“THE KNOWLEDGE, ATTITUDE AND PRACTICE BETWEEN NUTRITION AND NON-NUTRITION STUDENTS ABOUT NUTRITION LABELLING”

ST.TERESA'S COLLEGE
(AUTONOMOUS)

PROJECT SUBMITTED

In Partial Fulfilment of the Requirement for the Award of the degree of

B.Sc NUTRITION AND DIETETICS

BY

CHERYL SAJU, ELVINA THOMAS, NISHANA N, NAMIYA TP

(SB21ND012, SB21ND015, SB21ND033, SB21ND041)

DEPARTMENT OF CLINICAL NUTRITION AND DIETETICS

ST.TERESA 'S COLLEGE (AUTONOMOUS)

ERNAKULAM

APRIL 2024

CERTIFIED AS BONAFIDE RESEARCH WORK

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29/04/24

Signature of Internal Examiner

29/4/24

Signature of External Examiner

DECLARATION

We hereby declare that the project entitled **"THE KNOWLEDGE, ATTITUDE AND PRACTICE BETWEEN NUTRITION AND NON-NUTRITION STUDENTS ABOUT NUTRITION LABELLING"** submitted in partial fulfilment of the requirement for the award of the degree of B.Sc Nutrition and Dietetics is a record of original research work done by us under the supervision and guidance of Dr.Divya Raichu Jacob, Assistant Professor, Department of Clinical Nutrition and Dietetics, Women's Study Centre, St. Teresa's College (Autonomous), Ernakulam and has not been submitted in part or full of any other degree/diploma/fellowship or the similar titles to any candidate of any other university.

Place: Ernakulam

Cheryl Saju
Elvina Thomas
Nishana N
Namiya TP

Date:29/04/24

CERTIFICATE

We hereby certify that the project entitled "THE KNOWLEDGE, ATTITUDE AND PRACTICE BETWEEN NUTRITION AND NON-NUTRITION STUDENTS ABOUT NUTRITION LABELLING" submitted in partial fulfilment of the requirement for the award of the degree of B.Sc Nutrition and Dietetics is a record of original work done by Ms.Cheryl Saju, Ms. Elvina Thomas, Ms. Nishana N, Ms. Namiya TP during the period of the study under my guidance and supervision.

Signature of the HOD

Ms. Surya M. Kottaram
Head of the Department
Department of Clinical Nutrition and Dietetics
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Signature of the Research Guide with designation

Dr. Divya Raichu Jacob
Assistant Professor
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CHAPTER-I

INTRODUCTION

Nutrition labelling describe the nutrient content of a food and are intended to guide the consumer in food selection(Ippolito & Mathios, 1993).The nutrition information provided must be selected on the basis of consistency with dietary recommendations (Hersey & Wohlgenant, 2013). Selection of the specific nutrients or food components to be listed should further take into account label space, the analytical feasibility of measuring the particular nutritional component within the food matrix, and the relative costs of such analyses (Cassady, 2015).Nutrition information provided on labels should be truthful and not mislead consumers (Martini, 2021). At the same time, labelling regulations should provide incentives to manufacturers to develop products that promote public health and assist consumers in following dietary recommendations (William, 2005). It is likely that in many countries, there would be some segments of the population that would benefit from information about the composition of foods. In these cases, countries should consider the need to provide for appropriate labelling and its presentation relative to existing guidelines and approaches (Glanzend, 1992). As nutrition-labelling efforts have evolved, different approaches and legal requirements have been established. These create difficulties in developing and harmonizing nutrition information listings, which have broad international applications. For these reasons, the Codex Guidelines on Nutrition Labelling play an important role to provide guidance to member countries when they want to develop or update their national regulations and to encourage harmonization of national standards with the present survey. The Guidelines include provisions for voluntary nutrient declaration, calculation and presentation of nutrient information. The Guidelines on Claims establish general principles to be followed and leave the definition of specific claims to national regulations. Definitions are provided for a number of claims (nutrient content, comparative claims, nutrient function claims) as well as general requirements concerning consumer information in relation with claims.

Nutrition labelling by itself cannot solve nutrition problems. It should be seen as one of the elements of nutrition policy and should be envisaged in the larger perspective of consumer education, which in its turn is part of an overall development policy. Exchange of information at the regional and subregional level is important, as each country can learn from the experience of others and regional co-ordination and co-operation can be developed (Asia Pac J Clin Nutr. 2002). Food Labelling is the primary means of communication between the producer and seller on is itsame one hand, and the purchaser and consumer on the other. (Grayson & Essaides,

1998). Food Labels provide the information about author product. The label must include name of food, list of ingredients, weight or volume of product, date and storage condition, place of origin, lot or batch number (Kjelkevik, 1998). Labels are a legal requirement, and introduction, they are important for many reasons. They guide consumers towards well-versed food, store it properly, and use it safely. Food labels allow consumers to acquire knowledge about the food they want to purchase. If consumers follow the information provided on food labels, it can help them to prevent unnecessary food-borne illnesses and allergic reactions. Food labels also give an idea of the quality of a product (Monye, 2020). Most food packaging labels contain a separate list of ingredients used to manufacture a product, including preservatives (Feyisa, 2021)

Choosing the right food product suitable for consumers are important to control the intake of additional and altered ingredients to avoid the risk (Zaini & Saad, 2022). A food label is the information present on the food products which is most important and direct means of communicating information to the consumers during purchasing. It comprises of printed, symbolic or graphical information which is accompanied by food for the purpose of promoting its sale. The food label is one of the most important and direct means of communication of product information between buyers and sellers. It conveys the information regarding the product identity, nutritional facts, preparation methods and safety measures. Food labels are very important public health tool that is used to promote healthy diet. The study focused to assess the Knowledge, Attitude and Practices of the consumer towards the food labelling and to create awareness among the consumers regarding the food labelling (Tiji, 2021).

AIM: To study the knowledge, attitude and practice on nutrition labelling between nutrition and non-nutrition students.

OBJECTIVES

- To study the knowledge, attitude and practice on food labelling between nutrition and non- nutrition students.
- To study the perception of good health in terms of intake of nutrients that promote health and effect of food labels on nutritional awareness between nutrition and non-nutrition students.
- To study the level of trust on food labels on food products between nutrition and non-nutrition students

CHAPTER II

REVIEW OF LITERATURE

The review of the study **"The knowledge, attitude and practice between nutrition and non-nutrition students about nutrition labelling"** is discussed under the following headings.

