



# Knowledge, Attitude and Practice (KAP) of using Nutrition Labels among College Girls in Patna

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## Article Info

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## ABSTRACT

Nutritional knowledge plays an important role in raising public awareness and ultimately the health of the person. The improper eating pattern or behaviour has an impact on today's young adults. Consumers should be more concerned about their overall health and well-being. The purpose of this study was to determine knowledge, attitude and practice of nutrition label information among college girls in Patna. A cross-sectional study was conducted on 110 college girls. The data were collected using pre-coded, closed ended questionnaire. Information about the knowledge, attitude and practices regarding food and nutrition labels were collected. Data entry and analyses were performed using Microsoft excel spread sheets. Percentage were calculated to describe the findings. The results of the study revealed that nutrition knowledge and attitude had a low to average impact on consumer's food choice. Half of the consumer reported that they hardly practice reading food label information. And this resulted negative impact on the health of the consumer. To help consumers bridge the gap between their present dietary patterns and dietary recommendations that will be helpful in assisting them in making healthier food choices, there is a lot of work to be done to increase consumer knowledge of the nutrition-related parts of product labelling.

**KEYWORDS:** Information, Food choice, Nutrition, Health, Packaged food

## 1. INTRODUCTION

Nutritional knowledge plays an important role in raising public awareness and ultimately the health of the person. The improper eating pattern or behaviour has an impact on today's young adults. Consumers should be more concerned about their overall health and well-being. Food labels are found to be a very important public health tool that is used to promote a balanced diet [1]. Food labels information assists consumers to better understand the nutritional value of

food and enables them to compare the nutritional values of similar food products and to make healthy informed food choices based on the relevant nutrition information. Date label, nutritional value, health warnings, net weight, production, and expiry date are all included on food packaging labels. Nutritional information on food labels is a vital source of nutrients, yet customers rarely use it. Nutrition labels provide information about the nutrients included in foods and

beverages, and are intended to aid in the selection of healthy foods.

Consumer's use of this information varies, but it is evaluated that around 50 per cent of the population tends to devour the information. Consumer awareness and explanation of nutrient content and dietary recommendations are required when using nutritional information to develop a nutritional eating decision. As a result, in order to grasp or evaluate nutrition information, an individual's understanding and knowledge of it should be strong. However, understanding of nutrition label information, has been found in different ages, groups, genders, and educational labels. Some people are aware of their consumer choices and responsible while other are not. It was noted that the nutrient information displayed on the labels was too technical to understand by the educated consumers [2].

In India food labelling is governed by the food safety and standards act in 2006. Before when packaged foods were sold in Indian markets it was only labelled with the product name, manufacturers name and address, amount of the product in the package its ingredients and date of manufacturing and expiry. But within growing time, nutrient content declaration has been made mandatory on all packaged products. According to the recent regulation and information about the following nutrients is mandatory to be maintained i.e. per serving or 100 g/ml of food: energy (kcal); carbohydrate (g); total sugars (g); added sugar (g); total fat (g) including saturated fat (g); trans-fat (g); and cholesterol (mg). Hence, it is easier for the Indian consumer to get more nutritional information about the packaged food products due to expanded food labelling mandated by the Government of India.

Urbanization has led to a dramatic shift in the food consumption patterns around the world [3]. It has increased the availability of unhealthy food, which contributes substantially as a risk factor to the pandemic of non-communicable diseases (NCDs) along with other lifestyle related risk factors such as physical inactivity, consumption of alcohol and smoking. Though seen mostly during adult life, diet-related NCDs result from unhealthy dietary practices acquired since childhood. Therefore, healthy eating behaviour should be established early in life as a strategy to prevent NCDs.

