

Original Research Article

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## Adoption Status of Practices of 'Food & Nutrition' Training Course for Rural Women Conducted by KVKs in Punjab

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### ABSTRACT

The study was carried out to assess the adoption status of practices imparted under four training courses on 'Food & Nutrition'. Out of total 88 trainees, a sample of 22 trainees was drawn by applying probability proportional to size (PPS) sampling method and data were collected personally from the selected trainees by using an interview schedule. The findings of the study revealed that all the trainees had adopted the practices of preservation of fruits and vegetables, preparation of recipes enriched with nutrients, out of the total twenty two practices imparted under training course on 'Food & Nutrition'. A large majority of trainees had not adopted the practice of preparation of therapeutic diet and practice of use of medicinal plants. Majority of the trainees had medium level of extent of adoption of practices imparted under 'Food & Nutrition' and overall adoption status of training course was also medium. Age and education of trainees had negative and significant relationship with the extent of adoption of practices. It can be concluded that there is a need to promote the practice use of medicinal plants by creating awareness about benefits of medicinal plants. Nutritionist should create awareness regarding importance of therapeutic diet through different media.

#### Keywords

Krishi Vigyan Kendras, Adoption Status, Extent of Adoption

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### Introduction

Food provides essential nutrients for proper functioning of body. Nutrients are important for both physical and mental well-being. We need a wide variety of different foods to provide the right amounts of nutrients for good health. Right amount of nutrients can only be obtained through the diet. Importance of food nutrition can also be understood by the fact that even if your body is in shortage of single micronutrient, it can have adverse effects on your overall functioning. Both the

deficiency and the excess of nutrients can cause problems in the body. Therefore, it is important to consume all the foods in moderate quantities or as suggested by a dietician or a health practitioner (NHMRC, 2017).

Women, throughout most of the world, have the major responsibility for their family's nutrition. In developing countries, women take a major share of managing the food security of families as they are responsible for cooking and feeding all the family members. Therefore

to enhance the living standard and better health of farming families, there is a need to create awareness regarding the importance and benefits of food and nutrition among family members particularly farm/rural women. Food is often grown in huge quantity that cannot be consumed at a time and needs to be processed in order to store it for a longer period of time. Attention should be given to value addition of food in order to enhance its shelf life, to make food available whole year, to increase its nutritive value and for availability of more variety. It will not only improve the health status of the people but also helps to enhance the income level and living standard of farming families by value addition at household and commercial level. Realizing this fact *Krishi Vigyan Kendras* had initiated to impart vocational training to women, which includes preparation of balanced diet, preparation of therapeutic diet, storage of grains with indigenous material, sprouts making and preservation of fruits and vegetables etc. Keeping this aspect in mind and importance of training programme in view the present paper was prepared with the following objectives:

### **Objectives**

To assess the adoption status of the practices imparted under training course on 'Food & Nutrition'.

To find out the relationship between the socio-personal profile of the trainees with level of use of training.

### **Materials and Methods**

The study was conducted at KVK Hoshiarpur, as it had conducted four long duration training courses on 'Food and Nutrition' from year 2009 to 2012. The list of 88 women trainees who had attended the vocational training course on 'Food and Nutrition' was procured

from *Krishi Vigyan Kendra* Hoshiarpur. From this list, twenty five per cent of the trainees were selected by applying the probability proportional to size technique. Therefore a total 22 trainees comprised the sample for study.

Data were collected personally from the respondents (women trainees) by using an interview schedule.

### **Adoption status**

Refers to the relative position of trained women regarding adoption, non-adoption, discontinuance of practices related to food and nutrition imparted under vocational training courses. Two, one and zero scores were assigned to adopted, discontinued and non-adoption of the practices respectively. Mean scores were calculated on the basis of assigned scores by using following formula:

$$\text{Mean score of each practice of training course} = \frac{\text{Total scores of each practice}}{\text{Total number of trainees}}$$

$$\text{Mean score of each training course} = \frac{\text{Sum of mean scores of all practices}}{\text{Number of practices}}$$

### **Extent of adoption**

Refers to the total numbers of recommended practices adopted by trained women under particular training course. One score was assigned to each adopted practice.