2.1 Evaluation of reading habits of food labels

2.2 Knowledge , attitude and practice of food label

2.1 Evaluation of reading habits of food labels

In developing nations, processed food consumption is rising. Nutrition labels on food packaging are crucial for educating consumers—especially teenagers—and assisting them in making better dietary decisions. Evidence does, however, seem to indicate that teenagers do not typically use nutrition labels. The purpose of this study conducted by Jefrydin et al (2020) is to investigate the individual factors that affect how Malaysian teenagers read nutrition labels. The participants were teenagers from five public schools in Negeri Sembilan, ranging in age from 13 to 16. There were five focus group discussions (FGDs) that were semi-structured. Even though the participants were familiar with nutrition labels, they did not use them much when choosing food because of their lack of interest in learning about them, their prior experiences, their hunger and cravings, their time constraints, and their preference for the food's flavor. The primary drivers behind the use of nutrition labels were consumers' curiosity about the specific nutrition information provided on the labels and their concern for their health. Due to the information being supplied by reputable organizations, the majority of participants thought that the information on the labels was accurate. Some participants also misinterpreted the nutrition labels, confusing them with the ingredient list and expiration dates. A few participants said the labels gave false information and were not persuaded by them.

An article by Ranilović et al(2011) aimed to investigate the relationship between the age characteristics of "label users" and their nutrition reading habits, as well as the sociodemographic and health variables of a representative sample of over-15-year-old Croatian subjects related to reading nutrition labels. Telephone interviews with 1,011 randomly selected subjects who were at least 15 years old were conducted. Furthermore, in order to evaluate nutrition label habits, 638 "label users" were enlisted. A total of 36% of the participants stated

they had never read nutrition labels, 25% said they had done so infrequently, 19% said they had done so constantly, and 15% said they had done so seldom. Individuals who identified as female, had the highest educational attainment, were still pursuing education, engaged in physical activity, and followed special diets expressed a greater propensity to read nutrition labels. Younger participants who read nutrition labels cited "curiosity" as their primary motivation, whereas older participants were more likely to cite "wish for healthy eating habits.". Older participants asked for "bigger letter size," while younger participants frequently mentioned "interpretational aids" to make nutritional information easier to understand.

The purpose of the study by Kurt et al*(*2022) was to assess how adult consumers in Elazığ city center, who are over 18, read nutrition labels. Customers who shop at the malls in ElazıĖ city center make up the sample for this cross-sectional study. The study reached 300 participants. By assigning two points for the "always" response, one point for the "sometimes" response, and zero points for the "never" response, the "Nutrition Label Reading Habit Score" was determined. One can receive a score ranging from 0 to 56. Ten percent said they "never" read the nutrition label, compared to 28 percent who "always" and 62 percent who "sometimes" did so. Women's mean score on the habit of reading nutrition labels was significantly higher than men's . The age group of 35–44 had the highest score out of all of them . The score increased significantly as the education level rose. Consumers who are married, have children, and are employed had significantly higher scores. The results showed that individuals who received nutrition training outperformed those who did not , and that reading the nutrition label while using the product was significantly more effective than reading it at home. Research has shown that certain demographics—women, highly educated individuals, married couples with kids, and individuals with disabilities—are less adept at reading nutrition labels on packaged goods.

A study by Zafar(2014) was to identify consumer food label reading habits based on consumer age. Five variables, each with an independent and dependent status. Four factors, including reading the entire food label, the manufacturing date, the expiration date, and the ingredients, were independent. Influence on purchasing behavior was one dependent variable. Out of 350 questions, 251 were deemed valid by the author for inclusion in the data collection questionnaire. Two groups of data were created. The age ranges of the respondents in (Group I) were 20 to 25, with a mean age of 23. On the other hand, the age range in Group II was 26–30, with a 27 average. Group I comprises three variables that have a significant impact on consumers' purchasing behavior when they buy food

items. Of the two groups in Group II, only two have a noteworthy impact on the way consumers behave when making food purchases. Reading the ingredients and the manufacturing date were two factors that both groups shared. The findings also showed that consumers typically pay attention to the date of manufacturing, which indicates the freshness of the food product and ingredients and provides information about the nutrients used in food processing.

Developing a habit of reading food labels, especially for allergen information, is crucial for personal health and safety due to its role in preventing allergic reactions and promoting informed dietary choices

Judith R et al(2007)conducted a research to establish if current food labelling practices are perceived to be adequate by food-allergic consumers, and whether further policy changes need to be implemented in order to optimize consumer protection. A total of 40 food-allergic consumers were recruited in both the Netherlands and Greece. Participants were people suffering from one or more of the three most common food-allergies, milk, egg, and/or peanut or tree nut. In a retail environment, participants were given a list of 15 potentially problematic food products which they were asked to buy as if for their own household. The participants were observed during the course of product selection and questioned about specific problems they experienced, as well as information preferences for food allergy information. Participants reported many problems linked to the readability of the label (e.g. font size, contrast). Not all packages contained relevant allergy information, and many participants reported that the ingredients list was insufficient for their needs. Personal experience of particular products was an important factor in the selection process. Dutch participants reported frustration regarding frequent changes in recipes of products available in the supermarket. In general, food-allergic consumers were not satisfied with the current labelling practices. Information was thought to be unclear or insufficient, which resulted in personal stress and feelings of insecurity.

The study done by Ju SY et al (2015) aimed to compare consumer attitudes and preferences regarding food allergy labeling by diagnosis of food allergies, after looking into food allergens and prevalence rates of food allergies. From October 15 to October 22, 2013, 543 residents of the Seoul and Gyeonggi areas took part in the survey. According to

the findings, 64.4 percent of respondents self-reported having a food allergy, while 17.5% of respondents had a doctor's diagnosis. Peaches (30.3%) and eggs (33.3%) were the most frequently mentioned allergens among respondents with food allergies who were diagnosed by a doctor and self-reported, respectively. Peanuts, cow's milk, and crab were next in line. When it came to consumer attitudes toward food labeling, there was only a significant difference between allergic and non-allergic respondents when it came to one item—checking food allergens. For an improved food allergen labeling system, according to all respondents, all six items—bold font, font color, box frame, warning statement, front label, and addition of potential allergens—were required. The results of PLSR analysis showed a positive correlation between the group with a doctor's diagnosis and the checking of food allergens, while the non-allergy group was more focused on product brand checking. Customers who have allergies should have their health protected by an efficient food labeling system. Governmental organizations also need to create policies about how common food allergies are in Korea according to this information.

A study was conducted by Sheth et al. (2010) to ascertain the percentage of people who are allergic to food who attribute an unintentional exposure to improper labeling, neglecting to read food labels, or disobeying warnings, as well as the variables linked to unintentional exposures. Food-allergic people or those caring for them were gathered from allergy awareness organizations and a Canadian registry of people with a doctor-confirmed diagnosis of peanut allergy. Participants answered questions about unintentional exposures brought on by particular problems with food labels. The relationship between unintentional exposures and traits of food-allergic people or their carers was estimated. 1,454 (78.1%) of the 1,862 possible participants replied. 47.8% of participants had an unintentional exposure, 47.0% identified incorrect labeling as the cause of the event, 28.6% pointed to neglecting to read food labels, and 8.3% pointed to disregarding a warning label. People with food allergies who were allergic to fish, shellfish, peanuts, or tree nuts were less likely to unintentionally come into contact with the allergen because it was not clearly labeled. Mislabeled products, labels that are not read, and precautionary statements that are disregarded are responsible for a significant percentage of unintentional exposures.

