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A cross-sectional study to assess the knowledge, attitude, & practices regarding food labelling among College students of various Universities of Hyderabad & Secunderabad

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ABSTRACT

The aim of this study the knowledge, attitude & practices regarding food labelling among college students of various universities of Hyderabad & Secunderabad, to determine the knowledge of nutrition students about food labelling, to find out the role & impact of food labelling affecting attitude of college students and to assess the practices of nutrition students regarding food labelling.A cross-sectional survey of undergraduate students was carried out in November 2021 at several colleges in the twin cities. All university students were sampled using convenience sampling. 420 volunteers participated in the food label use Questionnaire (FLUQ). The university received ethical permission. Data was collected by handing out the questionnairesto the students.The anonymous nature of the surveys and the voluntary participation of the participants were assured to the students.. The FLUQ has 16 questions, including ones about sociodemographic, knowledge of food and nutrition, attitudes and behaviors linked to utilizing food labels and variables influencing the use of food labelling.There is a significant association between the 2 variables considered nutritional knowledge and consumer purchasing. It is important to be educated to be able to read the food labels. Chi square test showed a association.According to the study conducted, Nutritional knowledge have a positive influence on the individuals packed food purchases.

KEYWORDS: Food labels, consumer, nutrition, package.

INTRODUCTION:

The present study was designed with the objective of determining nutrition students' KNOWLEDGE, ATTITUDE & PRACTICES on food labels among different colleges in Hyderabad & Secunderabad. The information reviewed in following section is all related to the study.

ORIGIN OF FOOD LABELS:

The evolution of every economy is reflected in the evolution of food labelling. It wasn't until the 18th century that consumers started asking for containers. In the past, consumers grew food to meet their needs or traded goods with their neighbours. The demand for containers began with the advent of general stores in the early 18th century. [1]

At this point the consumer has brought his own container. In the mid-18th century, with the start of urbanization in, food manufacturers began shipping their goods. This created the need to pre-package food in containers. The container had to be labelled to indicate its contents. The information provided was basic. [2]

FOOD LABELS:

Currently, food labels are used to inform the consumer and help vend the food products [3]

Presently, it's familiar that numerous complaints are diet related and can be control or averted throughout an applicable diet and thus to change eating pattern, sufficient information similar as nutritive information must be handed at the point of purchase (Cunningham and Sobolewski, 2011)

It can make simpler the whole conception of healthy eatingand useful for making better food choices [4]

There are numerous factors being considered during buying the food products similar as packaging, price, taste and nutritive labelling & the type of nutrition information used also impact the scholars understanding toward nutrition information therefore impact them to read or not the markers. For illustration, different formats are used in different countries leading to confusing to the consumers during food copping decision [5]

IMPORTANCE OF FOOD LABELS:

Foodlabelsareoneoftheimportantmediumsforconsumerstoknowwhatisintheirfoodsothattheycanmaketherightdecisionsbasedonallthenecessaryinformationaboutthehealthyandhygienicpropertiesoffood.[6]

Labellingcanconveyimportantinformationaboutsearch,experience,andtrustattributesofproducts,andisthereforeastrongsignalofqualityandadirectaidtoconsumersinmakingpurchasingdecisions[7]

1.4 FOOD LABELS AS COMMUNICATIVE TOOL:

For food, purchasing decisions are primarily made in-store and food labels and packaging play an important role at the point of sale, communicating information about the product and supporting the consumer , can be persuaded. Select specific products [8]

According to Polish law, food sold with or without packaging intended for the final consumer must contain the following information:

- Net Weight or Quantity of Product Samples in Packages,
- Storage Conditions,
- Product Serial Number,
- Product Quality (Regarding a class or other category) .

If the product has a maximum area (area that can be used for informational purposes) of less than 10 cm2, detailed information may not be provided, including: name of the product, expiry date or expiry date; net weight or quantity of product sample in package [9]

METHODOLOGY:

Study design: It is a quantitative & qualitative study

Study Area: The study was conducted in both private & government degree colleges in the twin cities which offers Applied Nutrition as their course, covering the following areas: Tolichowki, Shalibanda, Secunderabad, Malakpet, Jahanuma Falaknuma

Age Group: 18-21 years old

Sample size: 420

Study population: Students who are studying BSc. Applied Nutrition in the three different regions in the twin cities.

Sampling Technique: PURPOSIVE SAMPLING (intentional selection of informants based on their ability to elucidate a specific theme, concept, or phenomenon). The students were selected based on their choice of course. All the subjects who were pursuing second & final year in BSc. Nutrition & who belonged to the chosen three areas were a part of the study

A consent from the students/ subjects was obtained as their personal data was collected . This study was undertaken with the permission & under the supervision of authorities of the colleges. This was possible due to the support of Department of Nutrition at St. Ann’s.

Inclusive criteria:Subjects Studying in the three regions of the twin cities and belonged to second & final year of BSc. Applied Nutrition.

Exclusive criteria: First years BSc. Applied Nutrition students & PG nutrition students.

Materials: A questionnaire including their demographic details, their food preferences, questions related to their purchasing habits were included.