Snacking from packed food can affect health because they are high in calories, saturated fat, sugar, and sodium. Many variables, including ease of access, limited time, a hectic schedule, and the social component of eating with friends, contributed to the college-aged group consuming more packaged food. There was sufficient evidence that suggested increasing the energy dense foods in a diet coupled with behaviours characteristic of college students, such as eating out and snacking promote weight gain [4]. Snacking among adolescents is higher compared to other age-groups in response to their growth spurt to fulfil their hunger gaps and nutritional demands. In addition, their snacking tendency is heavily influenced by the quest for independence, peer acceptance, self-image and mood. It was crucial to educate college girls on the significance of reading food labels in light of the substantial role that consumers' awareness of food labels plays in helping them make healthy food choices. Therefore this study has aimed to assess consumer knowledge, attitudes and practices on nutrition label in Patna.

## 2. MATERIALS AND METHODS

A cross sectional study was conducted among students attending colleges of urban Patna with a target group of undergraduate students enrolled in degree and diploma courses and were between 18-25 years old. Data was collected from 110 students who agreed to be interviewed. A pre-coded, closed ended questionnaire was used to assess the knowledge, attitude and practices of college students. The questionnaire was pre-tested among 12 students. Based on the pre-test, modifications were carried out by restructuring the sentences and syntax in certain questions. The final questionnaire consisted of 33 questions spread across 5 major sections: socio demographic characteristics of the participants, consumption pattern of packaged snacks, knowledge, attitude and practice related to food label use among the students. The doubts regarding the contents of the questionnaire were clarified by the interviewer. Prior to data collection, informed written consent was obtained from the participants. The collected data was consolidated, tabulated and analysed statically. Data entry and analysis were performed using Microsoft excel spread sheets. Descriptive

analysis was used to calculate frequency and percentage.

### 3. RESULTS AND DISCUSSION

#### Sample characteristics

The study population included 110 college going students. Table 1 describes the sample characteristics of the study population. It covers information such as age, subject stream, family monthly income, nutritionally related subjects studied, and food preferences. The majority (85.45%) of the participants were in the age group 18 - 21 years whereas 14.54 per cent belonged to 22-25 years. 47.27 per cent of participants were pursuing arts discipline in various courses, and most of the students were having family income between Rs. 30,000/- to Rs. 60,000/-. More than half of the participants (54.3%) had studied nutrition related subject in their courses. It was also found that 28.18 per cent of participants were vegetarian, 28.18 per cent were non- vegetarian and 43.63 per cent were ovo-vegetarian.

#### Consumption pattern of packaged snacks among respondents

Table 2 depicts the snacking behaviour of the study participants. It was reported that 67.27 per cent of the respondents received pocket money for food and drinks whereas 32.72 per cent did not receive pocket money. About 57 per cent consumed packaged snacks 2-3 times a week whereas 42.72 per cent consumed more than 5 times a week. Also, a maximum per cent of respondents snacked with their siblings and friends. Among the participants who had the habit of snacking in between the regular meals, a large number (53.63 %) did mid-morning snacking. The most frequently consumed packaged food snacks were chips/puffed (39.09%) followed by chocolate (37.27%), fruit juice (30%), biscuits (14.54%) and cakes (7%).

#### Knowledge of nutrition label information on packaged snacks among respondents

Table 3 presents the knowledge of respondents on nutrition label information on packaged snacks. The findings shows that 70.90 per cent of the respondent had knowledge regarding nutritional information whereas 29.09 per cent were still unaware about it. Based on the study 75.45 per cent of the consumer reported their knowledge about the ingredient list. The

majority of the participants were aware of standard marks, while 20 per cent were still unaware. It was also perceived that 56.36 percent of the participants saw additives on the food packet considering that 43.63 per cent of the respondent had never seen it. Result concerning allergen information exhibit that 47.27 per cent had information. The current study findings showed that majority (85.45%) respondents had knowledge regarding veg and non- veg marks on the food packet.

A recent study found a sound knowledge about food labels and the functions of the regulatory authority in India among medical students in Chennai [5]. A student should have sound knowledge of food labels and the laws governing food and nutrition labelling because it will help them raise awareness among others. In order to maintain their health, it's crucial for them to practise using food and nutrition labels correctly.