### **Results and Discussion**

#### **Adoption Status**

The data presented in the Table 1 indicated that the adoption status of practices imparted under training course on 'Food & Nutrition'. Total twenty two practices were imparted under the 'Food & Nutrition' training course conducted by *Krishi Vigyan Kendra*

Hoshiarpur. Status of adoption, discontinuance and non-adoption of the each practice along with their reasons was obtained from the trainees and results were as discussed below.

### **Preparation of balanced diet for family members, according to their age and requirements**

It was noticed that 68.18 per cent of trainees had adopted the practice of preparation of balanced diet for family members according to their age and requirements, while 31.28 per cent trainees didn't adopt this practice. Important for good health and growth of the family members were the major reasons for adoption of this practice. For non-adoption twenty two per cent of trainees had faced difficulty to make a separate diet for everyone in the family and 19 per cent had the shortage of time.

### **Therapeutic diet**

A large majority of trainees (86.26%) did not adopt practices of therapeutic diet due to lack of time whereas 13.64 per cent adopted this practice because doctors suggested it for a particular disease.

### **Observing the four hours gap between meals**

It was interesting that a large majority (95.45%) had adopted this practice because it is a very important thing for better digestion. Only four per cent of trainees didn't adopt this practice because they eat when they feel hungry without bothering any gap between the meals.

### **Proper chewing of food**

In case of the adoption status of 'Proper chewing of food' same trend was noticed as in 'Observing the four hour gap between meals'.

Nearly ninety five per cent of the trainees had adopted this practice because they feel that it is important to chew food properly for better digestion followed by only five per cent trainees who said that they had never noticed that they are properly chewing their food or not.

### **Preparation of recipes enriched with nutrients**

It was heeded that cent per cent of the trainees who had received the training on 'Food & Nutrition' from *Krishi Vigyan Kendras* had adopted the practice of 'Preparation of recipes enriched with vitamins, minerals, fiber, carbohydrates, fats & oils, iron and protein'. The reasons revealed by them were like this practice is very important for the better growth and good health of the body (90.91%) and to avoid deficiency diseases (81.82%).

### **Storage of grains with indigenous material**

A large majority of trainees (90.91%) were storing grains by using the indigenous material because they are following it from many decades. Remaining nine per cent of trainees have not adopted this practice because they were using insecticides for storing their grains.

### **Use of different methods of cooking to minimize the loss of nutrients**

Majority of trainees (77.27%) had adopted different methods of cooking to minimize the loss of nutrients because it helps to prevent the loss of the nutrients. While remaining 22.73 per cent didn't adopt it due to lack of time (18.18%) and taste of cooked food with these methods was not good (13.64%)

### **Use of medicinal plants**

Majority of trainees (68.18%) didn't adopt this practice because doctors are easily available

everywhere (59.10%), lack of knowledge of its use (45.45%) and difficult to use (9.09%). Only thirty two per cent of the trainees had adopted the respective practice because their ancestors told them about the benefits of the medicinal plants (27.27%) and they have medicinal plants at their home (13.64%).

### **Avoiding food myths**

All trainees had believed in food myths because they were following the instructions of their ancestors (68.18%) and they didn't want to take any risk (31.82%) whereas, 14 per cent of trainees had lack of knowledge.

### **Preparation of fermented foods at home**

A large majority of trainees (81.82%) had not adopted the practice of preparation of fermented foods at home. Major reasons for non-adoption of this practice were difficult to make (45.45%), disliked fermented food by the family members (40.91%) and preparation of fermented food is time consuming practice (40.91%). Low percentage of the trainees (18.18%) had adopted this particular practice because it adds variety in food (18.18%) and it is easy to digest (4.55).

### **Wise purchasing**

Ninety per cent of trainees had adopted the practice of wise purchasing because they felt that it saves money and quality of food items

was also good (86.36%). Good practice was the other reason reported by 45 per cent of trainees, whereas four per cent had not adopted because elder member of family purchased all food items.

### **Identification of adulterated food**

More than ninety five per cent of the trainees had adopted this practice because adulterated food items affect the taste of food (95.45%) and to maintained good health of family (72.73%). The reasons for non-adoption of this practice as reported by four per cent of trainees were that food items were purchased from a reliable source.

It is very important to bring into notice that from above discussed twelve practices not even a single trainee had discontinued any practice after adopting it once.

