SHORT ARTICLE

Knowledge, Attitude and Practice of Reading Food Labels among Students of Health Profession Education

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ABSTRACT

Background: The increasing rates of NCDs and the younger age of onset mandates immediate action with regard to prevention and health promotion. One of the major reasons attributed is the unhealthy dietary choices and increased consumption of ultraprocessed food and its mindless consumerism. Aim and Objectives: The aim of our study was to determine the Knowledge, Attitude, and Practice (KAP) of reading food labels among students of health professions education. **Methodology**: A total of 487 students were enrolled in our study by means of convenience sampling. All consenting students were given a standardized questionnaire and data was analyzed using R studio. **Results**: A logistic regression analysis of KAP scores revealed that gender, program of study, diet preferences and food allergies play a significant role in food label reading practices and that only 20% of the students had a good KAP score. Commonly prioritized information when reading food labels included expiry date, price, and if the food was vegetarian. **Conclusion**: Although health profession students are aware of the importance of reading food labels, practice of the same was found to be relatively unsatisfactory emphasizing the need for awareness.

KEYWORDS

Food Label; Kap Scores; Health Science; Undergraduate Students; Nutrition Habits

INTRODUCTION

Non communicable diseases (NCD) are a major cause of death globally and more in the Lower- and Middle-income countries and obesity is a key risk. The annual growth rate of adults with high BMI in India (2020–2035) is 4.1%, according to the World Obesity Atlas 2024(1).

Lifestyle factors such as diet, physical activity, environment and substance abuse play a key role in the development of obesity. Recent shifts in young adults' diets, particularly increased consumption of fast food, ultra-processed foods, and online ordering, have contributed to the rising prevalence. A quick look at food labels can help change unhealthy eating choices and may be a small step towards healthy eating. Labels provide key information like transfat, sugar,and calories, which are crucial for making healthier choices and managing long-term health. While it is a significant determinant of healthy food choices, only few recent studies have been published in this aspect which shows major lacunae in the thrust given on reading food labels (2,3). Health professionals play a crucial role in educating the public on the risk factors of various diseases. However, this cannot be practiced without understanding the knowledge gap among health professionals. There are limited studies on health profession students in the Indian context.

Objective :To find out the Knowledge, Attitude and Practice(KAP) of reading food labels among students of health professions education in an urban city and the determinants of the same.

MATERIAL & METHODS

Study type and study design: This cross-sectional study was conducted in a health campus for a duration of four months (June to September, 2023).
Study population: A convenience sampling method was used to recruit students enrolled in Medical and Paramedical courses (Nursing, Physiotherapy and Pharmacy Programs).
Sample size: A total of 487 students from first and second year of undergraduate program consented and participated in the study (343 students from Medicine and 144 from paramedical courses).
Data collection: A semi structured questionnaire was developed based on the International Food Information Council Foundation's Food labeling survey conducted in 2019 in partnership with the American Heart Association (AMA) (5). The questionnaire had four questions related to Knowledge, five questions related to Attitude and five questions related to Practice of reading of food labels. The questionnaire was modified based on a similar study by Gopichandran V et al. (2). A score of less than 50% was classified as a poor KAP score, 50-75% a moderate score and above 75% as a good score. Self-reported height and weight were used to assess Body Mass Index (BMI).

Ethical considerations and informed consent: Institutional Ethics Committee approval (PSG/IHEC/2023/Appr/Exp/130) and permissions from the Heads of Institution were obtained before commencing data collection. Students were briefed about the study in class and the questionnaire was sent to them as a Google survey form. Online consent was obtained before the students filled in the form.

Data analysis: The data was analyzed using R software (v4.3.1). Categorical variables were represented in terms of frequencies and percentages, continuous variables were provided as Mean ± SD/Median (Min, Max). Regression analysis was used to study the factors affecting food label reading using logistic regression method, odds ratio and p values were reported for all variables.

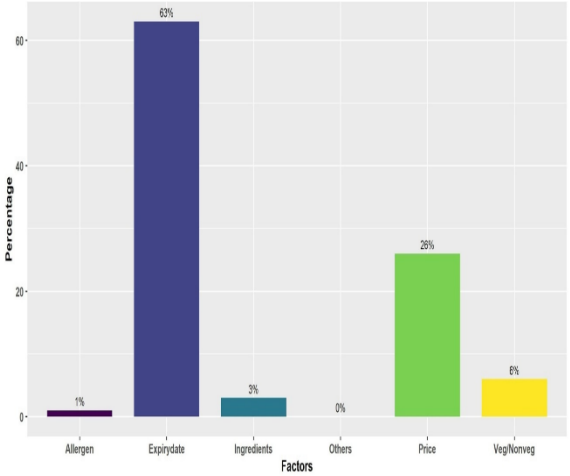
RESULTS

A total of 487 students participated in this study, 343 from Medicine and 144 from paramedical courses. These students were in their first and second year of study. The characteristics of the study population are shown in Table 1.