#### Attitude of using nutritional label information on packaged snacks among respondents

The attitude of using nutritional label information on packaged snacks among participants is shown in Table 4. When asked about the perception regarding taste, packaging, expiry date, manufacture date and vegetarian/non-vegetarian marks, majority of the participants reported this factors were most important for them. From the above table it is quite clear that 55.45 per cent students found ingredients list as important whereas 22.72 per cent found it least important. Similarly, 44.54 per cent respondents found serving size important for them whereas 32.72 per cent found it least important. Based on the findings 90.90 per cent of the consumers mostly saw expiry date, the most common reason for checking was due to health related reasons.

A current study on consumers awareness and status of food labelling in selected supermarket of Puducherry [6] investigated that the awareness of food labels on prepacked food items was reported by 92.2 per cent of the participants and 93.3 per cent preferred food items with label. The cost, instructions for use, ingredients, manufacturers and expiry date was checked by majority of the participants.

#### Practice of reading label information on packaged snacks among respondents

Table 5 shows the practice of reading labels information on packaged snacks among participants. Results from

the study indicated that most of the consumer (79.09%) checked the price before buying the product. Price of the product was an important consideration for the respondents before buying them. Furthermore, majority of the respondents (72.72%) had a preference to buy branded packaged food products. Only 43.63 per cent respondents checked the portion size on the packaging of their food products, compared to 11.81 percent who never did so.

About 88.18 per cent respondents had a practice of checking manufacture date and expiry dates of packaged food items because they were aware that eating food that had become expired was harmful for them. Results of the similar study conducted in Bahrain by Wahab (2018) reported 60.9 per cent of the respondents always read production and expiry date which was which is low as compared to the present study [7].

Out of 110 respondents, only 12.72 per cent respondents had a practice to see nutritional information on the packaged food products and they also reported that sometimes it affects their choices to purchase the packaged food. In addition, 60 percent of respondents said they occasionally checked the nutritional information on the packaging of food products, while 5.45 percent said they never did. The present findings are divergent from the findings of Riaz et al. (2022) who revealed female health sciences students "often" use the food label during food purchasing decisions [8].

Furthermore, about half (48.18%) of the respondents sometimes read the allergen information because they were concerned about their health whereas 16.36 percent respondents reported they always read the allergen information but 31.81 per cent respondents rarely read it. About 30 per cent of respondents claimed they regularly checked the food marks on packaged food products, compared to 48.18 per cent who said they did so occasionally and 5.45 per cent who said they never did.

Additionally, the findings indicates that adolescents were selective while reading labels. The manufacture and expiry dates appeared to be more important to them than the nutrition information. Reading labels frequently is a good practice that should be ingrained in a person starting from childhood. When respondents could comprehend nutritional labels more

easily, the impact of nutritional labels on purchasing behaviour increased. This was explained by the fact that once respondents were able to analyse the information given, they could further process the information to identify which food products best suited their nutritional needs.

#### 4. SUMMARY AND CONCLUSION

Results from the study indicated that majority of the students were knowing the importance of food labelling such as price, manufacture/expiry date, brand name, nutritional information before buying the packaged food products. It might be that the respondents were undergraduate college students who were already familiar with food labels. However, the consumers were concerned more about the manufacture/expiry date of the product. Another major finding was that half of the consumers checked the price followed by taste. However, packaging and serving size was checked only by one third of the consumer. Awareness and practice of consumers regarding brand name and food marks were found common among the respondents. Half of the respondents reported the level of awareness and understanding regarding food labels whereas the food items was reported very less.

#### LIMITATIONS AND FUTURE RESEARCH

This current study focused solely on the purchasing habits of students and had a small sample size that only covered some colleges of Patna. The level of customer awareness may not be entirely generalised due to sample size. Additionally, just a few statistical methods, including frequency and percentage, are used to analyse the data. However, this study is significant and offers guidance for future research in the area of consumer rights and awareness.

Future studies on various regulatory, political, sociocultural, and economic environmental aspects can be done using big samples across several fields. The study can also be conducted to examine consumer awareness, perceptions of consumer rights, and their effects on purchasing patterns in relation to various demographic factors, including gender, age group, occupation, urban and rural consumers.

### Conflict of interest statement

Authors declare that they do not have any conflict of interest.

