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Knowledge, attitude and practice of using food label information among undergraduate medical students: A cross sectional Study

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ABSTRACT

Background

India is facing an evolving challenge of double burden of malnutrition. Over the past 20 years there is steep rise in consumption of packaged food items in the developing countries. The medical students should have a sound knowledge regarding the food labels present on the packaged food items. This will help them in consuming healthy diet and also advising appropriate diet to their patients.

Methods

A cross sectional study was conducted among undergraduate medical students of a medical college. All the students of first three years were invited for the study. Data was collected by using self-administered questionnaire. Collected data was analysed using descriptive statistics.

Results

Most of the students were aware about the agency responsible for food safety and supervision in India. The knowledge of participants regarding various regulations of agency and food labelling was poor. Participants were aware that food labels help in choosing right kind of food.

Conclusion

The present study highlights the considerable gap between the attitude towards food labelling and the actual practice. Participants had a positive attitude towards the use of food labels but their food labelling utilisation for nutritional information was poor.

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INTRODUCTION

India is home to the second largest population in the world. The country is facing an evolving challenge of double burden of malnutrition[1].In the 2022 Global Hunger Index, India ranks 107th out of 121 countries, with a score of 29.1, the country has a level of hunger that is serious[2]. However, the number of overweight children has increased to 3.4 percent in NFHS-5 as compare to 2.1 percent in NFHS-4. The percentage of overweight women increased from 20.6 percent to 24 percent while in men the number increased from 18.9 percent to 22.9 percent, according to NFHS-5[3]. Dietary factors are the leading causes of burden of diseases from cardiovascular diseases. In the year 2016 these factors contributed 51.8% and 59.4% of the total disability adjusted life years[4].

Over the past 20 years, there has been an almost 300% rise in consumption of packaged food in developing countries[4,5]. Most of these packaged food items contain food labels[6]. Labelling is defined as "Any words, particulars, trademarks, brand names, pictorial matter or symbol relating to a food stuff and placed on any packaging, document, notice, ring or collar accompanying or referring to such food stuff"[7]. Food labels provide information about nutrient content of food, manufacturing and best before use date of food, price, etc. It helps the consumers in choosing right kind of food[8]. Food labelling can help people to keep track of what they eat and hence prevent non communicable diseases[9].Use of food labelling decrease the desire of using unhealthy food[10]. Large number of data is available that supports the importance of food labels; however, results of previous study revealed a lack of knowledge about food labels[11]. Studies also shows that women use food labels more as compare to men and nutritive value of the food is an important determinant of food choices of an individual[13].

The medical undergraduate students as an educated group of society must have a sound knowledge about food labels. Sound knowledge and positive attitude towards utilisation of food labels is important among medical students. It will help them in advising to their patients and family members regarding healthy food. Medical students are also often away from their homes, they tend to skip meals and eat food items that are easily available.

Objective

To estimate the knowledge, attitude and practice about food labelling among medical students.

Materials and Methods

A cross sectional study was conducted at Government Medical College Rajouri in Jammu and Kashmir, India. The participants involved in the study were MBBS students of 1st, 2nd and 3rd Year. During the first three years of professional course the MBBS students are supposed to study Community Medicine. This speciality specifically focuses on the teaching of nutrition i.e., Food safety regulation, Food Hygiene, etc. All the students of three years were included in the study. Out of 337 students 228 students participated in the study. The questionnaire was prepared after reviewing the existing literature. Content validation of the questionnaire was done by a team of three members. Pre- test was conducted among 11 students. Based on this minor modification were carried out in the Questions. The final questionnaire was divided into four sections a) Socio demographic profile of participants b) Knowledge regarding food safety regulations and food labelling c) Attitude towards food labelling and d) Practice of using food labels.

Data Collection and analysis:

We approached the students at the end of their class lecture. The questionnaire paper was distributed among the students and they were given 30 minutes to answer the questions. The participants provided written consent before the actual data collection.The data was checked for its consistency and entered into MS Excel Sheets. The Data was analysed using SPSS version 20.

Ethical Statement: The study was reviewed and approved by Institutional Ethics Committee. Informed consent was obtained from all participants.

Results

Out of the 337 students 228 participated in the study. Table 1 shows the characteristics of study participants. Maximum number of participants were from 3rd year (Pre final). 53.9% were males and 46.1% females.69.7% of students have father with education level graduation and above and 41.2% of students have mother with education level graduation and above. 21.4% of participants were doing daily exercise.

Table 1:Characteristics of the study participants

Characteristics	Categories	N (%)
Year of study	1st Year	68(29.8)
	2nd Year	79(34.6)
	3rd Year	81(35.5)
Sex	Male	123(53.9)
	Female	105(46.1)
Age	19-21 Years	207(90)
	>22 Years	21(10)
Education of Father	Graduation and above	159(69.7)
	10-12th class	46(20.1)
	<10th class	23(10)
Education of Mother	Graduation and above	94(41.2)
	10-12th	70(30.7)
	<10th class	64(28)
Do you follow a strict diet?	Yes	26(11.4)
Do you do daily exercise?	Yes	49(21.4)
Do you perform regular meditation?	Yes	72(31.5)

The knowledge regarding food labelling and food safety regulation was poor (Table 2). Although 82.8% were aware regarding the agency responsible for supervising and regulating food safety in India, only 23.2% were having knowledge regarding food safety display board. 32% of participants having knowledge of trans fat content in "Trans-fat free" food packages.

