates negative statements

Table.2 Nutritional knowledge of vegetables in the diet among kitchen gardeners n=60

SI. No	Statements	Knowledge scores		Knowledge Index
		Rural (n1=15)	Urban (n2=45)	
1	Carrot is good for eyes	10 (66.67)	39 (86.67)	91.67
2	Spinach is recommended to increase blood in the body	9 (60.00)	40 (88.89)	81.67
3	Consumption of curry leaves helps to reduce the body weight	5 (33.33)	28 (62.22)	53.33
4	Roots and tubers are useful us to provides calories to our body	4 (26.67)	15 (33.33)	31.67
5	Consumption of garlic lowers cholesterol level in the human body	9 (60.00)	30 (66.67)	65.00
6	Cutting vegetables into big pieces helps to reduce the loss of nutrients in the vegetables	2 (13.33)	6 (13.33)	11.67
7	Colour of the vegetables will be lost when vegetables are over boiled/cooked	4 (26.67)	18 (40.00)	36.67
8	Green leafy vegetables are recommended for anaemic patients	10 (66.67)	40 (88.89)	83.33
9	Pumpkin is good for skin	7 (46.67)	20 (44.44)	43.33
10	Consumption of whole fruit provides better nutrients	14 (93.33)	45 (100.00)	98.33
11	Eating of guava stabilizes the blood pressure level	10 (66.67)	29 (64.44)	65.00
12	Sapota helps in strengthening of bones	3 (20.00)	24 (53.33)	45.00
13	Drinking of lemon juice reduces indigestion and also weight of the body	9 (60.00)	40 (88.89)	81.67
14	Malabar spinach is recommended for mouth ulcers	5 (33.33)	37 (82.22)	70.00
15	Ginger is recommended to cure cold and cough	15 (100.00)	45 (100.00)	100.00
Overall knowledge index				63.87

Table.3 Level of nutritional knowledge of vegetables in the diet among kitchen gardeners

Categories	Rural (n ₁ =15)		Urban (n ₂ =45)	
	Frequency	Percentage	Frequency	Percentage
Low (< 5)	0	0.00	0	0.00
Medium (5 - 10)	14	93.33	24	53.33
High (> 10)	01	6.67	21	46.67

Table.4 Correlation coefficient of independent variables with opinion and knowledge about kitchen gardening n=60

SI. No	Variables	'r' values (Opinion)	'r' values (Knowledge)
1	Age	.005	.139
2	Education	.320*	.370**
3	Annual income	.195	.450**
4	Family size	-.098	-.141
5	Occupation	-.055	-.178
6	Training attended	.037	.163
7	Kitchen garden size	.166	.124
8	Extension contact	-.037	-.049
9	Source of information	.176	.144
10	Social media participation	.355**	.375**
11	Social participation	-.155	-.106
12	Source of motivation	.219	.351**

****.** Correlation is significant at the 0.01 level (2-tailed).

***.** Correlation is significant at the 0.05 level (2-tailed).

Fig. 1. Overall opinion of the kitchen gardeners towards kitchen gardening

Internet websites are providing information regarding any topic so people can get information within a few minutes and school text books, TV programmes, news also spreads information on nutrition, food groups etc. Present generation is more health conscious and know what to eat and what it contributes to their health status. The difficulty time of corona has more exposed them to food, nutrition, nutrients etc. They expressed that regular consumption of fruits & vegetables provides vitamins & minerals to the body. They also act as antioxidants and lower the incidence of major diseases.

Relationship between independent and dependent variables

Correlation coefficient of independent variables with opinion and knowledge

The Table 4 shows the relationship between independent variables and opinion & knowledge of the respondents. The education was positively significant at 1 per cent level of probability and social media participation was positively significant at 5 per cent level of probability. Age, annual income, family size, occupation, trainings attended, kitchen garden size, extension contact, source of information, social participation, source of motivation are not correlated with opinion of the respondents.

The education, annual income, social media participation and source of information were positively significant at 1 per cent level of probability with knowledge of respondents while, age, family size, occupation, training attended, kitchen garden size, extension contact, social participation, source of motivation were not correlated with knowledge of the respondents.

In conclusion the findings revealed that most of the kitchen gardeners had favourable opinion about kitchen gardening. It could also be noticed from the study that large majority of the rural gardeners had medium nutritional knowledge whereas majority of the urban respondents had medium nutritional knowledge followed by high knowledge.

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