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**Table 1:- General characteristics of the participants (N=110)**

Characteristics		Number (%)
Age group (years)	18-21	94 (85.45)
	22-25	16 (14.54)
Subject stream	Arts	52 (47.27)
	Science	31 (28.18)
	Commerce	27 (24.54)
Family monthly	Below Rs. 30,000 /-	12 (10.90)

income	Rs. 30000 – 60,000 /-	64 (58.18)
	Rs. Above 60,000/-	34 (30.19)
Studied nutrition related subject	Yes	81 (73.63)
	No	29 (26.36)
Food preferences	Vegetarian	31 (28.18)
	Non – Vegetarian	31 (28.18)
	Ovo – Vegetarian	48 (43.63)

**Table 2:- Consumption pattern of packaged snacks among participants (N=110)**

Characteristics		Number (%)
Received pocket money for packaged snacks	Yes	74 (67.27)
	No	36 (32.72)
Frequency of consumption of packaged snacks	> 5 times a week	47 (42.72)
	2 - 3 times a week	63 (57.27)
	Never	0 (0)
Snacking with friends/siblings	Yes	98 (89.09)
	No	12 (10.9)
Time of snacking	Mid-morning	59 (53.63)
	Evening	39 (35.45)
	After dinner	12 (10.9)
Most commonly consumed packaged snacks	Biscuit	16 (14.54)
	Cake	7 (6.36)
	Chips / Puffed	43 (39.09)
	Chocolate	41 (37.27)
	Fruit Juice	33 (30)

**Table 3:- Knowledge of nutrition label information on packaged snacks among participants (N=110)**

Characteristics	Numbers (%)	
	Yes	No
<b>Nutritional information</b>	78 (70.90)	32 (29.09)
<b>Ingredients list</b>	83 (75.45)	27 (24.54)
<b>Standard marks</b>	88 (80)	22 (20)
<b>Food additives</b>	62 (56.36)	48 (43.63)
<b>Allergen information</b>	52 (85.45)	58 (14.54)
<b>Veg / non-veg marks</b>	106 (85.45)	4 (14.54)

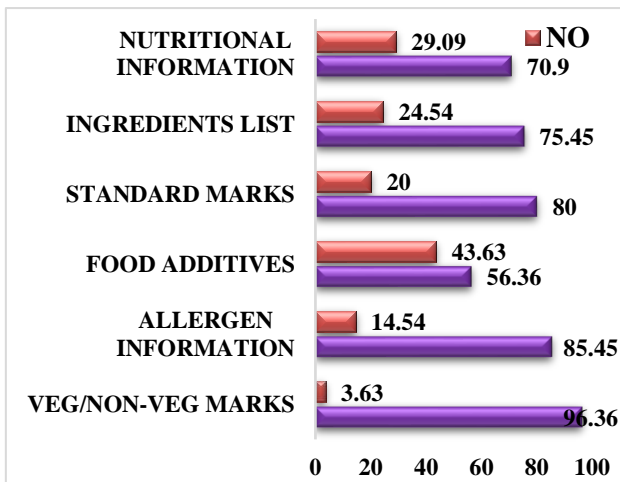


Figure 1:- Knowledge of nutrition label information on packaged snacks among participants

Table 4:- Attitude of using nutritional label information on packaged snacks among participants (N=110)

Characteristics	Numbers (%)			
	Most Important	Important	Least Important	Not Important
Price	25 (22.72)	73 (66.36)	10 (9.09)	2 (1.81)
Taste	83 (75.45)	21 (19.09)	3 (2.72)	3 (2.72)
Ingredients	23 (28.90)	61 (55.45)	25 (22.72)	1 (0.90)
Packaging	68 (61.81)	27 (24.54)	9 (8.18)	6 (5.45)
Expiry Date	100 (90.90)	9 (8.18)	1 (0.09)	0 (0.00)
Manufacture Date	90 (81.81)	15 (13.63)	2 (1.81)	3 (2.72)
Nutritional information	19 (17.27)	76 (69.09)	14 (12.72)	1 (0.90)
Serving size	18 (16.36)	49 (44.54)	36 (32.72)	7 (6.36)
Food marks	48 (43.63)	50 (45.45)	8 (7.27)	4 (3.63)
Veg / Non-veg marks	69 (62.72)	20 (18.18)	7 (6.36)	14 (12.72)

