

# Food Label Blindness Among Patients of Metabolic Syndrome

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**Abstract**—Background: Metabolic syndrome is a silent health threat that can lead to serious conditions like heart disease, stroke, and type 2 diabetes. It's characterized by a combination of factors such as excess belly fat, high blood pressure, elevated blood sugar, and abnormal cholesterol levels. To manage metabolic syndrome, it's crucial to pay close attention to diet. Reading food labels carefully is essential when choosing packaged foods. Checking for hidden sources of unhealthy fats like trans fats and excessive amounts of added sugars and opting for products with lower calorie and higher nutrient content. Food label blindness is a term used to describe the tendency of consumers to overlook or misunderstand information on food labels. This can lead to unhealthy choices, the high levels of unhealthy fats, sugars, or sodium in processed foods. To combat this, it's important to read labels carefully, understand serving sizes, and look for hidden additives. By making informed dietary choices, one takes control of eating habits and improve overall well-being.

**Rationale & Objective:** This study is an attempt to check the habit of food label reading and its ignorance among subjects with metabolic syndrome.

**Method:** Total of 100 subjects diagnosed as patients of metabolic syndrome were selected for the study, from various cities of Chhattisgarh state, both male and female of age group 18- 45 years participated in the study. Their anthropometric data and demographic data were recorded and a modified questionnaire was used to check the habit of food label reading, the recorded data was analyzed using SPSS, Chi square test and Fisher exact test.

**Results:** The analysis of collected data revealed a concerning trend among patients with metabolic syndrome: a significant disregard for food label information, which is termed as "Food Label Blindness." A vast majority (94%) prioritize price over nutritional content when selecting food items. Furthermore, over half (51%) of these patients completely disregard any information provided on food labels.

**Conclusion:** Individuals with metabolic syndrome often exhibit poor food label reading habits. Despite acknowledging the importance of nutritional information, they prioritize taste, flavor, and price when

selecting packaged foods, leading to suboptimal dietary choices and a phenomenon we term "food label blindness."

**Index Terms**—Food Label Blind, Metabolic Syndrome, FASSI

## I. INTRODUCTION

Metabolic syndrome is a cluster of conditions that increase the risk of heart disease, stroke, and type 2 diabetes

(<https://www.hopkinsmedicine.org/health/conditions-and-diseases/metabolic-syndrome>). It is characterized by central obesity, high blood pressure, high blood sugar, and abnormal cholesterol or triglyceride levels (Grundy SM. et al. 2019). Dietary interventions are crucial for managing metabolic syndrome, and understanding food labels is a fundamental step towards making informed dietary choices (Estruch R. et al. 2013). Food labels provide valuable information about the nutritional content of packaged foods, including calories, macronutrients (protein, carbohydrates, fat), and micronutrients (vitamins and minerals) (<https://www.fda.gov/food/nutrition-food-labeling-and-critical-foods>). By carefully reading food labels, individuals with metabolic syndrome can make conscious decisions about their food intake, aiming to reduce unhealthy fats, added sugars, and sodium while increasing the consumption of fruits, vegetables, and whole grains (Evert AB. et al. 2018). However, research suggests that many individuals, particularly those with chronic conditions like metabolic syndrome, may not consistently read or understand food labels effectively (Rolls BJ. et.al 1999). This lack of attention to food label information can hinder efforts to improve dietary quality and manage the associated health risks. The Food Safety and Standards Authority of India (FSSAI) is taking several steps to educate the common mass about how to read food

labels. Through Conducting workshops and seminars for consumers, retailers, and food businesses, developing educational materials such as booklets, pamphlets, and videos, launching a dedicated website and mobile app with information on food labels, organizing awareness campaigns in schools and colleges, collaborating with media outlets to disseminate information on food labels.

## II. LITERATURE REVIEW

Miller, L. M. S. et. al. (2018) conducted a study on “Label-Reading Skills and Feelings of Empowerment to Choose Healthful Foods.” and the study concluded that This study found that teaching college students to read food labels significantly increased their confidence in making healthy food choices. This suggests that online tools focused on teaching specific skills can motivate people to make healthier choices.

Resti Mauludyani, A. V et.al. (2023) conducted a study on “Education on Balanced Nutrition and Food Label Reading for Community in Cibanteng Village, Bogor District” and found that the study investigated the effects of education on balanced nutrition and food label reading. They found that residents of Cibanteng Village who participated in the program significantly improved their understanding of healthy eating and food labels. This suggests that teaching people about nutrition and food labels can help them make healthier choices.