### **Processing of pulses at household level**

Forty five per cent of trainees did not process their pulses at home because pulses were readily available to them (36.36%) and they had lack of time (22.73%).

Eighteen per cent trainees were adopted this practice to save money whereas 36.36 per cent of trainees had discontinued practice due to market processed pulses' taste is good (22.73%) and they thought it is difficult and time consuming (13.64%).

Session	Name of VTC	Total no. of VTCs conducted on 'Food & Nutrition'	Total no. of trainees	Selected trainees (25%)
2009-10	Food & Nutrition	1	25	6
2010-11	Food & Nutrition	2	49	12
2011-12	Food & Nutrition	1	14	4
<b>2009-12</b>		<b>4</b>	<b>88</b>	<b>22</b>

**Table.1** Adoption Status of practices imparted under ‘Food & Nutrition’ along with their reasons

Practices/ Activities	Adopted f (%)	Discontinued f (%)	Not Adopted f (%)	Mean Score (0-2)	*Reasons		
					Adoption f (%)	Discontinuance f (%)	Non-Adoption f (%)
Preparation of balanced diet for family members, according to their age and requirement	15 (68.18)	-	7 (31.82)	1.36	Important for good health and growth of the family: 15 (68.18)	-	Faced difficulty to make separate diet for everyone in the family: 5 (22.73) Lack of time: 4 (18.18)
Therapeutic diet	3 (13.64)	-	19 (86.26)	0.27	Doctor suggest: 3 (13.64)	-	Lack of time: 19 (86.26)
Observing the four hour gap between meals	21 (95.45)	-	1 (4.55)	1.91	It is important for better digestion: 21 (95.45)	-	Eat when feel hungry: 1(4.55)
Proper chewing of food	21 (95.45)	-	1 (4.55)	1.91	Helps in digestion: 21 (95.45)	-	Faced no problem without chewing food: 1 (4.55)
Preparation of recipes enriched nutrients	22 (100)	-	-	2.00	It is important for the better growth and good health of the body: 20 (90.91) Its deficiency causes different diseases: 18(81.82)	-	-
Storage of grains with the use of indigenous material	20 (90.91)	-	2 (9.09)	1.81	We are following it since many decades: 20 (90.91)	-	Use new techniques: 2 (9.09)
Use of different cooking methods to minimize the loss of nutrients	17 (77.27)	-	5 (22.73)	1.54	To prevent loss of the nutrients: 17 (77.27)	-	Lack of time: 4 (18.18) Taste of cooked food by this method is not good: 3 (13.64)
Use of medicinal plants	7 (31.82)	-	15 (68.18)	0.63	Easy availability of medicinal plants at home: 3 (13.64) Our ancestors also told us about the benefits of these plants: 6 (27.27)	-	Allopathic medicine is equally good: 13 (59.10) Lack of knowledge about its use: 10 (45.45) Difficult to prepare and taste is bitter: 2 (9.09)
Avoiding food myths	-	-	22 (100)	-	-	-	Follow the instructions of ancestors: 15 (68.18) Can't take risk: 7 (31.82) Lack of knowledge: 3 (13.64)
Preparation of fermented food at home	4 (18.18)	-	18 (81.82)	0.36	To add variety in food: 4 (18.18) Easy to digest: 1 (4.55)	-	Difficult to make: 10 (45.45) Time consuming: 9 (40.91) Family members didn't like it : 6 (27.27)
Wise purchasing of food	21 (95.45)	-	1 (4.55)	1.91	It is a very good practice: 10 (45.45) It saves money and helps to buy good food items at reasonable price: 19 (86.36)	-	Elders in the family were purchasing: 1(4.55)
Identification of adulterated food	21 (95.45)	-	1 (4.55)	1.91	To maintain good health of the family: 16 (72.73) It affects the taste of food : 21 (95.45) Adulterated food affects the digestion: 2 (9.09)	-	No need of it, purchased food from reliable sources: 1 (4.55)
Processing of pulses at	4	8	10 (45.45)	0.73	To save money: 4 (18.18)	It's difficult and time	Everything is readily available in the