Table 5:- Practice of reading label information on packaged snacks among participants (N=110)

Particulars	Numbers (%)
<b>Price</b>	
Yes	87 (79.09)
No	5 (4.54)
Sometimes	18 (16.36)
<b>Brand name</b>	

Yes	80 (72.72)
No	4 (3.63)
Sometimes	26 (23.63)
<b>Manufacture/Expiry date</b>	
Yes	97 (88.18)
No	2 (1.81)
Sometimes	11 (10)
<b>Serving amount</b>	
Yes	48 (43.63)
No	13 (11.81)
Sometimes	49 (44.54)
<b>Nutritional information</b>	
Always	14 (12.72)
Sometimes	66 (60)
Rarely	24 (21.81)
Never	6 (5.45)
<b>Allergen information</b>	
Always	18 (16.36)
Sometimes	53 (48.18)
Rarely	35 (31.81)
Never	04 (3.63)
<b>Food marks</b>	
Always	34 (30.90)
Sometimes	53 (48.18)
Rarely	17 (15.45)
Never	06 (5.45)

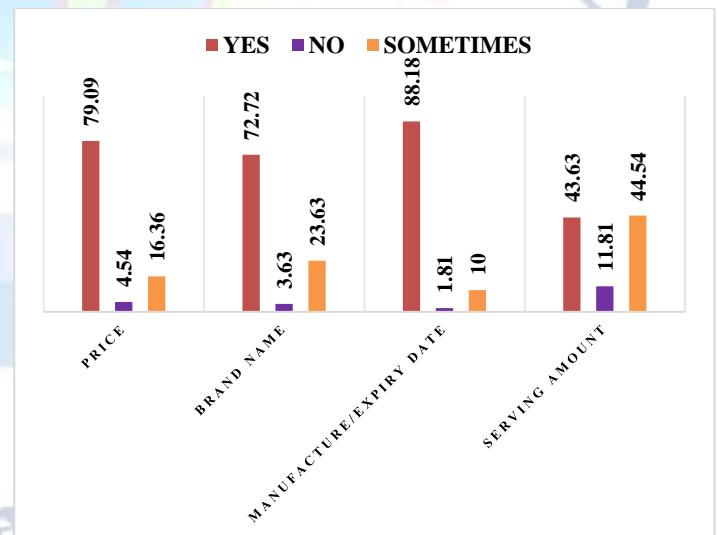


Figure 2:- Practice of reading price, brand name, expiry/manufacture date and serving amount on packaged snacks among participants

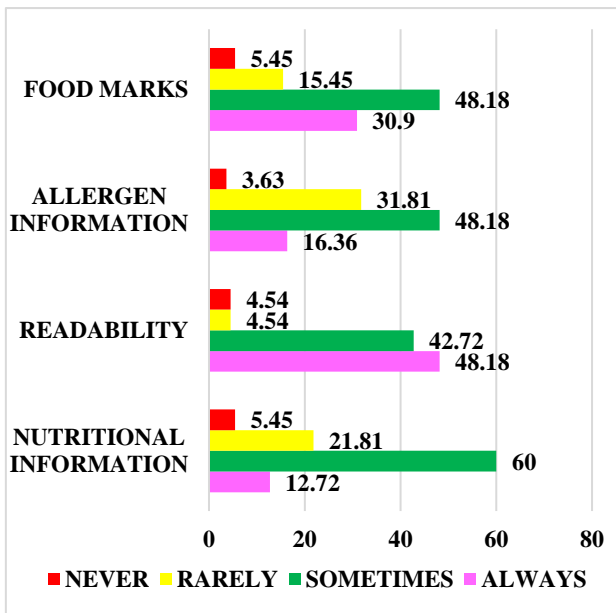


Figure 3:- Practice of reading food marks, allergen information, readability and nutritional information among participants