



IMPACT OF NUTRITION EDUCATION ON THE KNOWLEDGE SCORE OF COLLEGE GOING GIRLS REGARDING OBESITY

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ABSTRACT

The World Health Organization has described obesity as one of today's most neglected public health problems. Acquiring nutritional knowledge is essential for improved diet practices. Nutritional knowledge can be gained by means of nutrition education. The present study was conducted to assess pre and post intervention on nutrition knowledge among college going girls. Purposive sampling technique was used to select 100 subjects between 18-24 years from Manav Rachna International University for the present study. The study was conducted in 3 phases- Pre Intervention Phase, Intervention Phase and Post Intervention Phase. Their nutritional knowledge was assessed with the help of questionnaire. Information, Education and Communication material such as presentation, poster, pamphlet, booklet was developed and used during the intervention phase. Prior to intervention, 69% respondents understood that factors can contribute to obesity in comparison 31% respondents which were not aware of the factors that can contribute to obesity. Post imparting the nutrition education, 74% respondents understood that factors can contribute to obesity but still 26% respondents were not able to understand the factors responsible for obesity. Percentage of respondents knowing the exact definition of trans fat raised from 26% to 46%. In this study, it was found that provision of nutrition education had a significant impact on nutrition knowledge among the subjects. So it can be concluded that nutrition education plays a vital role in improving the nutritional knowledge, which in turn will improve the nutritional status of the respondents.

KEYWORDS: Obesity, Information Education and Communication material, College-going.

INTRODUCTION

Obesity is one of the most serious public health challenges of the 21st century. The problem is global and is steadily affecting many low- and middle-income countries, particularly in urban settings. The prevalence has increased at an alarming rate⁽¹⁾. According to the World Health Organization (WHO), there will be about 2.3 billion overweight people aged 15 years and above, and over 700 million obese people worldwide in 2015⁽²⁾.

Obesity can be defined as a condition of abnormal or excess fat accumulation in adipose tissue, to the extent that health may be impaired. Body Mass Index (BMI), which is calculated as [(weight in kg) / (height in m)²], is considered to be the most useful population-level measure of obesity, and it is a simple index to classify underweight, overweight and obesity in adults. The Asia Pacific has classified overweight and obesity in adults based on various BMI cutoffs⁽³⁾. These cut-offs are set based on co-morbidities risk associated with BMI (Table 1).

Table 1. Classification of overweight and obesity in adults according to BMI

Classification	BMI(kg/m ²)	Risk of co-morbidities
Underweight	<18.5	Low
Normal	18.5-22.9	Average
Overweight	23-24.9	Increased
Obese I	25-30	Moderate
Obese II	>30	Severe

Source : Asia Pacific BMI Guidelines(2012)⁽³⁾.

Nutrition education is a systematically planned set of activities. Nutrition education is an essential component to improve the nutritional status of a population and is crucial for the well being of people in general⁽⁴⁾. Nutrition education is based on different views:-

- One view : Information dissemination approach
- Second view : Facilitating behaviours conducive to health
- Third view : focus on environmental change⁽⁴⁾

Stephen *et al*, (2009) also showed in the study that the main outcome measures were change in nutrition knowledge scores, attitudes to healthy eating and acceptability of the intervention by students⁽⁵⁾. According to Brug *et al*, (2005) a healthy existence is partly dependent on dietary behaviors. One way to promote health promoting dietary habits is nutrition education. In the last decades several potentially important new channels for health communication and nutrition education have emerged⁽⁶⁾.

In the present study, 100 subjects were selected as samples in the age group of 18-24 years by using purposive sampling technique. The study was conducted in 3 phases- Pre Intervention, Intervention and Post Intervention Phase. A structured questionnaire was used to collect data on demographic profile, knowledge, life-style and dietary pattern of respondents during Pre and Post Intervention. Dietary data was collected by 24 hour dietary recall method. Information, Education and Communication material such as presentation, poster, pamphlet and booklet was developed and used during the intervention phase. This was an intervention study of 45 days.

