

THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

A Study on Influence of Formal Food and Nutrition Education on Dietary Behaviour among Female Young Adults

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Abstract:

The dietary behaviour of female young adults is crucial as it has an influence on their health as well as that of the future generations. The students of home science study one course on fundamentals of food and nutrition, which consists of an introduction to basic concepts such as food groups, balanced diet, recommended dietary allowances, the macro and micro nutrients, nutrition through the life cycle and basics of diet therapy. In this study an attempt was made to understand the influence of this nutrition education as part of the degree programme on dietary behaviour of female the young adults. The study consisted of two components: (a) Assessing nutritional status of the subjects based on body mass index. (b) Collection of data using interviewer administered structured questionnaire to obtain information on dietary behaviour.

The results of this research indicated that nutrition courses increased nutrition knowledge but did not promote desirable dietary behaviour except in a marginal way. The fact that 50% of subjects of both home science and non home science students are malnourished is a matter of serious concern and so nutrition education with academic commitment could be a time and cost effective way to improve nutritional behaviour of college students regardless of their area of specialization and gender. But the focus of nutritional education should be to improve the knowledge, attitude as well as practice so that desirable dietary behaviour can be adapted by the young adults.

Key words: Nutritional status, Body Mass Index, Dietary behaviour, Association between education and nutritional status

1. Introduction

Young adulthood is a unique period whereby youth slowly start gaining independence from their parents. People in this age group are vulnerable to develop unhealthy behaviours [(Huang Y.L. et. al (1994)¹ and Hubert H. B. et al (1987)²] which will predispose them to chronic diseases later in life (Winkleby M.A. (2004)³. The nutritional status of women is of great concern because the multiple roles played by women give rise to serious health and nutritional problems (McGuire JS et al 1988)⁴.

The dietary patterns of female young adults have a significant influence on their health as well as that of their prospective family members (Georgiou CC 1997)⁵. So there is a need to ensure that young adults learn and practice healthy dietary behaviour.

The degree programme of home science offers various combinations such as B. Sc Clinical Nutrition and Dietetics, B Sc Composite Home Science and BA with Home Science as one optional. All these students compulsorily study one course on fundamentals of food and nutrition which consists of introduction to basic concepts such as food groups, balanced diet, recommended dietary allowances, the macro and micro nutrients, nutrition through life cycle and basics of diet therapy. In this study an attempt is being made to understand the influence of this nutrition education as part of the degree programme on dietary behaviour of the young adults.

2. Materials and Methods

2.1. Selection of the Subjects

The students of Smt. V.H.D Central Institute of Home Science, Bangalore were selected for the study. Stratified sampling technique was used to select subjects and using the proportional allocation rule, sample size for the two strata was calculated to be 30 and 70 respectively. The study was carried out after obtaining approval from ethical committee of the institution. The inclusion criteria were female students above 18 years of age, who were generally healthy (regular attendance) and willing to participate. The students who had successfully completed the course on fundamentals of food and nutrition (4 hours/week and a total of 56

hours) were categorized as home science students. The non home science students were those who had not studied any home science subject including food and nutrition and they were from B. Com and BCA courses.

2.2. Study Design

The study consists of two components: (a) Assessing nutritional status based on body mass index. Weight was measured using weighing scale accurate to 0.5 Kg. Height was measured using a specially constructed instrument consisting of a steel platform to which was attached a steel measuring tape. Height was recorded to the nearest centimetres.

Body Mass Index was calculated using the formula $Body\ Mass\ Index\ (BMI) = \frac{Weight\ (Kg)}{[Height(m)]^2}$. BMI were categorized according to the World Health Organization⁶ conventions appropriate for Asian populations. BMI cut offs: <18.5 (underweight), 18.5–22.9 (normal weight), 23–24.9 (“at risk of overweight” or “pre overweight”), 25–29.9 (overweight), and ≥30 (obese).

b) Collection of data using interviewer administered structured questionnaire to obtain information on dietary behaviour of the two strata. In addition to the base line data, information of energy intake was collected using 24 hour recall method. Food composition table (ICMR⁷) was used to calculate the energy intake.

