



Review Article

Food Label and its Influence among Indian Consumers - A Review

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Abstract

Food Labels are a preface to packaged foods. There is an important component known as Nutrition Facts Panel (NFP), which precisely gives the amount of macro and micronutrients per 100g or one serving. Consumers were found to read them but do not alter their purchasing behavior accordingly. Therefore this study aims in identifying the hindering factors in food label usage. Articles done from 2013 to 2021, published on PubMed, Research Gate, Google Scholar and other independent Indian and International Journals on Indian population were reviewed. Certain factors like: education, gender, income and area of residence had an impact on reading and purchasing foods. Other major factors found to be hindering food label usage were knowledge of the buyers. This study concluded by recommending mandatory food labeling requirements

in all Indian food products and to provide proper education and awareness to consumers to enable them to select healthier food choices in future. Further studies were also required to be done on a larger scale to generalize the findings and correct the narrow paths.

Keywords: Food label; Packaged foods; Food label knowledge; Consumer

1. Introduction

India is the world's second largest producer of food next to China, and has the potential of being the largest in the food and agricultural sector. The food processing industry is one of the biggest industries in India- and is ranked fifth in terms of production,

consumption, export and expected growth. The food sector has been witnessing a drastic change in consumption pattern especially in terms of food. Eventually, diet-related health issues have increased intensely from the last few years across the globe. It has become significant that the consumer must have knowledge of the product they are consuming. The best way to inform the consumer about the product and the nutrients it carries is to provide information about the product. Food label on the product plays the role of informing the consumer about the product, its ingredients and nutrients it contains. A label provides basic product information (including common name, list of ingredients, net quantity, shelf life, grade/quality, vegetarian society logo, country of origin, name and address of manufacturer, dealer or importer and food standards agency [1]). It also provides health, safety, nutrition information which includes instructions for safe storage, handling, nutrition information such as quantity of fats, protein, carbohydrate, vitamins & minerals and preservatives, colors, if used any, quantity per serving of stated size of food (in the nutrition facts table) and specific information on products for special dietary use. Moreover, It also acts as a vehicle for food marketing promotion and advertising promotional information and claims such as ‘low fat’, ‘cholesterol free’, ‘high source of fiber’, ‘natural’, ‘organic’, ‘no preservatives added’[2]. Awareness and knowledge together with correct delivery of nutritional facts are interrelated which can form the consumer’s choice of food. Therefore, this review aims at highlighting the existing literature on the socio-demographic, knowledge, attitude and preference as well as the health related factors which affect the usage of food labels and also factors influencing label usage among Indian consumers with the following objectives

- Association between socio-demographic characteristics and food label usage
- Association between knowledge, attitude and use of food labels.
- Reasons for non-usage of food labels by people.
- Most commonly checked information on food labels.

2. Methodology

The current study is a descriptive in nature and is based on secondary data collected from various research papers, review papers, e-sources like PubMed”, “ResearchGate” and “Google Scholar” using the keywords “food labels”, “nutrition labels”. Only Indian articles published from 2012 to 2022 were considered along with other international articles as references.

3. Background studies

Association between socio-demographic characteristics and food label usage-

a. Education

Consumer’s education is one of the factors of food label usage [3]. Awareness on pre-packaged food labels was found to be associated with education of the consumers. Understanding and interpreting on nutrition labels is attributed only to education. Health-related information on the food labels is clearer and educated people are more aware of what they eat and its association with their health [4,5] People who have higher educational qualifications found it easier to interpret nutrition labels than those with lesser or no education at all. It was also proved that less educated people found difficulty in understanding the technical terms used in the food labels [6,7]. However, there are contrasting studies

which proved that educational qualification of consumers barely had any effect over knowledge of nutrition labels. People with lack of time but with adequate education were found to be purchasing without looking at the food label, which proves that education had no association with the habit of reading nutrition labels [8].

b. Age

Knowledge of food labels is significantly associated with age. Age of the consumers determines the level of importance they show towards reading and understanding food labels. The younger population was found to be more cautious in buying foods according to nutritional composition and health claims than older people.

c. Gender

Women were found to spend more time purchasing which eventually led them to read the nutritional content [9]. Women were found to be more concerned about calories, micronutrients like vitamins and minerals, fat, salt and sugar intake. Though adequate information on females using food labels more than males was not proved, it can be a controversy in some cases too [10,11].

d. Income

People with higher income have the choice to compare similar food products with differing rates than those who can afford only one particular type of food. Certain consumers were also found in wasting their income on junk foods rather than eating nutritious food which can be afforded by them. They also find it time consuming on shopping due to work to earn a good income [12,13].

e. Household Size

The structure of the family is one of the key aspects in determining the usage of food labels. Increase in members of a family might lead to poor food choices as they won't be able to afford healthy food for everyone. Another major aspect is satisfying everyone at home which is very difficult especially in large household composition. Household size was also being deemed as not associated with food purchase behavior in some contrasting studies [14].

f. Area

The locality in which people reside also determines their usage of food labels in purchasing foods. Urban residents in India were found to be more aware of the importance of food labels while those in rural areas don't know them or are not educated enough to understand or afford them. Health education and social media campaigns could help increase awareness among rural people which will help them to make healthier choices [15].