Rai, F. H. et.al. (2023) conducted the study on Awareness About Nutrition Facts on Food Labels and Their Influence on Food Selection Among Consumers and the study concludes that a low percentage of consumers read nutrition facts on food labels, indicating a prevailing trend of unhealthy eating habits among the population. The findings suggest that there is a need to develop policies to increase awareness about the use of nutrition facts on food labels in order to promote healthy eating habits among consumers.

A study by İcer et al. (2023) found that people who care about nutrition information on labels are more likely to read labels, research ingredients, and buy unpackaged foods. This suggests that increasing awareness about food labels can lead to healthier choices. The study also suggests that understanding specific claims on labels, like "trans-fat free," helps people make better choices. This highlights the importance of public education initiatives to improve

understanding of food labels and promote healthier eating habits.

Sung K. M. et.al. (2012) conducted a study on Factors Relating to Use of Food Labels among Adults with Metabolic Syndrome and found that Adults with metabolic syndrome exhibit food label blindness, reading labels significantly less (12.5%) compared to those without the condition (29.0%). This suggests a need for strategies to enhance food label use as a dietary management tool for metabolic syndrome.

Jin, H. -s., et.al. (2019) “Association between Use of Nutritional Labeling and the Metabolic Syndrome and Its Components.” And The study indicates that patients with metabolic syndrome tend to use food labels less frequently than those without the syndrome, suggesting a potential "food label blindness" that may contribute to the development and management of metabolic syndrome.

## III. METHODOLOGY

This study aimed to investigate the food label reading habits of subjects of metabolic syndrome in 100 individuals residing in Bilaspur and Raipur, Chhattisgarh. Participants were selected through purposive sampling and met the following inclusion criteria:

- Age: 18 to 45 years
- Diagnosis: Metabolic syndrome
- Voluntary participation with informed consent
- Exclusion criteria included individuals:
  - Below 18 or above 45 years of age
  - Suffering from infectious diseases (e.g., HIV, Hepatitis B, cancer, organ failure)
  - On medications contraindicated for the study

### Methodology

Non-invasive methods were employed throughout the study. Data collection involved:

- Questionnaires to assess participant characteristics and behaviors towards food label reading.
- Educational materials (e.g., Food Label reading leaflets from the FSSAI website) to evaluate awareness and habits related to food labeling.

IV. DATA ANALYSIS

Statistical analysis was performed using SPSS software. Descriptive statistics were utilized to summarize data, while Chi-square and Fisher exact tests were employed to analyze associations between variables.

A. Results and Discussion:

The analysis of demographic profile of 100 subjects of metabolic syndrome revealed that about 79% of subjects were graduates or holding higher education and 21 % of subjects were holding higher secondary certificate. Individuals with higher education tend to exhibit significantly better metabolic health (Stephens C.R. et.al. 2020). Many patients struggle to understand the information on food nutrition labels. This difficulty is often linked to poor reading and Numerical skills. However, even patients who can

Demographic details of the subjects:

Table: 01

Education	No. Of Respondents	%
UPTO HIGHER SECONDARY	21	21.00
GRADUATION AND ABOVE	79	79.00
Occupation		
BUSSINESS	28	28.00
GOV JOB	24	24.00
HOUSEWIFE	11	11.00
PVT JOB	30	30.00
STUDENT	7	7.00
Gender		
FEMALE	18	18.00
MALE	82	82.00
Age group		
21 TO 30	8	8.00
31 TO 40	75	75.00
41 TO 50	17	17.00

Statistical analysis of the presented data revealed that 94% of subjects primarily checked the price of packaged food items. 47% were primarily interested in the flavors of the food products. 34% read the ingredients used in manufacturing the packaged food items. 26% checked the nutritive value of the packaged food items. 16% checked the expiry date on the purchased food items. 6% checked whether the food product was vegetarian or non-vegetarian and for

read well might still have trouble interpreting complex label information (Rothman, R. L. 2006).

Among individuals with metabolic syndrome, reading habits for food labels varied across occupations. Private sector employees demonstrated the highest incidence of poor label reading at 30%, followed by business class at 28%. Government servants accounted for 24% of those with poor reading habits. Conversely, housewives (11%) and students (7%) exhibited the lowest rates of poor label reading within this group.

A significantly higher proportion of male subjects (82%) exhibited poor food label reading habits compared to female subjects (18%). The 31-40 age group exhibited the highest rate of poor food label reading habits at 75%, followed by the 41-50 age group at 17%. The 21-30 age group demonstrated the lowest incidence of poor label reading habits at 8%.

allergy-related information, respectively. Only 1% of the subjects read the bold statements written on the packaged food products.