Process Of Data Collection:With a target group of clinical nutrition degree students between the ages of 18 and 22, a cross-sectional survey of undergraduate students was carried out in November until December 2021 at several colleges in twin cities, employing a single percentage method to determine the minimal sample size, with a precision of 0.05 at a 95% confidence interval.

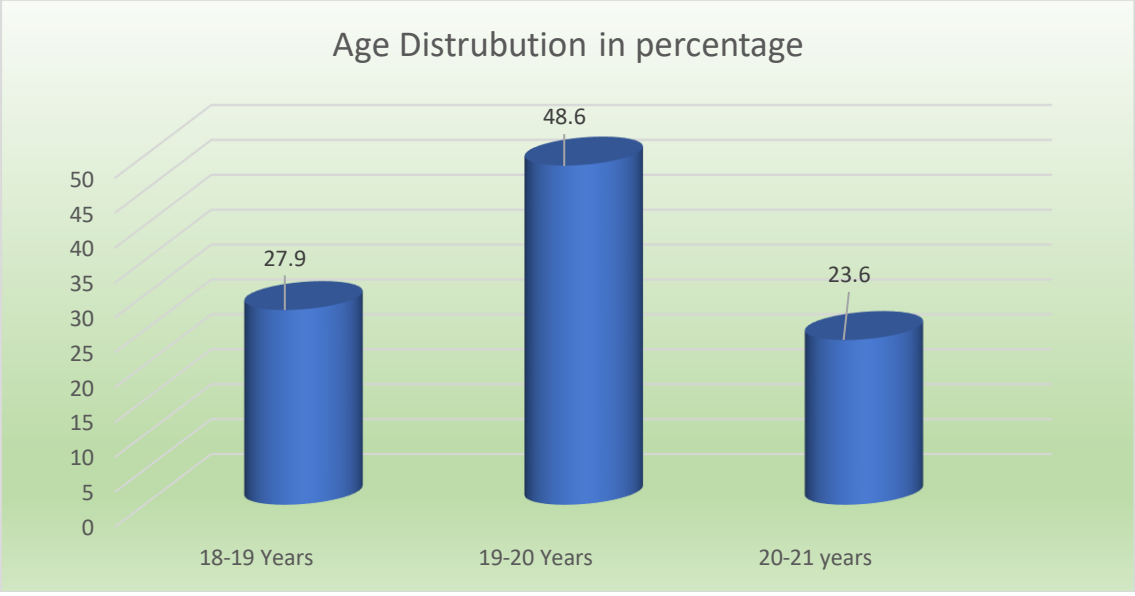
Results & Discussion

Demographic Profile
Age of the respondents

Table 1 Age of the respondents

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-19 Years	117	27.9	27.9	27.9
	19-20 Years	204	48.6	48.6	76.4
	20-21 years	99	23.6	23.6	100.0
	Total	420	100.0	100.0	

Figure.1 Age of the respondents



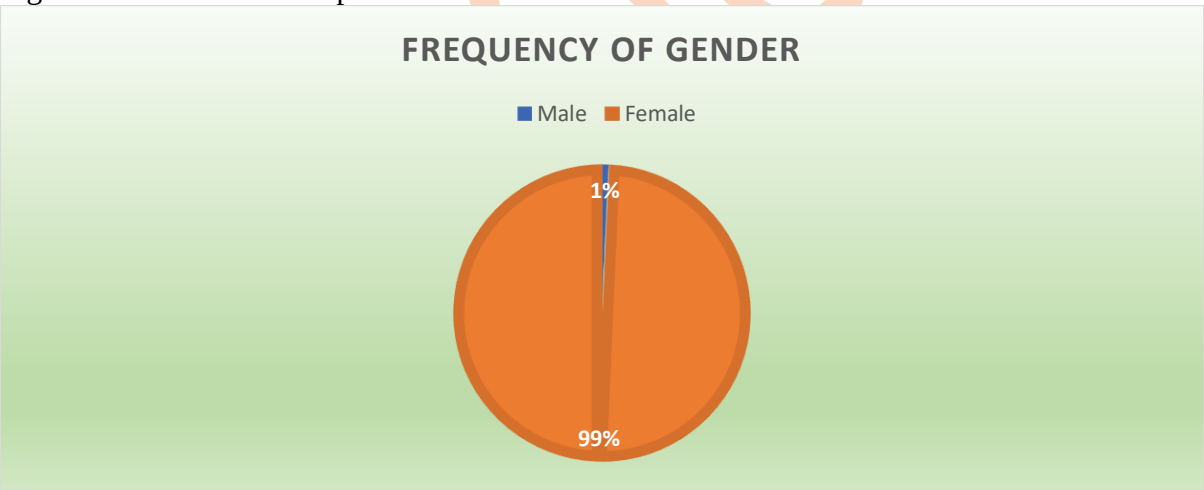
This graph shows the age distribution in percentage of the participants & out of 420 students interviewed 117 (27.9%) participants belonged to 18-19 age group and 204 (48.6%) participants were of 20-21 years of age.