Table 2:Knowledge Regarding Food Safety Regulation and Food labelling

Question	Number of Participants who gave correct response, n (%)
The Authority responsible for regulating and supervising food safety in India is (a) NITI Ayog (b) FSSAI (c) CDSCO (d) None of the above	189(82.8)
Mark the correct combination of colour code for the food safety display board (a) Purple= Restaurant (b) Meat Retail=Blue (c) Fruits &Vegetable=Brown (d) Liquor retail=Grey	53(23.2)
The size of the principal display panel (where all information is grouped together) must vary according to the size of the package (a) Yes (b) No	107(46.9)

Trans fat content in "Trans-fat free" food packages is (a)Less than 1 grams per 100 grams of food (b)Less than 0.5grams per 100 grams of food (c)Less than 0.2grams per 100 grams of food (d)Zero per 100 grams of food	73(32)
As per FSSAI regulation the total content of fat in chocolate by weight should be (a)Not less than 50% (b)Not less than 25% (c)Not less than 15% (d)Not less than 75%	61(26.7)

Majority of the participants had positive attitude toward food labelling (Table 3). 30.2% were strongly agree that nutritional information on food packages affects their decision of purchasing food packages. 81% of participants always check "best before" date and 42% always check veg/non veg symbol.

Table 3:Table Attitude toward food labelling

Statement	Strongly agree	Agree	Neither Agree nor Dis agree	Disagree	Strongly Disagree
Food label helps people to regulate their calorie intake	104(45.6)	93(40.7)	27(11.8)	3(1.3)	1(0.4)
Food label helps people with Hypertension, Obesity, Diabetes, allergies, and etc. to look for ingredients to avoid	119(52.1)	82(35.9)	18(7.8)	4(1.75)	5(2.19)
People should take time to read food labels carefully before buying foods	108(47.3)	103(45.1)	14(6.14)	3(1.3)	0
Food labels help in maintaining balanced diet	89(39)	124(54.3)	9(3.94)	4(1.75)	2(0.8)
Nutrition information on food label affects my decision of purchasing food?	69(30.2)	62(27.1)	37(16.2)	42(18.4)	18(7.8)

DISCUSSION

The study focused on understanding the level of knowledge, attitude and practice of using food labels among undergraduate medical students. The results of this study show that most of the students are aware about the agency responsible for supervising and regulating the food safety in India. However, the knowledge regarding various regulation of the agency and food labelling is poor. This is contrary to a study conducted by Annamalai et al[6], the reason can be variability in the questionnaire to assess the Knowledge. In our study 23.2% of the participants marked the correct combination of colour code for the food safety display board. However, in a similar study conducted by Saha S et al[4], where they studied the knowledge of the participants regarding quality symbols on food labels about 60% of the study participants recognised the symbol but had no knowledge of what they indicated.

The attitude of the students towards the use of food labels was positive, they are aware of the utility of food labels. They know that food labels help in choosing right kind of food and is beneficial for the people suffering from various kinds of diseases. The similar findings were obtained in a study conducted by Annamalai et al[6], and Malek MA et al[16].

The reading habits of food labels among students was good. Most of the participants read best

before date or the date of manufacture on the label. The second most commonly used information is price label. A very small percentage of participants read the nutritional information on the food label. The practice of using food labels was similar in previous studies conducted in India and South Africa[14,15]. There is a need to create awareness regarding nutritional information available on the food label. It will help in promoting the use of nutritional information on food labels.

Table 4:Practice of using food label

Statements	Always	Often	Sometimes	Rarely	Never
How often do you read food label	87(38.1)	70(30.7)	34(14.9)	8(3.5)	29(12.7)
How often do you check "Best Before" date	186(81.5)	19(8.3)	16(7)	7(3)	0
How often do you check Veg/Non-Veg symbol	97(42.5)	85(37.2)	19(8.3)	22(9.64)	5(2.19)
How often do you Check Price label	143(62.7)	53(23.2)	28(12.2)	4(1.75)	0
How often do you read nutritional information	11(4.8)	22(9.64)	15(6.5)	117(51.3)	63(27.6)
How often do you look brand name	32(14)	109(47.8)	63(27.6)	18(7.8)	6(2.6)

LIMITATION

The study was conducted in a medical college so the results cannot be generalised. The label reading habits of the participants are self-reported and the study did not attempt to verify them. Further studies are required to validate the findings. However, despite the limitation the study provides the valuable information regarding the use of food labels.

CONCLUSION

The present study highlights the considerable gap between the attitude towards food labelling and the actual practice. Participants had a positive attitude towards the use of food labels but their food labelling utilisation for nutritional information was poor. There is a need to educate the undergraduate students regarding nutritional information available on the food labels.

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