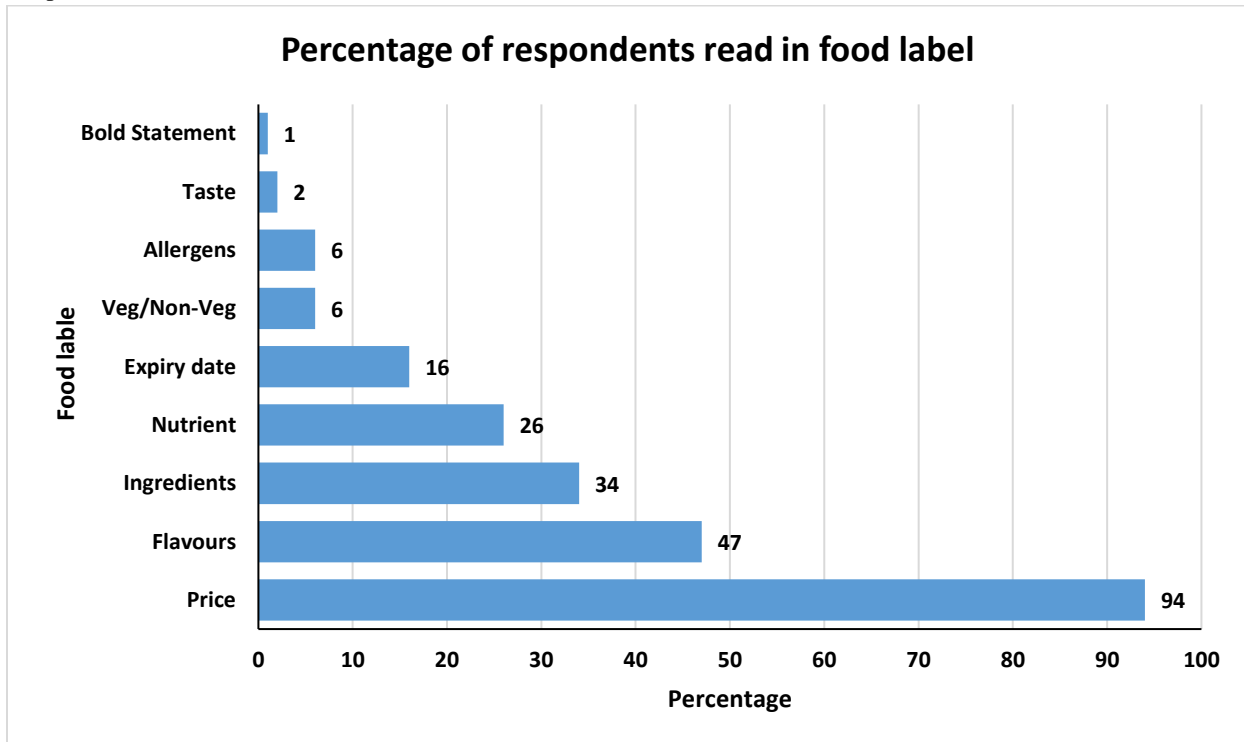
The study found that 51% of subjects did not adhere to food label reading guidelines when choosing and purchasing packaged food items, indicating a disregard for their importance. Conversely, 49% of subjects partially followed some aspects of the food label reading guidelines.

Food label reading habit of the subjects

Table- 02

WHAT YOU READ IN FOOD LABEL?	No. of respondents	%
Price	94	94.00
Nutrient	26	26.00
Flavours	47	47.00
Ingredients	34	34.00
Taste	2	2.00
Expiry date	16	16.00
Veg/non-Veg	6	6.00
Bold Statement	1	1.00
Allergens	6	6.00
DO YOU FOLLOW FOOD LABEL READING GUIDELINES?	No. of respondents	%
Partially	49	49.00
No	51	51.00

Graph:01



According to a study by Goyal R. et.al. (2018) it was found that the consumers in Indore City exhibit low levels of use and understanding of nutrition labels. Consumers demonstrated limited familiarity with the numerical values, technical terms, and overall language used on current nutrition panels. These findings underscore the critical need for improved nutrition education programs and the development of more user-friendly label formats to enhance consumer understanding and empower informed food choices. The present study discovered similar findings that the subjects of metabolic syndrome tend to show poor food label reading habits and its understanding

irrespective of their education levels and employment status.

#### V. CONCLUSION

Participants with metabolic syndrome exhibited partial adherence to food label reading guidelines, suggesting limited engagement with food label information, this partial adherence may contribute to the development of 'food label blindness.'

#### VI. RECOMMENDATIONS

The government-initiated guidelines, food label reading has shown limited awareness and higher ignorance among the subjects of metabolic syndrome, hence

- Mass sensitization with various mode is need of hour.
- Use of Media – print, visual mode for advertisements may make deeper approach.
- Education at work place may help in adoption of habits of food label reading.
- Organizing Workshops for food label reading among common mass may help in eradicating food label blindness

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