Gender of the respondents

Table 2 Gender of the respondents

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	3	.7	.7	.7
	Female	417	99.3	99.3	100.0
	Total	420	100.0	100.0	

Figure 2 Gender of the respondents



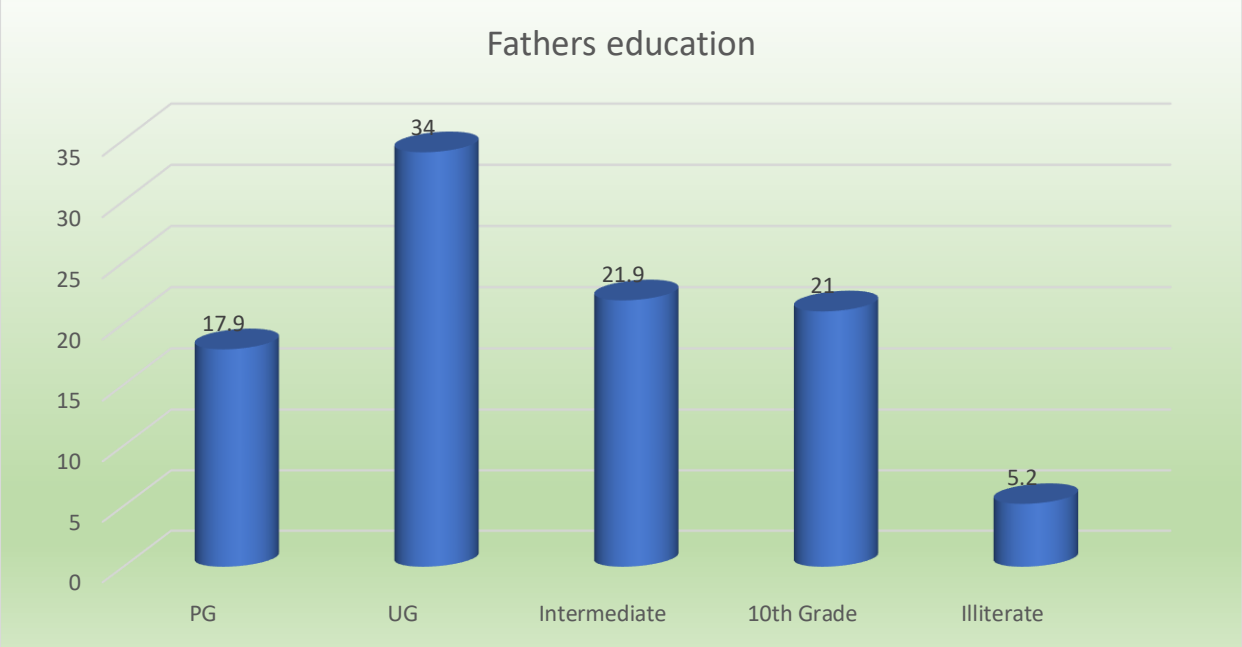
This pie chart depicts the percentage of male participants against female participants explaining the frequency of gender. Male participants have a frequency of 3, while their percent, valid percent and cumulative percent is 0.7 percent each respectively. On the other hand, female participants have a frequency of 417, while their percent and valid percent is 99.3 percent each. Cumulative percent of females is maximum with 100. Summing up, frequency of both genders would be 420, while percent and valid percent as 100.

Parental Literacy / Educational Status
Father's Education

Table 3 Father's Education

Father Education qualification					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PG	75	17.9	17.9	17.9
	UG	143	34.0	34.0	51.9
	Intermediate	92	21.9	21.9	73.8
	10th Grade	88	21.0	21.0	94.8
	Illiterate	22	5.2	5.2	100.0
	Total	420	100.0	100.0	

Figure 3 Father's Education



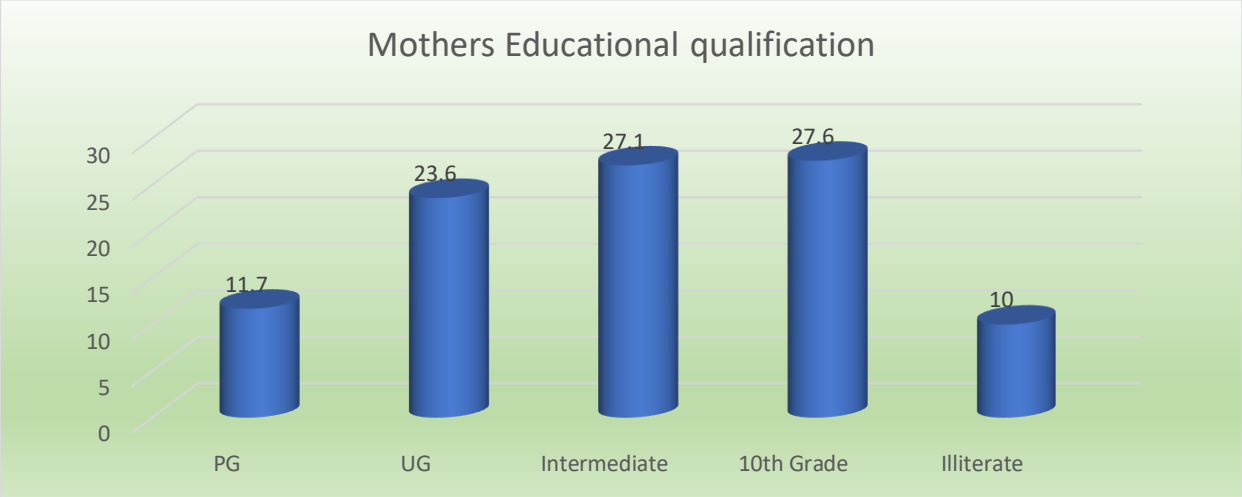
This graph shows the frequency, percent, valid percent and cumulative percent of educational qualification of fathers. The levels of qualifications considered for are PG, UG, Intermediate, 10th Grade and Illiterate. The frequency of PG qualification of fathers is 75, with percent, valid percent and cumulative percent as 17.9 each. Further, UG qualified fathers have a frequency of 143, while their percent and valid percent 34 each, but cumulative percent as 51.9. Moreover, if intermediate level qualified fathers are considered, their frequency is 92, with percent and valid percent as 21 each. Cumulative percent of this group is 73.8. Likewise, for 10th pass fathers, frequency would be 88 while their percent and valid percent will be 21 each and cumulative percentage.