2.2 Knowledge, attitude and practice

Nutrition information on food labels can help consumers to choose healthier food. Riaz et al (2022)investigated the awareness of food labels among consumers and their influence on the decision to buy food items among students of health sciences of King Khalid University, Abha. This cross-sectional study involved 350 females who gave informed verbal consent and were selected by systematic random sampling technique. Data was collected by using a self-administered questionnaire. Overall 76.3 percent of students were aware about food labeling. Statistically significant association were observed between the knowledge about food labeling and education, the number of family members, earning members, frequency of shopping and income. From the study , it was observed as almost half of the students checked food labels before buying, 43.7 percent replaced food on an importance basis and value of labeling, and 60 percent replaced on a cost basis. More than half of students were ready to buy food items with no labels, and 21.7 percent even utilized expired food items because of a lack of knowledge regarding expiry date and low cost of food which could be hazardous for their health.By this they concluded that awareness of food labeling and expiry date should be enhanced by including this subject in the curriculum and electronic media to avoid health hazards of expired food items. Choosing healthy food options shall reduce the nutrition and chronic diseases among the general population in future.

In the study conducted by Malek et al (2012) involving 332 students aged 18-25 in five different academic majors (Nutrition, Public Health, Health Services Administration, Paramedical, and Engineering),the participants were asked to complete a questionnaire with fifteen approved questions. Results showed that 89.2 percent of students believed food labels impacted nutritional awareness, with 77.4% finding them useful and 79.9 percent questioning the truthfulness of nutrition claims. The most important information on labels for 84 percent of students was expiry date and storage conditions. While 47.6 percent reported using nutrition facts labels when shopping, only 32.3 percent used the information to guide their daily diet. Surprisingly, only 1.9 percent of students found fatty acids noteworthy on labels. Statistically significant differences were found among majors in knowledge, attitude, and practice regarding nutrition claims, label use, and health claims .

A survey of 200 medical college students in their 1st to 3rd year was conducted by Annamalai et al(2022)using an online Google Forms survey. The students self-administered the survey after providing online informed consent. They collected data on their knowledge, attitudes, and use of food labels.Out of 400 students contacted, 200 participated in the survey. The results showed that the students had a strong understanding of food labels. Female students demonstrated 3.4 times better knowledge compared to male students. Overall, the students had a positive attitude towards food labels and believed that they were helpful.However, the utilization of food labels for understanding nutritive content, additives, and manufacturer details was lacking. Those who engaged in regular exercise were 2.7 times more likely to utilize food labels, while those on strict diets were 0.2 times less likely to do so.Despite their good knowledge and attitude towards food labels, the students' actual use of them was subpar. It is recommended that food labeling be included in the medical curriculum to encourage better utilization behavior.

Across different states, there are limited studies on the nutritional knowledge attitude and practice about nutritional labelling in Kerala, India

CHAPTER-III

METHODOLOGY

The methodology involved surveying participants to gauge their understanding of food labels (knowledge), their opinions and beliefs regarding the importance of food labels (attitude), and their actual behaviors related to interpreting and utilizing food labels(practice).The present study entitled **"The knowledge, attitude and practice between nutrition and non- nutrition students about nutrition labelling"** is discussed under the following headings:

3.1. Selection of study participants

3.2. Selection of tool

3.3. Collection of data

The following details were collected:

1. General profile
2. Purchasement of good quality food product (Practice)
3. Utility for consumers (Knowledge)
4. Mindfulness of consumers towards nutritional labels on food products (Practice)
5. Level of trust on the nutrition information of the food products (Attitude)
6. Perception of nutrients in promoting good health (Knowledge)
7. Consideration of cost as the only factor of purchasement of food products (Attitude)
8. Effect of nutritional awareness through food labelling (Attitude)
9. Preference of food products with health claims (Practice)
10. Awareness and observation of allergen information on food products (Practice)
11. Analysis and interpretation of data.

3.1. SELECTION OF STUDY PARTICIPANTS

Food label is an important communication tool that provides consumers with information about a product's composition, nutritional profile, and quantity of contents so that they can make product comparisons and selections. It also provides important information to assist them in making informed purchase decisions. So it is essential for the young students to be an informed consumer who is conscious of their health and eating habits. Therefore, in the present study

college students of the age group 19-25 years were selected based on the willingness to take part in the study from a total of 100 students. It included 50 students from nutrition stream and 50 from non-nutrition streams. A simple random sampling method was used to select the students for the study. Simple random sampling is the “simplest and most common method of selecting a sample, in which the sample is selected unit by unit, with equal probability of selection for each unit at each draw” (Singh, 2003, p. 71).

3.2. SELECTION OF TOOL

The instrument used for this research endeavor comprised a questionnaire designed to assess participants' knowledge, practices, and attitudes regarding food labeling. Data collection was conducted via a Google form, incorporating inquiries encompassing general demographic information along with specific queries pertaining to participants' understanding, behaviors, and perspectives concerning food labeling practices. The questionnaire utilized in this investigation is provided in Appendix I for reference.

3.3. COLLECTION OF DATA

1. **General profile**

   The general profile included basic information about the study participants. This includes name, course, and year of studying.
2. **Purchasement of good quality food product (Practice)**

   The number of study participants ensuring good quality food products before purchasing.
3. **Utility for consumers (Knowledge)**

   The number of study participants that found food labels as a useful tool.
4. **Level of trust on the nutrition information of the food products (Attitude)**

   The number of study participants who deem nutritional information on the food products to be accurate.
5. **Perception of nutrients in promoting good health (Knowledge)**

   The number of study participants that recognize nutrients to be limited or taken in lesser amounts in order to promote good health.
6. **Consideration of cost as the only factor of purchasement of food products (Attitude)**

   The number of study participants that consider cost as the only factor while purchasing a food product.

7. **Effect of nutritional awareness through food labelling (Attitude)**

   The number of study participants who believe food labelling has an effect on nutritional awareness.

8. **Preference of food products with health claims (Practice)**

   The number of study participants opting for food products with health claims.

9. **Awareness and observation of allergen information on food products (Practice)**

   The number of study participants that check for allergen information on food products.

10. **Analysis and interpretation of data.**

    Data collected from the study participants were tabulated and interpreted. Percentage analysis was used to analyze the data and a comparison bar graph was plotted.