2.3. Statistical Analysis

BMI categories were converted into a dichotomous variable using two cut off points (18.5–22.9: Normal weight) and others: Malnourished). Education of father and mother (Education up to high school and education above high school), Family income (Up to 10,000/month and above 10,000/month) and occupation (sedentary and non sedentary). and association between BMI and the variables was calculated using Yule’s coefficient of association. SPSS package was used for analysis.

2.4. Results and Discussion

2.4.1. Base Line Data

The age of the subjects ranged from 18-22 years. 80% of the study participants were Hindus and 20 % Muslims in both the categories. 86-88% of the subjects belong to nuclear families and 10% to joint families and remaining extended families. 46 percent of subjects were from small families (4 or less) in home science group and 56 percent in non home science group.

2.4.2. Body Mass Index of the Subjects

The following pie chart shows the body mass index of the subjects belonging to the two strata. The percent of females with normal weight was 46 in case of home science students whereas in case of non home science students it was 55.26. There was no significant (p<0.05) difference in the body mass index of home science and non home science students.

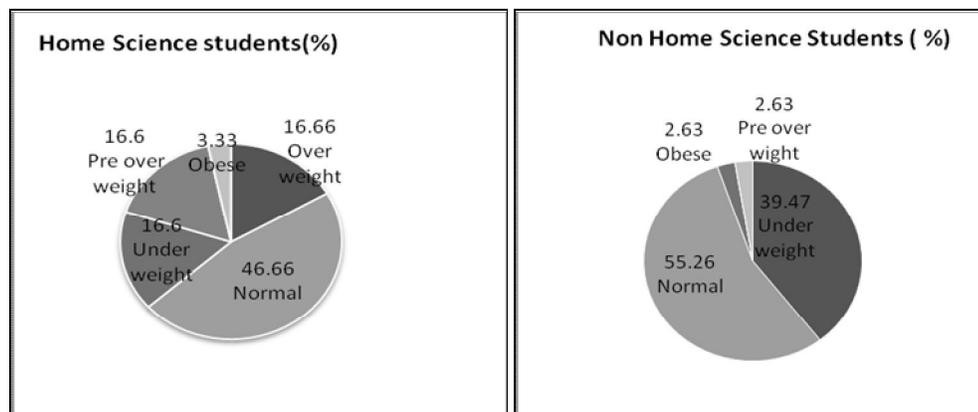


Figure 1: Comparison of Body Mass Index of subjects

2.4.3. Energy Intake among the Subjects

The energy intake per day is shown in table 1.

Energy Intake/day	Category	Home Science (%)	Non Home Science (%)
	RDA (K Cal/day)	1900	1900
	Mean Intake (K Cal/day)	1163	1185

Table 1: Energy intake of the subjects

There is no significant difference (p<0.05) in energy intake of the two study groups. The percent of energy inadequacy compared to the RDA was 38% in home science group and 37% in non home science group. Majority of both home science and non home science students had their breakfast before coming to college and only a small percent (Fig 2) skipped their breakfast due to lack of availability of time in the morning.

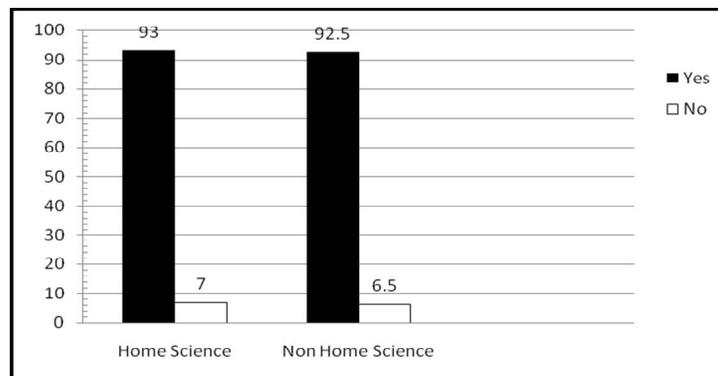


Figure 2: A comparison of the habit of having breakfast of the subjects

2.4.4. Nutritional Status and Associated Factors

Nutritional status is the result of complex variety of social, cultural, environmental, economic, educational, physiological and genetic factors. Of all these factors, educational factors are easier to change compared to other factors. Fig 3 gives the strength of association between nutritional status and related factors.