Association of Knowledge, Attitude and food label use

Nutrition knowledge and awareness has a significant impact on understanding and utilization of food and nutrition labels by the consumers. Better diet quality could be achieved with better nutritional knowledge. The foods that are familiar to the consumers prevent them from using food labels. Less nutritional awareness also leads to health related dietary issues [16,17]. Though many people were found to read food labels, the point is that they don't alter their purchase decision due to many reasons. It can be due to their inability to understand the information they

read. A few consumers were found to be making purchase decisions based on nutrition facts [18]. Many people were aware of the importance of reading a food and nutrition label, but due to the difficulty and monotony in reading labels they preferred to avoid their usage. The major reason was that the labels were not simple and it did not deliver accurate information about the product. Easy-to-understand labels must be formulated to make everyone get interested in reading them. People preferred that the nutritional information must be listed per 100g rather than serving size as this is much more relatable and enables easier calculation by anyone [19]. They also wanted a standard format to be followed while displaying nutritional content on the food label.

i. Traffic light nutrition labeling is effective as they are self-explanatory but it might be overrated by consumers and they might misinterpret the food due to the colors used [20].

ii. Consumers prefer the nutrition information to be present in front-of-pack (FOP) as this can enable easier access to the required deciding factors than making them search for the information. Though some misleading results were found as many feel that foods with FOP nutritional labeling were healthier than those with nutrition facts mentioned behind [21]. “The use of nutritional labels” has been a multidimensional issue. Under this study researchers gave various definitions related to nutritional labeling and alternatively also found out the role of nutritional labels for influencing consumers for choosing healthy food products.[22]Attitude of consumer towards nutritional evidence mentioned on food labels is positive, but most of the consumers refer food labels only for brand comparison. Some of the factors that affects consumer buying decisions were food label designs, nutritional information, health claims and

quality of product etc [23]. A cross-sectional study was conducted by Vemula, et al. [24] in 2013 to determine the knowledge of consumers and their food label usage. This study involved both quantitative and qualitative forms. 1/5th of them bought pre-packed foods daily whereas, 45% bought once a week. 90% were found to be reading food labels out of which 81% checked the date of manufacture and expiry dates alone.1/3rd only checked for nutrition information and the list of ingredients. Due to the lack of nutritional knowledge, many consumers did not prefer to read nutrition labels and found the terms very technical too. Quality symbols were read by 60% of them. Education levels and checking food labels were found to be positively correlated and girls as well as women were found to be more concerned about fat and sugar contents on the nutrition labels. The study concluded that, majority of the consumers found it difficult to understand and interpret nutritional information on the labels. Shekhar SK & Raveendran PT [25] in the year 2014 conducted a study among students to understand their perception on nutrition labels. They used various tests and found that their perception on nutrition labels did not change according to their age or gender. A survey was conducted by Priyadarshini V [26] in 2014 on assessing the awareness among the consumers in regard to the food label information provided. The awareness level was satisfactory regarding different aspects mentioned on the food labels but, their usage among consumers to make purchase decisions was found to be low. The information of the label was checked by 67.5%, but they were found to be checking only basic information like manufacturing and expiry dates as well as MRPs. This study concluded by suggesting certain guidelines to be adopted by manufacturers and government to help consumers to understand the nutritional facts. Further

research was also demanded to find the suitable format of nutritional facts displayed on the labels. Dunford et al. [27] in the year 2015 conducted a survey to find the food packages being labeled in accordance with Indian and International Standards. 4166 packed foods were included in the study which was classified under 14 food groups. Nutrient information consisting of calories, proteins, sugar, carbohydrates, total fats as per the Food Safety and Standards Authority of India (FSSAI) were noted among 52% of the foods. Only 27% adhered to Codex criteria which included sodium and saturated fats. A significant correlation and variation was noticed among leading brands, food groups and manufacturing countries in adhering to the standards. The study highlighted that the majority of Indian foods were found to be displaying inadequate information in regard to nutrition labels as per the Indian and International guidelines. The enforcement of these mandated criteria in India would help consumers in making wise choices especially the quantity of saturated fats and sodium guidelines. Madhvapaty H & DasGupta A [28] conducted a study in 2015 to find the requirement regarding the alternative formats for nutrition labeling to be enforced especially as Front-of-Pack display. The questionnaire included a traffic light method of nutrition facts displayed to find the preference of the consumers. Though traffic light nutrition labels were highly preferred among the consumers; it also required fine-tuning. Overloading information must be prevented. The manufacturers must enable the consumers to view the actual nutritional content in order to facilitate the nutrition label usage among them. A review was carried out by Kodali S & Telaprolu N [29] in 2016 which aimed to highlight the literature on the influence of food labels on consumer purchase behavior in order to find gaps for