Table 1: Demographic details of the study population

	Categories	N (%)
Course	MBBS	343 (70%)
	Others	144 (30%)
Gender	Male	154 (32%)
	Female	333 (68%)
Age	16 – 18	273 (56%)
	19 – 22	209 (43%)
	>22	5 (1%)
BMI	<18 (undernourished)	55 (11%)
	18.01-24.99 (normal)	326 (67%)
	25-29.99 (overweight)	75 (15%)
	≥30 (obese)	31 (6%)
Overweight	TRUE	104 (21%)
	FALSE	383 (79%)
Diet	Yes	46 (9%)
	No	441 (91 %)
Allergens	Yes	225 (46%)
	No	262 (54%)

Figure 1: Information prioritized by students while reading food labels



While responding to the question on reading food labels, about 175 (36 %) students said they read food labels, 262 (54%) responded sometimes and 50 (10%) said they do not read food labels . When looking for healthy options, about 129 (26%) students always keep an eye for healthy options and 345 (71%) students occasionally look for healthy options whereas, remaining 13 (3%) students never look for any healthy options. We observed that approximately 45% (n=219) of the students look for information about Calorie, Fat, Trans Fat, Carbohydrate, Protein, Total sugar, Iron, Sodium, and Vitamins. The analysis suggests that students prioritize certain information while reading food labels(Figure 1) .KAP scores were calculated from students responses, we observed that 97 (20%) students had a good score, 297 (61%) students had a moderate score and 93 (19%) had a

poor score. A logistic regression analysis of KAP scores revealed that gender, program of study, diet preferences and food allergies seem to play a significant role.

Table 2: Multivariate analysis of the KAP score and characteristics.

Characteristics		Odds ratio	Confidence interval		P value
			Lower	Upper	
Course (reference MBBS)	Others	0.025	0.0015	0.4228	0.0109*
Age group (reference 16 - 18)	19 - 21	1.34	0.0956	18.813	0.8278
	>22	11.4	0	47	0.7127
Gender (reference Female)	Male	0.4593	0.0281	7.509	0.5855
BMI (reference Normal)	Under	0.7941	0.0121	52.32	0.9141
	Over	0.8739	0.0221	34.62	0.9428
	Obese	0.192	0.009	42.49	0.5494
Overweight (reference False)	TRUE	0.365	0.0153	8.6901	0.5335
Diet (reference No)	Yes	9.55	0.1127	80.9	0.3196
Allergens (reference No)	Yes	659	51	838	0.0001*

**P value < 0.05*

DISCUSSION

More than a third of students claim to read food labels and more than half said they read them sometimes. This is in coherence with the study conducted by Christoph et al (8,9). We found that most of the students look for the expiry date before buying a product and more frequently check the product name, brand, and price than the ingredients or nutrition label. Medical students showed better knowledge and more frequent use of food labels compared to allied health students, similar to findings (4). Our study found that students prioritize viewing the price and the brand over more important information like the nutrition label and ingredients list. This is perhaps due to the rise of marketing techniques and advertisements that lure the customer into buying a particular product from specific brands. We found that female students were more aware of the importance of reading food labels than males. Students on a diet were also more likely to read labels, likely due to health consciousness and concern about meeting their nutritional goals. These findings align with the study by Giró-Candanedo et al.(6). Students with allergies read food labels more frequently than those without, likely due to concerns about ingredients that may be potentially harmful to them.

Surprisingly, whether or not the student was overweight did not seem to have an influence on student food label reading habits. This was also noted in a study by Bryla P et al. where there was no significant correlation between BMI and food label reading.(7). Ideally students who are overweight are expected to make a conscious effort to decrease their consumption of unhealthy food products which would be more evident to them if they read the food label. However, other influencing factors include socio-demographic characteristics, life-style aspects and consumer interest (10).

Our results are in coherence with the study conducted by Gopichandran et al. in findings such as female students being more aware about the importance of food labels, frequency of students that look for expiry date and date of manufacturing (2). However, contrary to their study, we found that many other factors like BMI, gender, and diet did influence the knowledge, attitude and practice of reading food labels.

Our results emphasize the significance of creating awareness so they can make more informed diet choices and they can recommend better nutritional options to others as well (9). A few limitations of our study include limited sample size of health profession students and bias that may arise due to convenience sampling method. Information about height and weight was self reported by the students hence it may not be completely reliable. However, despite the limitations, we believe that these results provide valuable insights on the use and the factors influencing food label reading habits amongst health professional students and will provide a foundation for further research and policy decisions.

CONCLUSION

This study analyzed the knowledge, attitudes, and practices of food label reading among health profession students in an urban setting, identifying key influencing factors and also reiterates the need to educate them in this key skill for promoting a healthy lifestyle.

RECOMMENDATION

Education on the importance of reading food labels by awareness programs and inclusion of this competency in the curriculum for health science students.

Limitation of the Study

Limited sample size of health profession students and bias that may arise due to the convenience sampling method used.

Relevance of the Study

This study provides valuable insights on the KAP of reading food labels amongst health science students and throws light on the need for better awareness on the topic in order to lead a healthy lifestyle.

Authors Contribution

All authors have contributed equally.

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Nil

Conflict of Interest

There are no conflicts of interest.

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Declaration of Generative AI and AI Assisted Technologies in the Writing Process

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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