Mother's Education

Figure 4 Mother's Education

Mother Education					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PG	49	11.7	11.7	11.7
	UG	99	23.6	23.6	35.2
	Intermediate	114	27.1	27.1	62.4
	10th Grade	116	27.6	27.6	90.0
	Illiterate	42	10.0	10.0	100.0
	Total	420	100.0	100.0	

Figure 4 Mother's Education



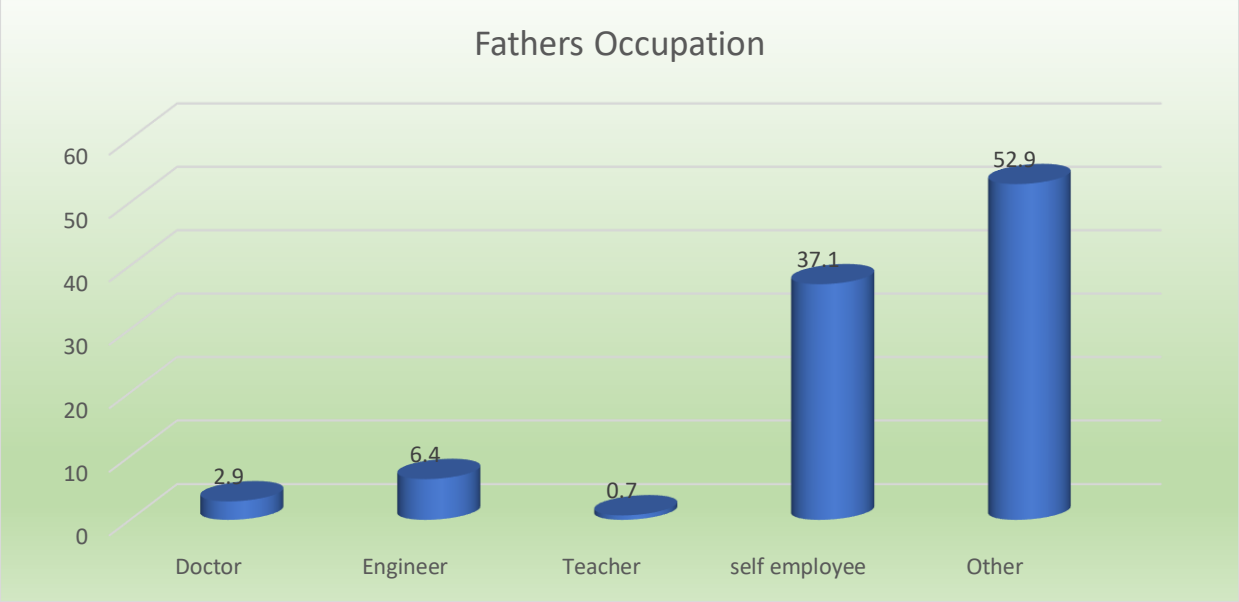
The following graph depicts the frequency and percentages of educational qualification levels of mothers of our participants. Like in the case of fathers, all levels of educational qualifications like PG, UG, Intermediate, 10th and Illiterate is considered for comparison among mothers. PG qualified mothers have a frequency of 49, with percent, valid percent and cumulative percent as 11.7 each. UG qualified mothers have a frequency of 99, with percent and valid percent as 23.6 each and cumulative percent as 35.2. Intermediate qualified mothers have frequency of 114, with percent and valid percent as 27.6 each and cumulative frequency as 62.4. Mothers with 10th grade have frequency of116, percent and valid percent of 27.6 each and cumulative percent of 90. Illiterate mothers have frequency of 42, percent and valid percent of 10 each and cumulative percent of 100. In total, all mothers have frequency of 420 and percent, valid percent as 100 each respectively.