household level	(18.18)	(36.36)				consuming work: 3 (13.64) Taste of market processed pulses is better: 5 (22.73)	market: 8 (36.36) Lack of time to process: 5 (22.73)
Sprouts making	3 (13.64)	8 (36.36)	11 (50.00)	0.64	Sprouts are good for health : 3 (13.64) Protein rich food: 3 (13.64) Easy to make and add variety in food: 3 (13.64)	Family members didn't like it: 8 (36.36)	Three main meals are preferred: 11 (50.00)
Preservation of fruits and vegetables	22 (100)	-	-	2.00	Use on regular basis at home and save money: 22 (100) To ensure good quality and adulterate free preserved food items at home:17 (77.27) Easy to store: 2 (9.09) Use fresh fruits and vegetables: 22 (100) Tasty and nutritious: 6 (27.27)	-	-
Value addition in milk	19 (86.36)	-	3 (13.64)	1.72	Good for health & growth: 15 (68.18) Save money: 11(50.00) Variety in food: 1 (4.55) Delicious to eat: 16 (72.73)	-	Sale of milk is more beneficial: 3 (13.64)
Preparing recipes for special occasions	20 (90.90)	-	2 (9.09)	1.82	It ensures the quality 0.09of food:19 (86.36) Availability of fresh and tasty food for family: 20 (90.90) It's cost effective as compare to market products: 20 (90.90)	-	Everything is available in the market and its cost effective: 2 (9.09)
Preparing beverages	18 (81.81)	-	4 (18.18)	1.64	Children like it: 15 (68.18) Its healthy and tasty: 1 (4.55) Serve to relatives: 11 (50.00) Easy to make: 3 (13.64) It ensures quality of prepared beverages: 17 (77.27)	-	Everything is available in the market: 4 (18.18)
Preparing nutritious snacks	22 (100)	-	-	2.00	Easy to make: 20 (90.90) Its cost effective as compare to market: 5 (22.73) Family member prefer over market: 10 (45.45) Best use of leftover food: 5 (22.73) Good to eat as evening snack to satisfy the hunger: 4 (18.18)	-	-
Tiffin services	-	-	22 (100)	-	-	-	Lack of time: 21 (95.45) No marketing: 17 (77.27) Lack of man power: 2 (9.09)
Supplementary foods for pre-school children	-	-	22 (100)	-	-	-	Shortage of time: 19 (86.36) Children like to eat with family: 1 (4.55) Feel no need of it: 12 (54.55)
Packed lunch for school children	12 (54.55)	-	10 (45.45)	1.09	For better health of the children: 12 (45.55) To satisfy their hunger: 10 (45.45)	-	Respondents were unmarried:10 (45.45)
Adoption status of training course				<b>1.24</b>			

\*Multiple response (Reasons)

**Table.2** Distribution of the trainees based on the extent of adoption of practices imparted under ‘Food & Nutrition’

n=22

Extent of adoption		
Food & Nutrition	f	(%)
Low (1-7)	1	(4.55)
Medium (8-14)	13	(59.09)
High (15-22)	8	(36.36)

**Table.3** Relationship between profile of the trainees and extent of adoption of the practices imparted under Food & Nutrition

Adoption status	
Variables	‘r’ value
Age	-0.481**
Education	-0.438**
Income of the family	0.160 <sup>NS</sup>
Land holding	0.0192 <sup>NS</sup>
Total family member	0.410 <sup>NS</sup>
Mass Media	-0.090 <sup>NS</sup>

\*\*significant at 5%

### **Sprouts making**

Fifty per cent of the trainees did not prepare sprouts because the family member’s preferred three routine meals, only 13 per cent of trainees had adopted this practice because they know nutritional value of sprouts and can easily prepare at home.

Thirty six per cent of trainees’ discontinued this practice because their family members did not like sprouts.

### **Preservation of fruits and vegetables**

All trainees had preserved seasonal fruits and vegetables because they were using it on regular basis, it ensures good quality and adulteration free food at home (77.27%). Further reasons of adoption of this practice were that they used fresh fruits and vegetables (100%), preserved food at home are tasty and nutritious (27.27%) and easy to store (9.00%).

### **Value addition in milk**

Majority of the trainees (86.36%) had adopted this practice because they felt that value added products of milk are good for health (68.18%), good source of income (50.00%), delicious to eat (72.73%) and products added variety in food (4.55%). Non- adopters didn’t adopt the respective practice due to the high cost of the milk in the market.