CHAPTER-IV

RESULTS AND DISCUSSION

The study aimed to discern any disparities in Knowledge, Attitude and Practices between students in nutrition related fields and those in non- nutrition fields. The results of the study entitled **"The knowledge, attitude and practice between nutrition and non-nutrition students about nutrition labelling"** is discussed under the following headings:

1. **Comparison of the knowledge, attitude and practice on food labelling between nutrition and non-nutrition students.**
2. **Perception of good health in terms of intake of nutrients that promote health and the effect of food labelling on nutritional awareness between nutrition and non-nutrition students.**
3. **Level of trust of food labels on food products between nutrition and non-nutrition students.**

1. COMPARISON OF THE KNOWLEDGE, ATTITUDE AND PRACTICE ON FOOD LABELLING

The present study compares the knowledge, attitude and practice on food labelling between nutrition and non-nutrition students. The study include data collection using questionnaire focusing on the following headings:

- **<u>Purchasement of good quality food product-</u>**

Table 4.1 shows the comparison of the purchasement of good quality food product between nutrition and non-nutrition students.

Table-4.1 Purchasement of good quality food product.

Stream	**No. of respondents**					
	Agree		Sometimes		Disagree	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	44	**88**	6	**12**	0	0
Non-nutrition	32	**64**	15	**30**	3	6

The tabulated data reveals that a majority of participants, comprising **88%** of nutrition students and **64%** of non-nutrition students, expressed agreement with the practice of actively seeking out high-quality food products. Conversely, a minority, constituting **12%** of nutrition students and **30%** of non-nutrition students, indicated occasional adherence to this practice among a total cohort of 100 study participants. Figure 1 shows that graphical representation of the same data.

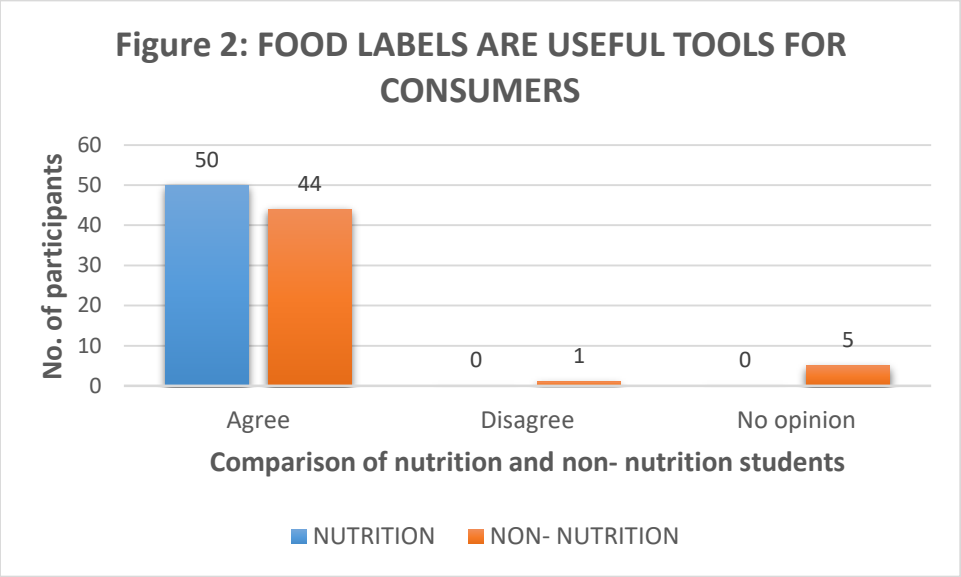
❖ **Utility for consumers-**

Table 4.2 shows the comparison of the utility of food labels as beneficial tools between nutrition and non-nutrition students.

Table-4.2 Utility for consumers.

Stream	**No. of respondents**					
	Agree		Disagree		No opinion	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	50	**100**	0	0	0	0
Non-nutrition	44	**88**	1	2	5	10

The tabular representation shows the unanimous agreement among all nutrition students and a substantial majority, comprising **88%**, of non-nutrition students regarding the utility of food labels as beneficial tools for consumers. This consensus emerged from a collective participation of 100 study participants. This is graphically represented in figure 2.



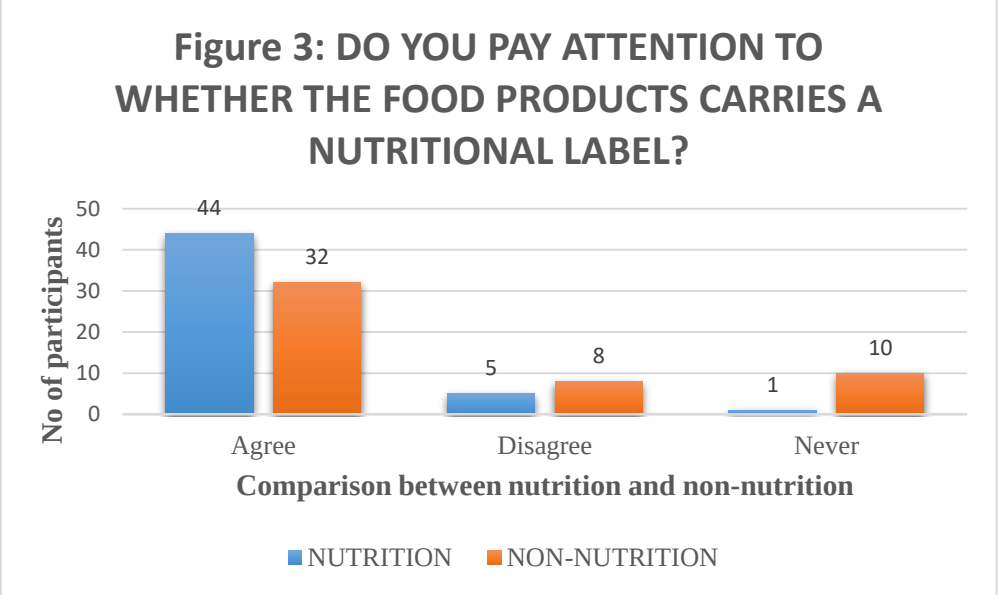
❖ **<u>Mindfulness of consumers towards nutritional labels on food products-</u>**

Table 4.3 shows the mindfulness of consumers towards nutritional labels as beneficial tools. The comparison is made between nutrition and non-nutrition students.

Table- 4.3 Mindfulness of consumers towards nutritional labels on food products.

Stream	**No. of respondents**					
	Agree		Disagree		No opinion	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	44	**88**	0	0	0	0
Non-nutrition	32	**64**	1	2	5	10

The tabulated data indicates that a significant proportion of participants, comprising **88%** of nutrition students stated they are mindful towards nutritional labels on their food products. This was higher when compared to that of non-nutrition students (64 %). This is graphically presented in figure 3.



