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## Impact of nutrition education on knowledge gain of rural post-menopausal women of Haryana

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### Abstract

Menopause is a natural part of each and every woman's life but it has some adverse effects on the quality of life. Although after menopause absorption of some nutrients reduced to some extent but due to unawareness and lack of knowledge about importance and sources of various nutrients it has become worst and it becomes a great need of the hour to create awareness based various nutrients. The present study was conducted to assess the impact of nutrition education on nutritional knowledge of 25 rural post-menopausal women for two months at every 15 days interval in Hisar district, Haryana, India. The nutritional knowledge was observed using pre-tested questionnaire. Pre-scores of nutrition knowledge indicated that most of the rural subjects had inadequate knowledge about various aspects of nutrition. Post-scores indicated a highly significant ( $p \leq 0.01$ ) gain in knowledge scores of rural post-menopausal women. It was found that there was a significant gain in knowledge of rural subjects regarding importance of balanced diet (15.68), sources of nutrients in diet (9.76), importance of green leafy vegetables and fruits in diet (3.88), nutrient deficiency diseases and their prevention (13.52), conservation of nutrients (9.00), importance of physical activity and other healthy habits (8.76) and life style related awareness (4.20), respectively.

**Keywords:** Nutrition, education, knowledge, rural, post-menopausal women

### Introduction

Women spend one third of their life after menopause. Since life expectancy is increasing, the prevalence of various health problems like metabolic syndromes (obesity, overweight, insulin resistance, diabetes mellitus, various cardiovascular diseases) along with other risk factors like changes in gynecoid to android fat pattern, low bone mineral density etc. are also rising among post-menopausal women which in turn affect their quality of life. These fatal health problems reflect a significant burden of morbidity and mortality in post-menopausal women, which have been considered as a major public health problems nowadays. In developing countries like India most of the rise in various health problems is attributable to various modifiable risk factors such as lack of physical activity and unhealthy diet having lack of fruits and vegetables, unbalanced diet, lack of pulses and legumes and other food groups and excess inclusion of salt, animal fat, and sugar intake. Consumption of a healthy diet can be proved as one of the effective core set of prevention of various unhealthy strategies. A diet containing high intake of fruits and vegetables, various cereals and grains, pulses and legumes along with low intake of saturated and trans fat, low intake of sodium chloride and sugar can become a preventive measure of various risk factors and health problems among post-menopausal women. But very few of female population related to post menopause stage recommends all food groups with low inclusion of animal fat, sugar and salt in their diet. Raising awareness related to nutrition and other healthy habits can become an effective way to prevent the rise in the prevalence of nutrition based health problems among post-menopausal women. Dietary and health awareness related behaviors including food choices based on importance of balanced diet, importance of green leafy vegetables, other vegetables and fruits, cereals grains, pulses and legumes, milk and milk products along with regular physical activity are influenced by numerous environmental and individual factors like literacy, socio-economic status and psychosocial factors such as knowledge, beliefs and perceptions about nutrition and health. By spreading knowledge, awareness and education related to various aspects of nutrition and health burden of risk of various health problems among post-menopausal women can be overcome to some extent.

### Methodology

The present study was conducted to assess the impact of nutrition education on nutritional knowledge of 25 rural post-menopausal women fortnightly for two month in Hisar district,

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Haryana, India. For the purpose of quantifying the qualitative data related to assessment of the extent of nutrition knowledge, a close ended knowledge inventory was prepared and responses were obtained under “yes” or “no” categories at the initial period i.e. before imparting nutrition education. Correct answer was given score „One” and incorrect answer was given score „Zero”. The nutrition education was imparted on various aspects of foods and nutrition. Lectures were delivered with help of media package i.e. posters and leaflets. After two months again the responses were obtained for assessing the gain in nutritional knowledge scores. Aggregated scores were computed to find out the pre and post knowledge scores and gain in knowledge was determined. The total score for each parameter were combined and divided into three categories of adequate, marginally adequate and inadequate and codes were given as below

**Table 1:** Scores level of knowledge

Category	Scores(Level of knowledge)	Code
Inadequate	Below 50%	1
Marginally Inadequate	50-75%	2
Adequate	76-100%	3

Aggregate scores were computed to find out extent of nutritional knowledge possessed by respondents in the three categories. The scores were used for comparison of knowledge.