### **Preparing recipes for special occasions**

A large majority of trainees (90.90%) had adopted the practice of preparing recipes for special occasions because of availability of fresh food according to the taste of the family and it is cost effective as compare to market products (90.90%).

It also ensures the quality of food (86.36%). While, nine per cent trainees didn’t adopt this particular practice because they think

everything is readily available in the market, so there is no need of preparing recipes at home.

### **Preparing beverages**

Majority of the trainees (81.81%) had adopted the practice of preparing beverages because it ensures the quality of prepared beverages (77.27%) followed by children like it (68.18%), prepare it to serve relatives (50.00%), easy to make (13.64%) and nearly five per cent stated that it is healthy and tasty. Reason of non-adoption of this practice was that marketed beverages are better, so we don't prepare it at home.

### **Preparation of nutritious snacks**

It is a commonly adopted practice in almost all the families. It was noticed that hundred per cent trainees had adopted the practice of 'Preparing nutritious snacks' at home. Reasons they stated were like it is easy to make (90.90%) followed by family members like the snacks a lot (45.45), it is cheap as compare to market and best usage of leftover food to prepare it (22.73%) and nearly eighteen per cent trainees reported that they adopted it because it is good to eat as evening snacks to satisfy the hunger.

### **Tiffin services**

Although the practice of tiffin services is a good source of income, but reasons for non-adoption of hundred per cent of trainees were lack of money (95.45%), no marketing (77.27%) and lack of man power (9.09%).

### **Supplementary foods for pre-school children**

It was also very surprising to observe that none of the trainee had adopted the practice of preparing supplementary foods for pre-school children. Reasons obtained were like shortage of time (86.36%), feel no need of it (54.55%) and children like to eat same meal with family (4.55%).

### **Packed lunch for school children**

More than half of the trainees (54.55%) who had received training on 'Food & Nutrition, packed lunch for school children'. reasons for adoption of this practice was for better health of their children. Non-adopters stated that they were unmarried, they didn't have children, so they didn't adopt this practice.

It could be concluded that most of the practices imparted under the training course on 'Food & Nutrition' were adopted by the trainees as it is very useful, good for better health and taste, helps to save money & easy to prepare.

Lowest mean scores were obtained by the practice of 'Therapeutic diet' (0.27) and 'preparation of fermented food' (0.36) and 'use of medicinal plants' (0.63).

### **Extent of adoption**

It refers to the total numbers of recommended practices/technologies adopted by trained women under 'Food & Nutrition' training course.

One score was assigned to each adopted practice. It was measured into three categories i.e. Low, Medium and High. Minimum and maximum scores were determined on the basis of number of practices imparted under a 'Food & Nutrition' training course.

It was observed from the Table 2 that majority of the trainees (59.09%) had medium level of extent of adoption of practices imparted under training course on 'Food & Nutrition'. Nearly 36 per cent of the trainees had high level of extent of adoption and a negligible percentage of the trainees (4.55%) had low level of extent of the practices. Overall mean score was 1.24, it also indicated the medium adoption status of training course. Similar findings are reported by Buraka and Sreenivasarao (2017) that maximum number of respondents was in medium category of extent of adoption of Home Science technologies in AP.



Therefore, it can be concluded that highest percentage of the trainees had medium level of extent of adoption of the practices.

Results are contradictory with Singh *et al.*, (2017) as they revealed that extent of adoption of majority of the trained and untrained dairy farmers of Punjab was high.

The perusal of data in Table 3 showed that the variable like age and education had negative and significant relationship with the extent of adoption of the practices imparted under training course on 'Food & Nutrition'. Further the study revealed that all other selected variables had non-significant relationship with the extent of adoption.

Majority of the trainees had medium level of extent of adoption and adoption status of the practices. Practices like preservation of fruits & vegetables, preparing nutritious snacks, identification of adulterated food and wise purchasing of food imparted under food and nutrition training course had high adoption status.

Lowest adoption status was observed in practices of preparation of therapeutic diet and use of medicinal plants. Lack of time for preparing different recipes and lack of knowledge about the use of medicinal plant and easy availability of doctors were the major reasons for non-adoption of these practices. Age and education had negative and significant relationship with the adoption status of the practices.

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