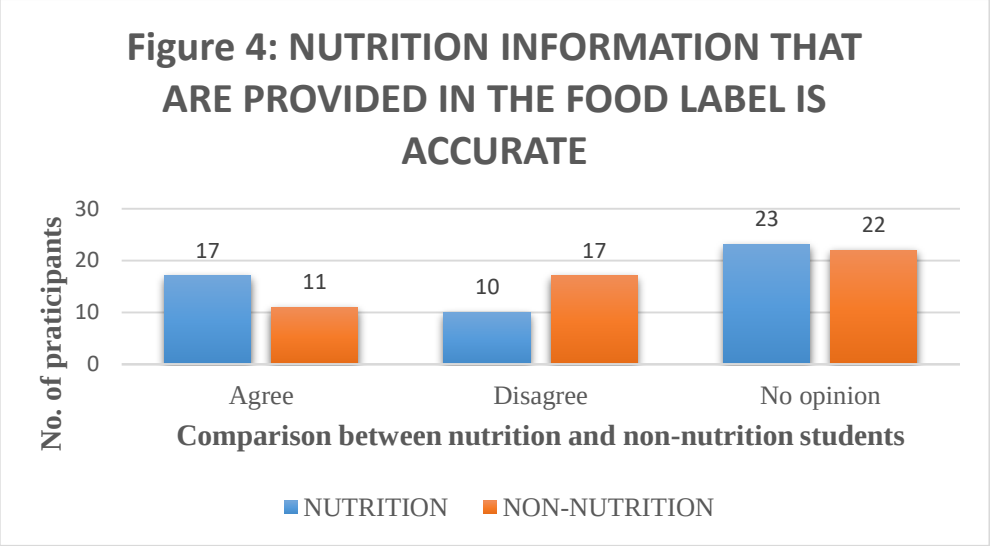
❖ **Level of trust on the nutrition information of the food products-**

Table 4.4 shows the level of trust on the nutrition information of food products between nutrition and non-nutrition students.

Table- 4.4 Level of trust on the nutrition information of the food products.

Stream	**No. of respondents**					
	Agree		Disagree		No opinion	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	17	**34**	10	2	23	46
Non-nutrition	11	**22**	17	34	22	44

The tabular data shows that a higher percentage (**34%)** of participants who were enrolled in nutrition-related studies had trust on the nutrition information found on the food products and a lower percentage (**22%)** of non-nutrition students had trust on the nutrition information found on the food products. This is graphically presented in figure 4.



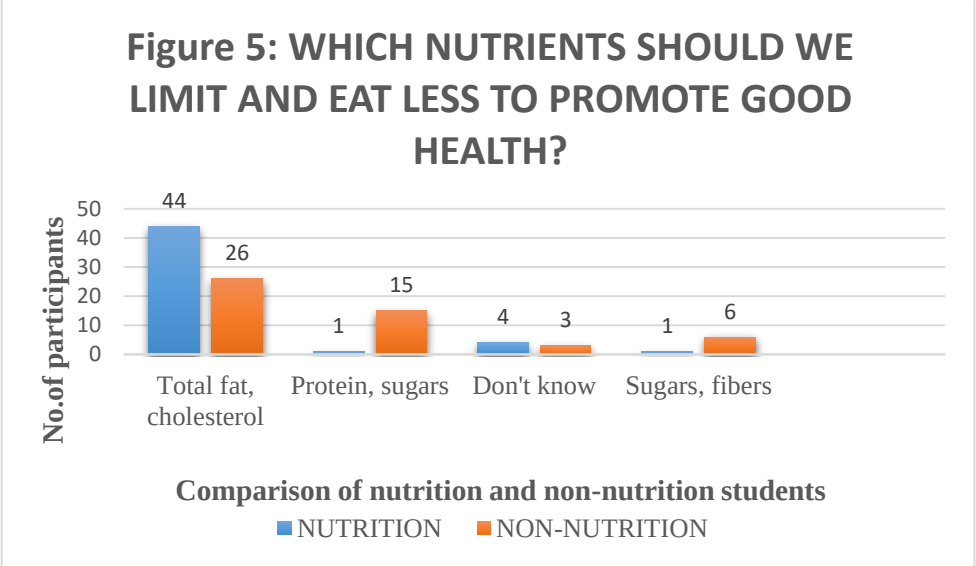
❖ **Perception of nutrients in promoting good health-**

Table 4.5 shows the perception of students about the different nutrients that promote good health.

Table-4.5 Perception of nutrients in promoting good health.

Stream	**No. of respondents**							
	FREQUENCY				PERCENTAGE (%)			
	Total fat, cholesterol	Protein, sugars	Don't know	Sugars, fibres	Total fat, cholesterol	Protein, sugars	Don't know	Sugars, fibres
Nutrition	44	1	4	1	**88**	2	8	16
Non-nutrition	26	15	3	6	**52**	30	6	12

The tabulated data demonstrates that **88%** of students enrolled in nutritional studies and **52%** of those not pursuing nutrition-specific studies, advocated for the imposition of limitations on total fat and cholesterol intake as a means to foster optimal health. Figure 5 shows the graphical representation between the two groups.



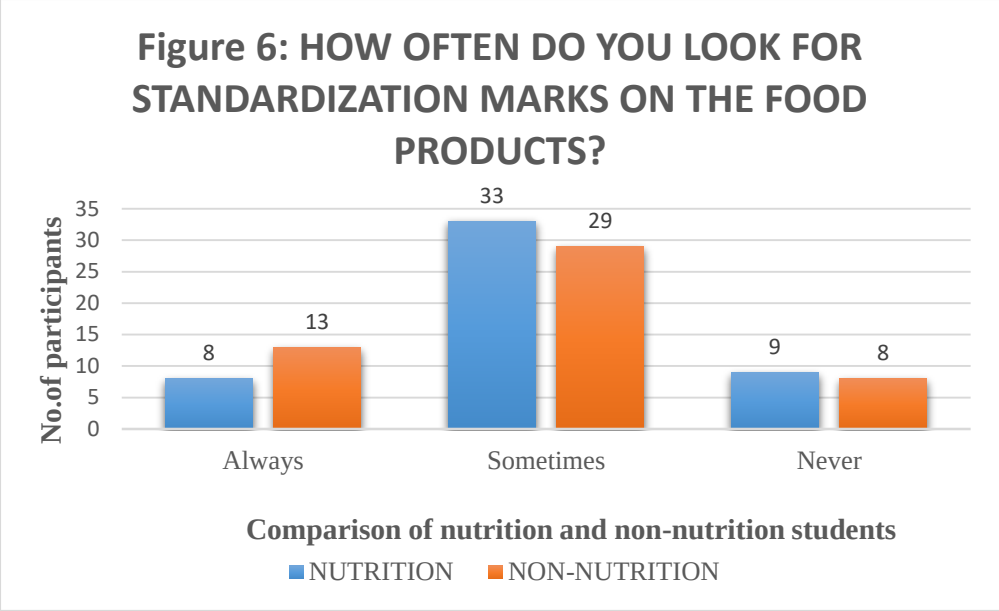
❖ **Awareness about standardization marks on food products-**

Table 4.6 shows the attention towards standardization marks on the food products between nutrition and non-nutrition students.

Table-4.6 Attention towards standardization marks on food products.