### Results and Discussion

Data related to nutrition knowledge of rural post-menopausal women have been depicted in Table 2. Before imparting nutrition education, the 20, 24, 24, 16, 16, 20 and 16 per cent rural subjects had marginally adequate nutrition knowledge

about the importance of balanced diet, sources of nutrients in diet, importance of green leafy vegetables and fruits in diet, nutrient deficiency diseases and their prevention, conservation of nutrients, importance of physical activity and other healthy habits and life style related awareness, respectively. Eighty, 76, 76, 84, 84, 80 and 84 per cent of the rural subjects had inadequate knowledge about the importance of balanced diet, sources of nutrients in diet, importance of green leafy vegetables and fruits in diet, nutrient deficiency diseases and their prevention, conservation of nutrients, importance of physical activity and other healthy habits and life style related awareness, respectively. After imparting nutrition education to the rural menopausal women with the help of media package, there was increase in the knowledge of them. Seventy two, 68, 72, 76, 72, 76 and 76 per cent of the subjects had adequate knowledge regarding the importance of balanced diet, sources of nutrients in diet, importance of green leafy vegetables and fruits in diet, nutrient deficiency diseases and their prevention, conservation of nutrients, importance of physical activity and other healthy habits and life style related awareness, respectively. It was observed that there was increase in the number of post-menopausal women who had adequate and marginally adequate nutrition knowledge after imparting nutrition education. Results of the present study were in agreement with the findings of other investigators (Manios *et al.*, 2006; Bhurosy & Jeewon, 2013; Sirivole & Eturi, 2014; Cannoosamy *et al.*, 2016; Rezaei & Miri, 2017; Sugunadevi & Divya, 2018) [6, 1, 10, 2, 7, 11] who also reported that there was significant increase in the knowledge of rural subjects after imparting nutrition education. It is essential to provide proper nutrition education to rural post-menopausal women in order to make them aware about nutritional needs and other healthy habits related to quality of life.

**Table 2:** Assessment of nutritional knowledge of rural post-menopausal women before and after imparting nutrition education (n=25)

Characteristics	Pre knowledge scores			Post knowledge scores		
	Adequate (76% and above)	Marginally adequate (50-75%)	Inadequate (Below 50%)	Adequate (76% and above)	Marginally adequate (50-75%)	Inadequate (Below 50%)
Balanced diet	-	5(20)	20(80)	18(72)	7(28)	-
Sources of nutrients in diet	-	6(24)	19(76)	17(68)	8(32)	-
Importance of Green Leafy Vegetable and fruits in diet	-	6(24)	19(76)	18(72)	7(28)	-
Nutrient deficiency diseases and their prevention	-	4(16)	21(84)	19(76)	6(24)	-
Conservation of nutrients	-	4(16)	21(84)	18(72)	7(28)	-
Importance of physical activity and other healthy habits	-	5(20)	20(80)	19(76)	6(24)	-
Life style related awareness	-	4(16)	21(84)	19(76)	6(24)	-

Values given in parentheses indicate percentage

**Table 3:** Gain in knowledge scores obtained by rural post-menopausal women (n=25)

Sr. No.	Component	Pre scores	Post scores	Gain in knowledge	't-value'
1.	Balanced diet	18.6±3.84	33.84±5.41	15.68±4.06	19.31**
2.	Sources of nutrients in diet	9.92±3.23	19.68±2.79	9.76±3.43	14.22**
3.	Importance of green leafy vegetables and fruits	4.12±1.48	8.00±1.22	3.88±1.36	14.22**
4.	Nutrient deficiency diseases and their prevention	11.52±3.47	25.04±4.22	13.52±4.76	14.19**
5.	Conservation of nutrients	9.52±2.43	18.52±3.07	9.00±3.71	12.13**
6.	Importance of physical activity and other healthy habits	11.56±2.96	20.32±2.06	8.76±3.70	11.83**
7.	Life style related awareness	3.84±1.40	8.04±1.02	4.20±1.63	12.85**

Values are Mean ± SD \*\*Significant at 1% level

The pre and post knowledge scores of rural post-menopausal women were obtained before and after imparting nutrition education to them. Pre-scores related to nutrition, physical activity and life style related knowledge indicated that most of

the subjects had inadequate knowledge. Post-scores indicated a highly significant ( $p \leq 0.01$ ) gain in knowledge scores of subjects (Table 3). It was found that there was a significant gain in knowledge scores of subjects regarding importance of

balanced diet (15.68), source of nutrients in diet (9.76), importance of green leafy vegetables and fruits in diet (3.88), nutrient deficiency diseases and their prevention (13.52), conservation of nutrients (9.00), importance of physical activity and other healthy habits (8.76) and life style related awareness (4.20).

### Conclusion

Pre-scores of nutrition knowledge revealed that most of the rural post-menopausal women had inadequate knowledge about various aspects of nutrition. A significant gain in knowledge scores (15.68 to 9.00) of rural subjects was found after imparting nutrition education regarding various aspects of nutrition. Thus there is great scope if nutrition education and awareness based on various aspects of nutrition like nutritional importance of balanced diet, sources of nutrients in diet, importance of green leafy vegetables and fruits in diet, nutrient deficiency diseases and their prevention, conservation of nutrients, importance of physical activity and other healthy habits and life style related awareness etc. is imparted to rural post-menopausal women at large scale, it could be an encouraging step towards improvement in nutritional and health status of rural masses.

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