Occupation of the parents
Father's Occupation

Table.4.Father's Occupation

Father Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Doctor	12	2.9	2.9	2.9
	Engineer	27	6.4	6.4	9.3
	Teacher	3	.7	.7	10.0
	self employee	156	37.1	37.1	47.1
	Other	222	52.9	52.9	100.0
	Total	420	100.0	100.0	

Figure 4 Father's Occupation



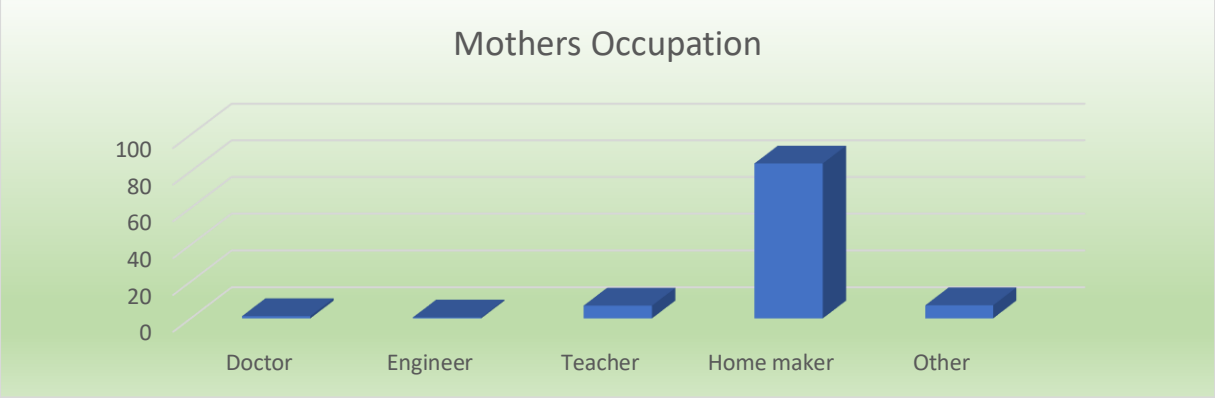
This graph and table explain the occupations of fathers of our participants in terms of frequency and different percentages. Five occupations are considered which are doctor, engineer, teacher, self-employee and others. Doctors have a frequency of 12 while their percent, valid percent and cumulative percent is 2.9 each respectively. Engineers have 27 as frequency while 6.4 each as percent and valid percent. 9.3 is the cumulative percent of engineers. Teachers have frequency of 3, 0.7 as percent and valid percent and cumulative percent as 10. Self-employees have frequency of 156, percent and valid percent as 37.1 each and cumulative percent as 47.1. On the other hand, all other occupations have frequency of 222, percent and valid percent as 52.9 and cumulative percentage.

Mother's Occupation

Table 5 Mother's Occupation

Mother Occupation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Doctor	5	1.2	1.2	1.2
	Engineer	2	.5	.5	1.7
	Teacher	29	6.9	6.9	8.6
	Home maker	354	84.3	84.3	92.9
	Other	30	7.1	7.1	100.0
	Total	420	100.0	100.0	

Figure 5Mother's Occupation



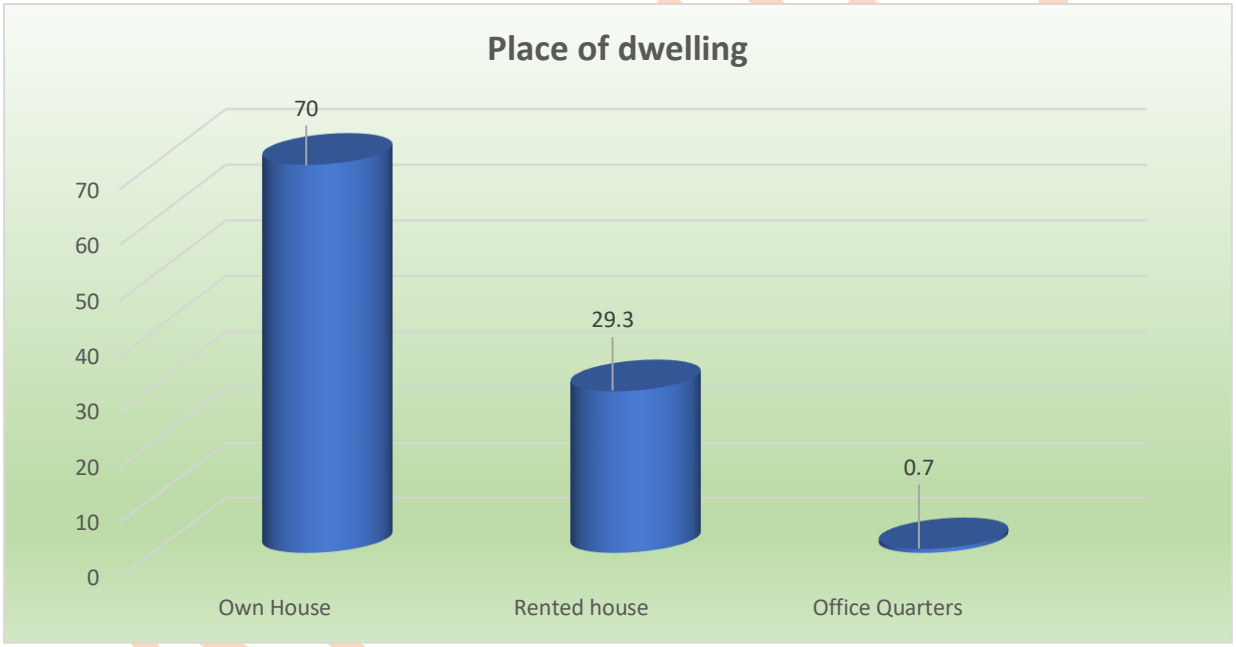
Now, let us consider the table and graph for occupations of mothers of the participants. Four occupations are considered likewise in the case of fathers with one change. Here, doctors, engineers, teachers and home makers are considered for comparison along with others as another group in the occupation list. Commencing with doctors, mothers have frequency of 5, while percent, valid percent and cumulative percent is 1.2 each for all three parameters. Engineer mothers have frequency of 2, their percent and valid percent is 0.5 and cumulative percent is 1.7. Teachers have frequency of 29, percent and valid percent of f6.9 and cumulative percent of 8.6. Home makers have highest frequency of 354, with highest percent and valid percent of 84.3 each and cumulative percentage.