Stream	**No. of respondents**					
	Always		Sometimes		Never	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	8	**16**	33	66	9	18
Non-nutrition	13	**26**	29	58	8	16

The tabular presentation indicates that **16%** of students enrolled in nutrition-focused programs and **26%** of those not specializing in nutrition, who were involved in the study, expressed a habitual inclination to always seek out standardization marks on food items. However, the percentage who looked out for standardization marks often were higher for nutrition students (**66 %**). Figure 6 shows the graphical representation of those who looked out for standardization marks.



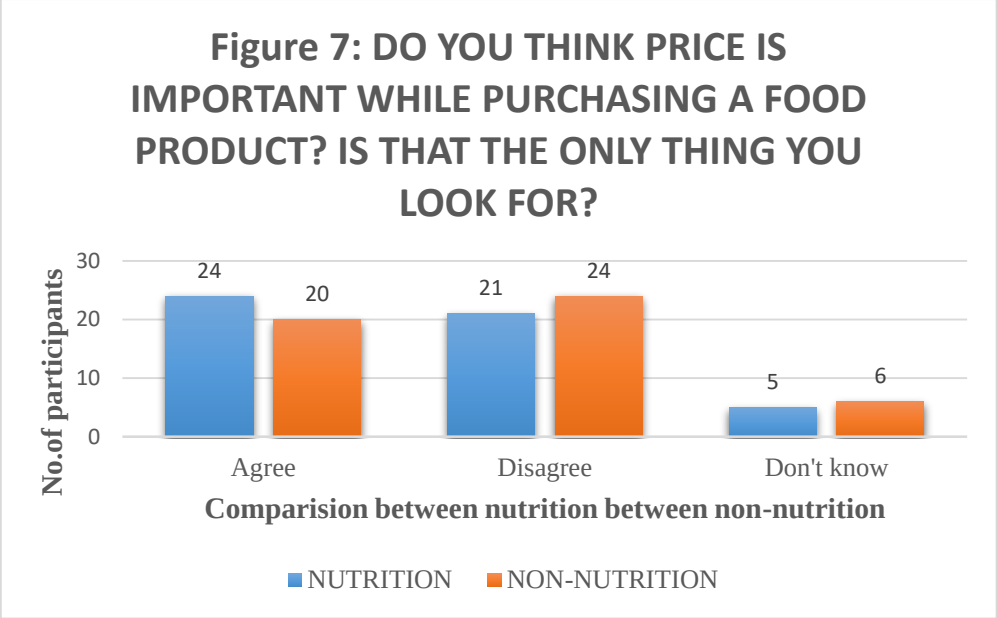
❖ **Consideration of cost as the only factor of purchasement of food products-**

Table 4.7 shows the consideration of cost as the only factor of purchasement of food products.

Table-4.7 Consideration of cost as the only factor of purchasement of food products.

Stream	**No. of respondents**					
	Agree		Disagree		Don't know	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	24	**48**	21	42	5	10
Non-nutrition	20	**40**	24	48	6	12

The tabular data reveals that **48%** of students enrolled in nutritional studies and **40%** of those not specializing in nutrition, who participated in the study, asserted the significance of price considerations in their decision-making process when purchasing food products, based on a total sample size of 100 study participants. It is graphically presented in figure 7.



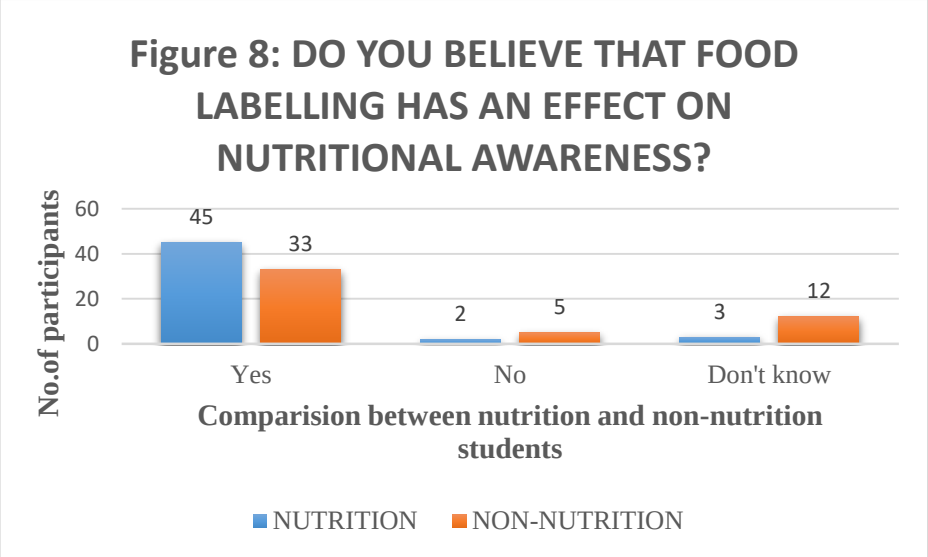
❖ **Effect of nutritional awareness through food labelling-**

Table 4.8 shows the effect of nutritional awareness through food labelling.

Table -4.8 Effect of nutritional awareness through food labelling.

Stream	**No. of respondents**					
	Yes		No		Don't know	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	45	**90**	2	4	3	6
Non nutrition	33	**66**	5	10	12	24

The table illustrates that **90%** of students specializing in nutrition and **66%** of those not engaged in nutrition-specific studies, indicated their belief in the influence of food labeling on nutritional consciousness. It is graphically represented in figure 8.



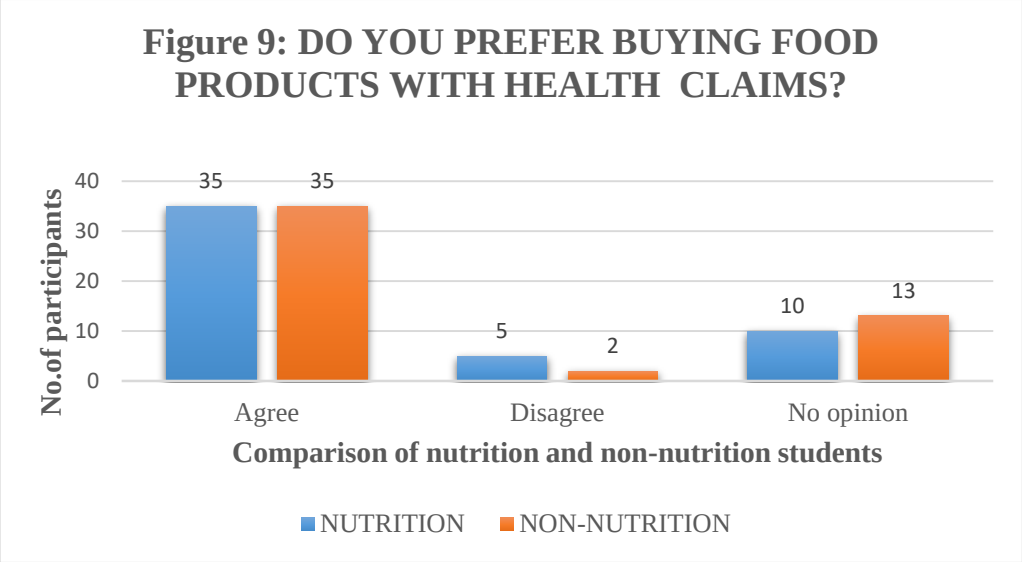
❖ **Preference of food products with health claims-**

Table 4.9 shows the preference of buying the food products with health claims.