The data was analysed for mean, st^{and} deviation, paired t-test, chi square and correlation by using SPSS software.

Table 2. Distribution of respondents on the basis of knowledge regarding overweight and obesity

	PRE INTERVENTION (N=100)	POST INTERVENTION (N=100)
Difference between overweight and obesity.		
• Yes	63(63)	100(100)
• No	37(37)	-
Term of overweight	33(33)	48(48)
• Body weight 10-20 percent in excess of the ideal weight.		
• Body weight 10-20 percent less than the average expected for one's height, age & sex.	20(20)	27(27)
• Having more than a healthy amount of body fat.	10(10)	25(25)
• Having less than a healthy amount of body fat.	-	-
Term of obesity		
a. Excess accumulation of fat.	36(36)	45(45)
b. Large quantities of food in a short period of time.	11(11)	31(31)
c. Protein or carbohydrate molecules appear intact or as an isolate.	16(16)	24(24)
d. Usually associated with pain in joints.	-	-

Values in parenthesis represents percentage

The data presented in table 2. shows that 63% of respondents knew about the difference between overweight and obesity and 37% of respondents didn't know about the difference between obesity and overweight. But 30% and 27% respondents did not know exactly the definition of overweight and obesity before imparting the nutrition education.

After imparting the nutrition education, 100% respondents knew about the difference between overweight and obesity. Percentage of respondents knowing the exact definition of overweight and obesity raised from 33% to 48% and 36% to 45%.

Table 3. Distribution of respondents on the basis of factors can contribute to obesity

	PRE INTERVENTION (N=100)	POST INTERVENTION (N=100)
Factors can contribute to obesity?		
• Yes	69(69)	74(74)
• No	31(31)	26(26)
Which of the following factors?		
• Active lifestyle	-	-
• Healthy foods	-	-
• Healthy foods and inactive lifestyle	18(18)	7(7)
• Inactive lifestyle and unhealthy foods	51(51)	67(67)

Values in parenthesis represents percentage

Table 3. shows that Prior to intervention, 69% respondents understood that factors can contribute to obesity in comparison 31% respondents which were not aware of the factors that can contribute to obesity. 18% respondents showed that healthy foods and inactive lifestyle can contribute to obesity and 51% respondents showed that inactive lifestyle and unhealthy foods can contribute to obesity.

Post imparting the nutrition education, 74% respondents understood that factors can contribute to obesity but still 26% respondents were not able to understand the factors responsible for obesity. Observation shows that 67% respondents were aware that inactive lifestyle and unhealthy foods can contribute to obesity but 7% respondents still believed that healthy foods and inactive lifestyle can contribute to obesity.

Table 4. Distribution of respondents on the basis of knowledge regarding BMI

	PRE INTERVENTION (N=100)	POST INTERVENTION (N=100)
Heard about BMI?		
a. Yes	64(64)	78(78)
b. No	36(36)	22(22)
Full form of BMI		
a. Body metabolic index	-	-
b. Basal metabolic index	11(11)	18(18)
c. Body mass index	53(53)	60(60)
d. Basal mass index	-	-
Formula of BMI		
a. Weight/age	4(4)	-
b. Height/weight	39(39)	11(11)
c. Age/height	10(10)	8(8)
d. Weight/height	11(11)	59(59)

Values in parenthesis represents percentage

The data presented in table 4. shows that 64% respondents have heard about BMI whereas 36% respondents have not heard about it. 11% respondents didn't know about the full form of BMI and 53% respondents knew about the full form of BMI. 54% respondents didn't know the formula of BMI and 11% respondents knew about the formula of BMI before imparting the nutrition education.

After imparting the nutrition education, 78% respondents were aware about BMI and 60% respondents were aware of full form of BMI whereas 59% respondents become aware about the formula of BMI.