Place of Dwelling

Table 6 Place of Dwelling

Place of dwelling					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Own House	294	70.0	70.0	70.0
	Rented house	123	29.3	29.3	99.3
	Office Quarters	3	.7	.7	100.0
	Total	420	100.0	100.0	

Figure 6 Place of Dwelling



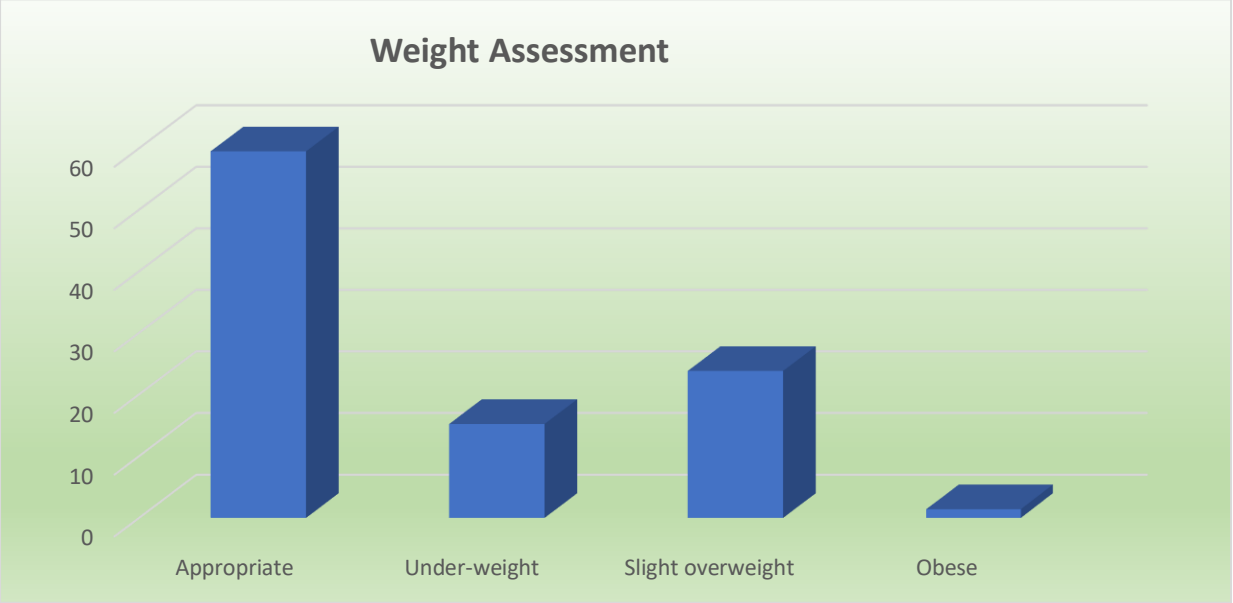
In this graph, the participants tell us about the types of accommodations they stay at. Three types of accommodations are used in the table and graph which are: own house, rented house and office quarters. Frequency of own house is highest with 294 while percent and valid percent is 70 each and cumulative percent is 70 too. Rented houses have same percent and valid percent as 29.3 each, with frequency as 123 and cumulative percent as 99.3. Office quarters have lowest frequency of just 3, lowering the percent and valid percent to a meagre 0.7 each, with cumulative percent at 100. By adding all frequencies, 420 is the result achieved. Percent and valid percent are 100 each respectively.

Weight Assessment

Table 7 Weight Assessment

Weight Assessment					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Appropriate	250	59.5	59.5	59.5
	Under-weight	64	15.2	15.2	74.8
	Slight overweight	100	23.8	23.8	98.6
	Obese	6	1.4	1.4	100.0
	Total	420	100.0	100.0	

Figure 7Weight Assessment



This table and graphs talk about the estimate of weight what the participants think they actually have. Some participants estimate their weight appropriately with frequency as 250, percent, valid percent and cumulative percent as 59.5 each. Under-weight participants have frequency of 64, percent and valid percent of 15.2 each and cumulative percent of 74.8. Slight overweight participants have frequency of 100, while percent and valid percent of 23.8 each and cumulative frequency of 98.6. Obese group have the lowest frequency of 6, percent and valid percent of 1.4 each and cumulative percent of 100. In total, all frequencies come up to 420 with 100 each as percent and valid percent.