Table-4.9 Preference of food products with health claims.

Stream	**No. of respondents**					
	Agree		Disagree		No opinion	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	35	**70**	5	10	10	20
Non-nutrition	35	**70**	2	4	13	26

The table presents that **70%** of both nutrition and non-nutrition students exhibited a preference for purchasing food items featuring health claims, as evidenced by a collective participation of 100 study participants. It is graphically presented in figure 9.



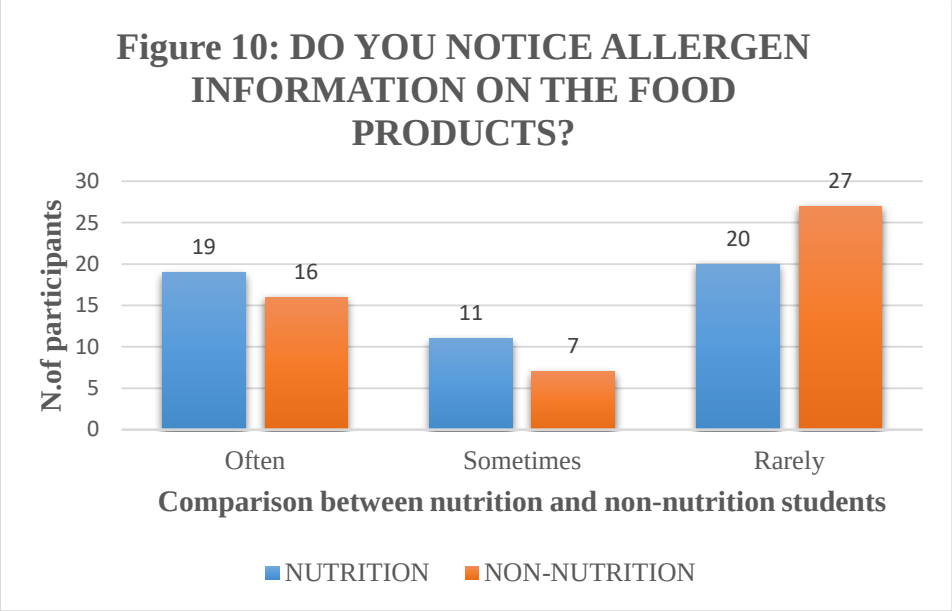
❖ **Awareness and observation of allergen information on food products-**

Table 4.10 shows the awareness and observation of allergen information on food products.

Table-4.10 Awareness and observation of allergen information on food products.

Stream	**No. of respondents**					
	Often		Sometimes		Rarely	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	19	**38**	11	22	20	40
Non-nutrition	16	**32**	7	14	27	54

The tabulated data indicates that **38%** of students enrolled in nutritional studies and **32%** of those not specializing in nutrition frequently observed allergen information provided on food products, as ascertained from a sample size of 100 study participants. Majority of the non-nutrition students (54 %) stated that they do not notice the allergen information. It is graphically represented in figure 10.



2. PERCEPTION OF GOOD HEALTH IN TERMS OF INTAKE OF NUTRIENTS THAT PROMOTE HEALTH AND THE EFFECT OF FOOD LABELLING ON NUTRITIONAL AWARENESS BETWEEN NUTRITION AND NON-NUTRITION STUDENTS.

This research undertakes a comparative examination to elucidate the distinctions between students enrolled in nutrition-oriented disciplines and those pursuing non-nutrition-related studies concerning their perceptions of optimal health with respect to nutrient intake and the impact of food labelling on nutritional awareness. The investigation was carried out under the following heading:

- **Perception of nutrients in promoting good health-**

  The study reveals that **88%** of students enrolled in nutritional studies and **52%** of those not pursuing nutrition-specific studies, advocated for the imposition of limitations on total fat and cholesterol intake as a means to foster optimal health.

- **Effect of nutritional awareness through food labelling-**

  The acquired data indicates that **90%** of students specializing in nutrition and **66%** of those not engaged in nutrition-specific studies, indicated their belief in the influence of food labelling on nutritional awareness.

❖ **Awareness and observation of allergen information on food products –**

The data collected represents that **38%** of students enrolled in nutritional studies and **32%** of those not specializing in nutrition frequently observed allergen information provided on food products, as ascertained from a sample size of 100 study participants. Majority of the non-nutrition students (54 %) stated that they do not notice the allergen information

❖ **Preference of food products with health claims-**

The study presents that **70%** of both nutrition and non-nutrition students exhibited a preference for purchasing food items featuring health claims, as evidenced by a collective participation of 100 study participants.

3. LEVEL OF TRUST ON FOOD LABELS ON FOOD PRODUCTS BETWEEN NUTRITION AND NON-NUTRITION STUDENTS

This study provides a comparative analysis delineating the variances in the levels of trust regarding food labelling between students enrolled in nutrition-focused disciplines and their counterparts pursuing non-nutrition-related academic fields. The investigation was carried out under the following headings:

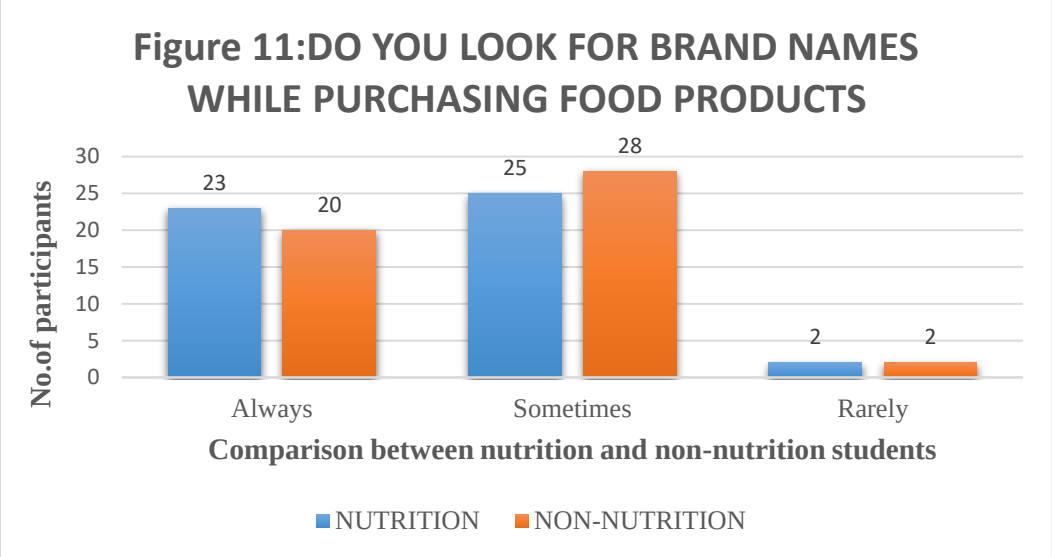
❖ **Perception of brands as a factor for purchasement of food products-**

Table 4.11 shows the perception of brands as a factor for the purchasement of food products.