Table 5. Distribution of respondents on the basis of knowledge regarding trans fat

	PRE INTERVENTION (N=100)	POST INTERVENTION (N=100)
Heard about the term trans fat?		
• Yes	47(47)	63(63)
• No	53(53)	37(37)
What do you understand by trans fat		
• Liquid fats are made into solid fats by the addition of hydrogen	26(26)	46(46)
• Fatty acids all have single bonds	10(10)	10(10)
• There is one double bond within fatty acid chain	3(3)	1(1)
• More than one unsaturated carbon bond in the molecules.	8(8)	6(6)

Values in parenthesis represents percentage

Table 5. reports that Prior to intervention, 47% respondents heard about the term trans fat and 53% respondents were not aware about the term trans fat. 26% respondents knew the definition/meaning of trans fat and 21% respondents were not aware about the definition/meaning of trans fat. After imparting the nutrition education to girls, 63% respondents heard about the term trans fat and 37% respondents still were not aware about the term trans fat but only 46% respondents knew the definition/meaning of trans fat.

Table 6. Mean knowledge score

KNOWLEDGE SCORE	PRE INTERVENTION Mean±S.D	POST INTERVENTION Mean±S.D	T-TEST	P-Value
	19±4.34	27±1.97	17.36*	0.00

(p<0.05)*

The data presented in table 6. depicts the knowledge score regarding obesity pre and post intervention. Significant difference (p<0.05) was observed for knowledge score among respondents after providing the nutrition education. Mean±S.D. (19±4.34) of knowledge score regarding obesity was observed before imparting the nutrition education. The increase of 8% with reference to knowledge score regarding obesity was observed after imparting the nutrition education.

Table 7. Data related to efficacy of Information, Education and Communication material of respondents

S. NO.	PARTICULARS	4	3	2	1
A.	Regarding The Presentation				
•	Language used by the speaker	82	18	-	-
•	Volume of speaking	88	12	-	-
•	Information provided through presentation.	66	34	-	-
•	Words are familiar to the reader. Any new words are defined clearly	74	26	-	-
•	Gesture of the speaker during presentation	69	31	-	-
•	Confidence level of the speaker during the presentation	78	22	-	-
B.	Poster				
•	Content provided through poster by the speaker	83	27	-	-
•	Style and size of print are easy-to-read	86	14	-	-
•	Visuals are relevant to text, meaningful to the audience, and appropriately located	77	23	-	-
C.	Pamphlet				
•	Content was relevant to audience	63	25	12	-
•	Each idea is clear and logically sequenced	79	21	-	-
•	Visuals have captions. Each visual illustrates and is directly related to one message	33	58	9	-
D.	Booklet				
•	Content of the booklet	75	20	5	-
•	Size of the booklet	83	17	-	-
•	Pictures in the booklet	86	14	-	-
•	Plain and simple language is used	81	19	-	-

E.	Problem Solving Session				
•	Interaction with the speaker	88	12	-	-
•	Expressions was appropriate of the speaker	86	14	-	-
•	Doubts were clarified	74	20	6	-
•	Sharing the views with the speaker	81	19	-	-
•	Overall impression towards the IEC material	88	12	-	-
•	Learn something new and different by IEC material	92	8	-	-

Values in parenthesis are in percentage

Table 7. shows that process of nutrition education remains incomplete unless the feedback is obtained from the subjects. Thus, data relating to Information Education and communication material was obtain to get feedback from the subjects. Data regarding education on nutrition, physical activity, lifestyle and dietary given to the girls revealed that the major number of respondent graded as the scale of 4 which was faired to be very good. Some of the respondent graded as the scale of 3 which was faired to be good and few of the respondent graded as the scale of 2 which was faired to be average.

CONCLUSION

Nutrition knowledge intervention has definitely created awareness among the selected college going girls. To face the problem of obesity it's important to provide them knowledge about nutrition because healthy life is an essential part of our life. Thus the present study was carried out among the college going girls to evaluate the impact of nutrition education on knowledge regarding obesity . In this study, the selected college going girls were having basic ideas about nutrition but they were lacking in scientific concepts related to nutrition. It was also found that provision of nutrition education had a significant impact on nutritional knowledge among the subjects. So it can be concluded that nutrition education plays an important role in improving the nutritional knowledge, which in turn will improve the nutritional status of the respondents.

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