future research. Health claims were found to be poorly understood by consumers but their attitude towards them was positive. More research on the preferred method of label display was required to conclude their usage. It was found that the influencing factors on a food label were the nutrition information, health claims, label design, its accessibility and quality. A cross-sectional study was done by Gavaravarapu, et al [30] in the year 2016 which aimed to find the usage of food labels, the knowledge of adolescents on food labels in India. It was found that almost 95% of food labels were in tune to Indian standards. Though many thought that the information on the labels to be confusing or too cramped with information. Consumer education was recommended to help adolescents in making wise dietary choices. 70% wanted a change in the display of label components which requires research into alternative methods to ease the consumer understanding. A descriptive study was carried out by Kaur VP, Kaur N & Qumar N [31] during 2016 to find the awareness levels on different information provided on the food labels. It aimed to find the association between purchase decisions and food labels. Every participant was found to be having adequate knowledge on food labels. 56.66% of the males were found to purchase packed-foods more than one time in a week, 16.66% purchased only once a week and 6.66% bought once a month, whereas 20% bought occasionally. Awareness on different components of the food label was found to be varied among the study population. Certain information was found to be used more when compared to other aspects on the labels. Therefore, the study was used as an aid for food manufacturers to know the consumer preference as well as the researchers to conduct further awareness studies. Anitha, M.C & Devi AK [32] conducted a study in 2017 regarding

the frequency of use of nutrition labels and their awareness. Children aged 10-12 years and who belonged to low-income status were found to be unaware of nutrition facts used on the food labels. Further studies were required to educate school students to enable them to make wise choices from their young age. A cross-sectional survey study was conducted by Robert SD & Chandran in 2017 to find the food label reading frequency and to associate their knowledge, practice and attitude on reading food labels. Only 5% were noted to be aware of food label information and education status was not found to be correlated with food label knowledge. 19% acknowledged the importance of food labels and 46% read them frequently. 90% refused to buy food packs with a label and 19% were found to calculate their intake based on the provided facts. Therefore this study recommended further interventional studies to educate the consumers on food labels. A systematic review was done by Donga, G & Patel, N[33] during 2018 on the association between different socio-demographic factors on usage and altering purchasing behavior with regard to nutrition labels. Income and education had a positive correlation in influencing nutrition label usage. Married people and females were found to use them more than their counterparts. Whereas, household size, age, frequency of purchase and time were found to have negative correlation. A simple and easier version of nutrition label was demanded for better usage among all consumers. A survey study was done by Donga G & Patel N [1] during 2018 which aimed to study the different aspects of nutrition labels which were given importance by the consumers and to find the people who often read them and their influence on purchase decisions. 2192 participants were included out of which 95.8% had knowledge on nutrition labels and 88% were found to be reading them. The important

information checked on nutrition labels were calories from fat, cholesterol and total fat contents. Gomathi SJR & Kar SS [34] performed a cross-sectional study in 2021 to find the number of people reading and checking food labels to decide on purchasing and those using the food label information. It also aimed to find the different categories of packed foods adhering to the labeling regulations. Many people were aware of the information on the labels whereas, the ability to understand was very less. Therefore, educating the people on various food label aspects is required in future studies to improve their utilization among them. Reasons for non-usage of labels- One of the major issues in not using food labels are: the difficulty in understanding the terms used in relation to nutrition and other health claims. Some were not interested and others had a lack of time due to which they did not prefer to read the food labels before purchasing. Some feel that the nutrition information and claims are not what they appear to be and certain others avoid reading food labels as they are familiar with the brand they buy regularly. Those preferring attractiveness of food package, taste of food were other reasons for not giving importance to food labels [35,36].

4. Conclusion

From the above reviewed Indian articles, it was proved that food labels were one of the most underestimated sources of information that consumers are aware of but did not alter their choices based on them. They found certain terms to be ambiguous, which was one of the major key reasons for non-usage of the food labels. Some of the key findings derived from this review are:

a. Socio-demographic characteristics of the people like: education, gender, income and area of residence

had an impact on the reading and utilization of food labels and making purchase decisions.

b. Knowledge was found to be associated in understanding the seriousness of choosing healthier choices through reading food labels.

c. Their preferences and opinions also had a correlation to usage of food labels, like the format of labels and the difficulties they encountered in understanding the information.

Survey results are more specific when it comes to the use of nutritional information in the food labels. Educating consumers on different aspects of food labeling enables them to make more informed purchasing decisions on healthier food choices.

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