Table 4.11 Perception of brands as a factor for the purchasement of food products.

Stream	**No. of respondents**					
	Always		Sometimes		Rarely	
	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
Nutrition	23	**46**	25	50	2	4
Non-nutrition	20	**40**	28	56	2	4

The table delineates that **46%** of students enrolled in nutritional studies and **40%** of those not specializing in nutrition consistently sought out brand names when procuring food products.



❖ **Purchasement of good quality food product –**

The data acquired reveals that a majority of participants, comprising **88%** of nutrition students and **64%** of non-nutrition students, expressed agreement with the practice of actively seeking out high-quality food products. Conversely, a minority, constituting **12%** of nutrition students and **30%** of non-nutrition students, indicated occasional adherence to this practice among a total cohort of 100 study participants.

❖ **Mindfulness of consumers towards nutritional labels on food products –**

The study reveals that a significant proportion of participants, comprising **88%** of nutrition students stated that they are mindful towards nutritional labels on their food products. This was higher when compared to that of non-nutrition students (64 %).

❖ **Level of trust on the nutrition information of the food products-**

The data collected shows that a higher percentage (**34%)** of participants who were enrolled in nutrition-related studies had trust on the nutrition information found on the food products and a lower percentage (**22%)** of non-nutrition students had trust on the nutrition information found on the food products.

CHAPTER-V

SUMMARY AND CONCLUSION

Significant findings of the study

The study entitled **'The knowledge, practice and attitude between nutrition and non-nutrition students about nutrition labelling'** was undertaken with the objective to assess the knowledge about the food labelling. For the study, 100 study participants were selected within the age limit of 17-30 years. The study participants included 50 nutrition and non-nutrition students. From the collected data, it was observed that majority of the individuals found food labels to be useful tools (94%) and easy to understand (61%).Many of them paid attention to whether the food products carried a nutrition label (76%).

A comparison was made between the two groups in terms of purchasement of good quality food product, utility of food labels for consumers, mindfulness of consumers towards nutritional labels on food products, level of trust on the nutrition information of the food products, perception of nutrients in promoting good health, awareness about standardization marks on food products, consideration of cost as the only factor of purchasement of food products, effect of nutritional awareness through food labelling, preference of food products with health claims, awareness and observation of allergen information on food products.

The survey showed that 88 % of students belonging to the nutrition field believes in the purchasement of good quality product whereas 64 % agreed from the non-nutrition field. A majority of nutrition students agreed about the utility of we can summarize food labels when compared to that of non-nutrition students. When the mindfulness of consumers towards nutrition labels were compared between nutrition and non-nutrition fields, it was found that 88 % of the nutrition students agreed that they noticed the labels. This was higher when compared to that of non-nutrition students.

Around 34% from nutrition field agreed that they trustee the nutrition information of food products and at the same time 2% respondents disagreed and 46 % did not have any opinion. Among the students from the non-nutrition field, 22 % agreed, 34 % disagree and 44 % did not have any opinion. In the case of perception of nutrients in promoting good health, 88 % of the study participants agree from nutrition major students whereas 26 % agreed from non-nutrition category. A majority of 48 % of nutrition students agreed that they considered cost as the only

factor of purchasement. Around 42 % disagreed and 10 % did not have any opinion. In case of non-nutrition students, 40 % agreed, 48 % disagreed and 32 % did not have any opinion.

The comparison between knowledge attitude and practice among nutrition and non-nutrition students likely found that nutrition students possessed a higher level of knowledge regarding nutritional labeling compared to non-nutrition students. Nutrition students have displayed positive attitudes toward the importance of nutritional labeling in making informed dietary choices. Nutrition students have demonstrated better practices in utilizing nutritional labeling when making food choices, such as regularly checking labels, understanding and comparing nutrient contents, and using labels to guide their dietary decisions. Non-nutrition students might show less consistent or informed practices in this regard. Nutrition students overwhelmingly support restrictions on total fat and cholesterol intake, likely due to their deeper understanding of the relationship between these nutrients and overall health. Non-nutrition students also express support for restrictions, though to a lesser extent, suggesting varying levels of awareness or prioritization of dietary factors among this group. Nutrition students are more likely to believe that food labeling impacts nutritional consciousness, likely due to their deeper understanding of the information presented on food labels. Non-nutrition students also recognize the role of food labeling, though not to the same extent, possibly due to differences in knowledge and awareness of nutritional information. Both nutrition and non-nutrition students exhibit a similar preference for purchasing food items featuring health claims, indicating that health claims play a significant role in influencing food purchasing decisions across both groups. Significant portion of both groups does observe allergen information, there's a notable difference in the frequency between students with and without a nutrition specialization. Furthermore, a considerable number of non-nutrition students do not pay attention to allergen information. Both groups of students, frequently seek out brand names when procuring food products. Brand recognition likely instills trust and familiarity in consumers, leading them to perceive branded products as higher quality or more reliable. A significant majority of both nutrition students and non-nutrition students agree with the practice of actively seeking out high-quality food products. A higher percentage of participants enrolled in nutrition-related coursework agreed with the accuracy of the nutritional information presented on food labels compared to those not specializing in nutrition. This suggests that students with a background in nutrition education are more likely to perceive nutritional information on food labels as accurate, highlighting the importance of accurate labeling for building consumer trust.

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APPENDIX – 1

Questionnaire to elicit information on the **'The knowledge, attitude and practice between nutrition and non-nutrition students about nutrition labelling'**

Personal Information

1. Name :
2. Course :
3. Year :

Short survey on food labelling

1. Do you make sure that you buy food products with good quality?

a. Agree
b. Degree
c. Sometimes

2. Food labels are useful tools for consumers

a. Agree
b. Disagree
c. No opinion

3. Do you pay attention to whether the food products carries a nutritional label?

a. Agree
b. Disagree
c. Never

4. Nutrition information that are provided in the food label is accurate.

a. Agree
b. Disagree
c. No opinion

5. Which nutrients should we limit and eat less to promote good health?

a. Protein, sugars and total fat
b. Sugars, fiber and total fat
c. Total fat, cholesterol and sodium
d. Don't know

6. Do you think price is important while purchasing a food product? Is that the only thing you look for?

a. Agree
b. Disagree
c. Don't know

7. Do you believe that food labelling has an effect on nutritional awareness?

a. Yes
b. No
c. Don’t know

8. Do you prefer buying food products with health claims?

a. Agree
b. Disagree
c. No opinion

9. Do you notice allergen information on the food products?

a. Often
b. Rarely
c. Sometimes