Food Label Information
Subject's Knowledge about the ISI mark

Table 8 Subject's Knowledge about the ISI mark

Food label information					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	38	9.0	9.0	9.0
	Yes	382	91.0	91.0	100.0
	Total	420	100.0	100.0	

Figure 8 Subject's Knowledge about the ISI mark

The above figures display the number of students who can identify and estimate the quality symbol ISI on food products. Students with NO have frequency of 38, percent and valid percent as 9 each and similarly they have 9 as cumulative percent. Students with YES have frequency of 382, percent and valid percent of 91 each and cumulative percent of 100. Frequencies added up are 420 in total, while percent and valid percent is 100 each.

Subject's Knowledge about the FPO mark

Table 9 Subject's Knowledge about the FPO mark

Estimate Quality Symbol FPO					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	43	10.2	10.2	10.2
	Yes	377	89.8	89.8	100.0
	Total	420	100.0	100.0	

Figure 9 Subject's Knowledge about the FPO mark

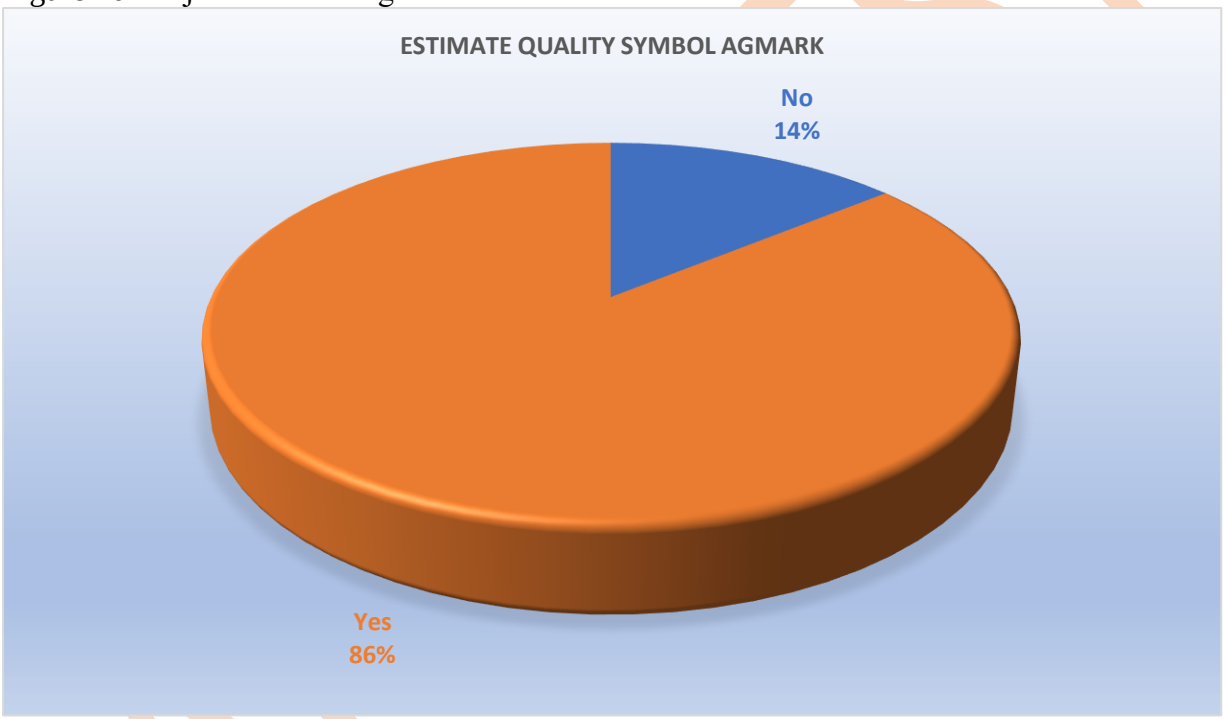
This tells us about the identification and estimation of students for quality symbol FPO on food products. Yes and no two answers will obviously be derived. Students with YES have frequency of 377, percent and valid percent of 89.8 each respectively and 100 as cumulative percent. Students with NO have frequency of 43 with percent and valid percent as 10.2 each and cumulative percent as 10.2 too. All combined, frequencies add up to 420 while percent and valid percent are 100 each.

Subject's Knowledge about the AGMARK

Table 10 Subject's Knowledge about the AGMARK

Estimate Quality Symbol AGMARK					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	59	14.0	14.0	14.0
	Yes	361	86.0	86.0	100.0
	Total	420	100.0	100.0	

Figure 10 Subject's Knowledge about the AGMARK



Similar to other tables and graphs, we will see the identification and estimation of quality symbol AGMARK by the participating students. Frequency of students with answer NO is 59, with percent, valid percent and cumulative percent as 14 each. In contrast, the students with answer YES have frequency in high numbers of 361 with percent and valid percent remaining at 86 each, while cumulative percent as 100. In total. frequency result is 420 and percent and valid percent is 100.