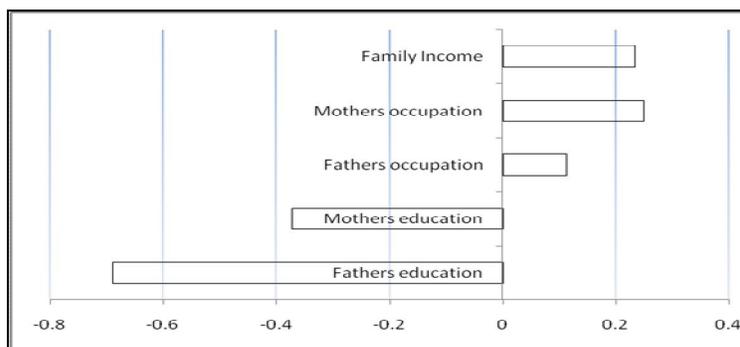


Figure 3: Coefficient of association between nutritional status (Body Mass Index) and related factors

There is a strong negative association between education and nutritional status. Daughters of parents educated above high school were more malnourished than daughters of parents educated below high school level. This shows that general education need not be an indicator of nutritional knowledge. Occupation of mother and father had a positive influence on nutritional status. Children of sedentary father and mother were more malnourished than children of non sedentary parents. Working mother’s daughters had a better nutritional status than daughters of home makers. Family income has a strong positive influence on the nutritional status. The association of these factors with nutritional status seems to be non linear and complex particularly in a transitional society. Major determinants of the health and nutritional status of women are socioeconomic and cultural and education has a mediating or modifying influence on cultural practices.(Ene-Obong H N 2001⁸). Barbara A R (1996)⁹ has shown that maternal education through 4 years of schooling was associated with improved child weight-for-age in the middle socio-environmental group but not in the high and low groups, and that maternal schooling beyond 4 years was negatively associated with child weight.

2.4.5. Nutritional Education and Nutritional Status

The association between home science education and nutritional status is shown in Table 2.

Sl. No	Nutritional Status (BMI)	Home Science education (%)	Non Home Science education (%)
1	Normal	46.66	55.26
2	Malnourished	53.34	44.74

Table 2: Association between formal home science education and nutritional status

Nearly half of the subjects, whether exposed to home science education or not, are malnourished (includes both under nourished and over nourished). The odds ratio between the two attributes was 0.708 indicating a weak association between exposure to a formal food and nutrition education and body mass index among the subjects. But the number of food groups included in case of home science group was more compared to non home science group, which indicates the impact of exposing students to the subject of food and nutrition on the choice of foods. Results of this research indicated that nutrition courses increased nutrition knowledge but did not promote dietary changes except in a marginal way.

The results are in agreement with the previous studies. A study by Vedavalli Sachithanathan (2012)¹⁰ showed that there was no significant change in BMI and physical activity after imparting three months of nutritional education but there was a significant

reduction in the frequency of intakes of chocolate ($p < 0.01$), chips ($p < 0.01$), bread and fast food ($p < 0.01$) in the female subjects studying in school. A study on the efficacy of elective course work based nutrition education on body composition and eating habits among college students showed that the 13 week nutrition education program although did not reduce the body weight, the students gained positive consciousness for a desirable weight management (So-Young Bu 2013)¹¹. Previous literature has demonstrated that there have been several studies using college nutrition courses to motivate overall dietary changes (Skinner JD (1991)¹², Amstutz MK, Dixon DL (1986)¹³. A study using a college nutrition science course to prevent weight gain revealed that class-based nutrition education may help college students translate nutrition knowledge into dietary changes (Matvienko O 2001)¹⁴.

3. Summary and Conclusion

Young adulthood is a crucial stage as they are vulnerable to develop unhealthy life style including dietary behaviour. It is important to take care of the nutritional status of female young adults as their dietary behaviour influences that of future generations. The fact that 50% of subjects of both home science and non home science students are malnourished is a matter of serious concern and so nutrition education with academic commitment could be a time and cost effective way to improve nutritional behaviour of college students regardless of their area of specialization and gender.

The study has shown that the present home science curriculum is successful only in improving the nutritional knowledge but it is not getting translated into improved dietary behaviour. So there is a need for wholistic approach which aims at improving knowledge, developing a positive attitude as well as imparting skills to practice it in everyday life. The study highlights the fact that there is an urgent need to develop curriculums targeting specific nutrition behaviours in college students.

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