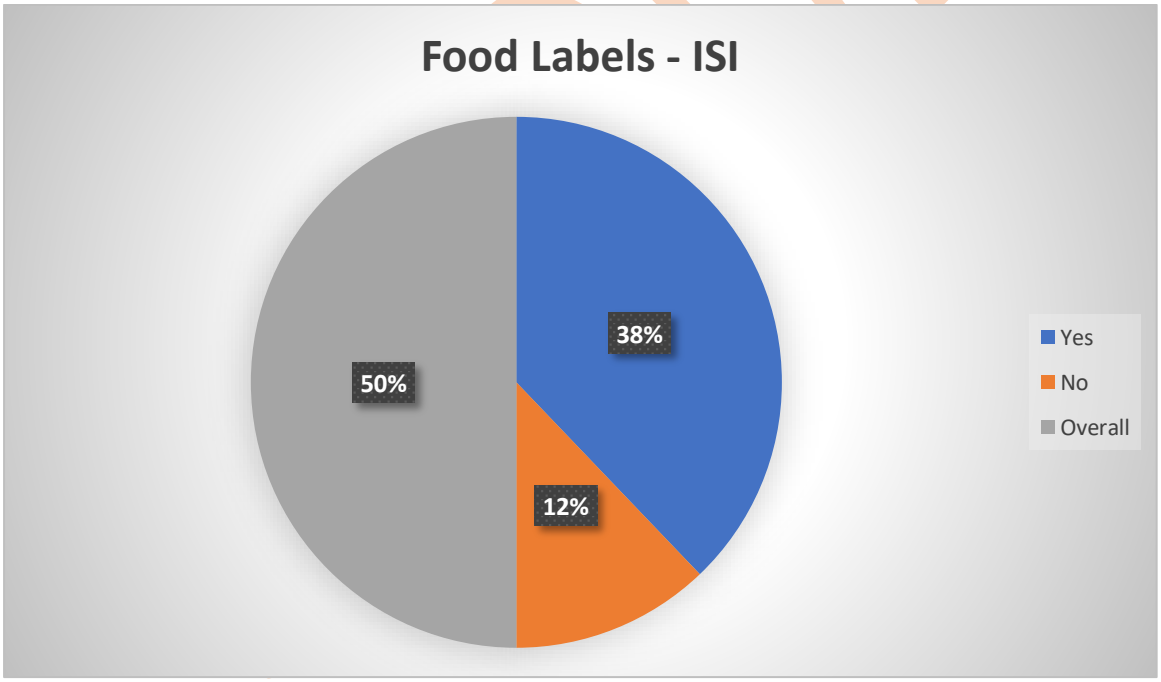
Labels used for different types of food

Table 11 1 Labels used for different types of food

ISI Mark

ISI mark					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	102	24.3	24.3	24.3
	Yes	318	75.7	75.7	100.0
	Total	420	100.0	100.0	

Figure 11 Labels used for different types of food



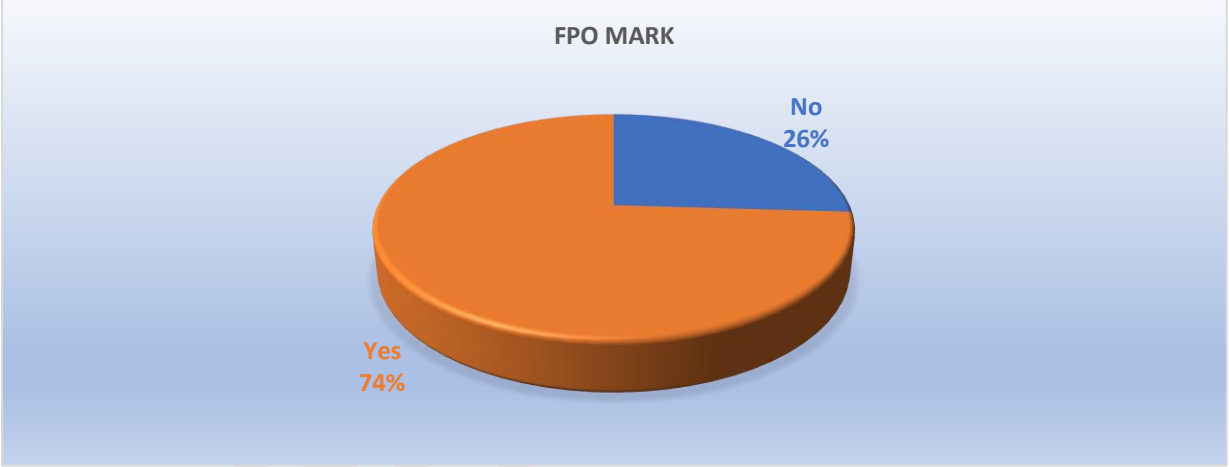
This table shows whether our participating students can identify and estimate the ISI mark used for packaged drinking water. Frequency of participant with answer NO is 102 while their percent, valid percent and cumulative percent is 24.3 each. Participants with YES have frequency of 318, percent and valid percent of 75.7 each and a cumulative percent of 100. Adding up both frequencies, 420 is the result with percent and valid percent at 100 each.

Table 12 Labels used for different types of food

FPO mark

FPO mark					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	109	26.0	26.0	26.0
	Yes	311	74.0	74.0	100.0
	Total	420	100.0	100.0	

Figure 12 Labels used for different types of food - FPO mark



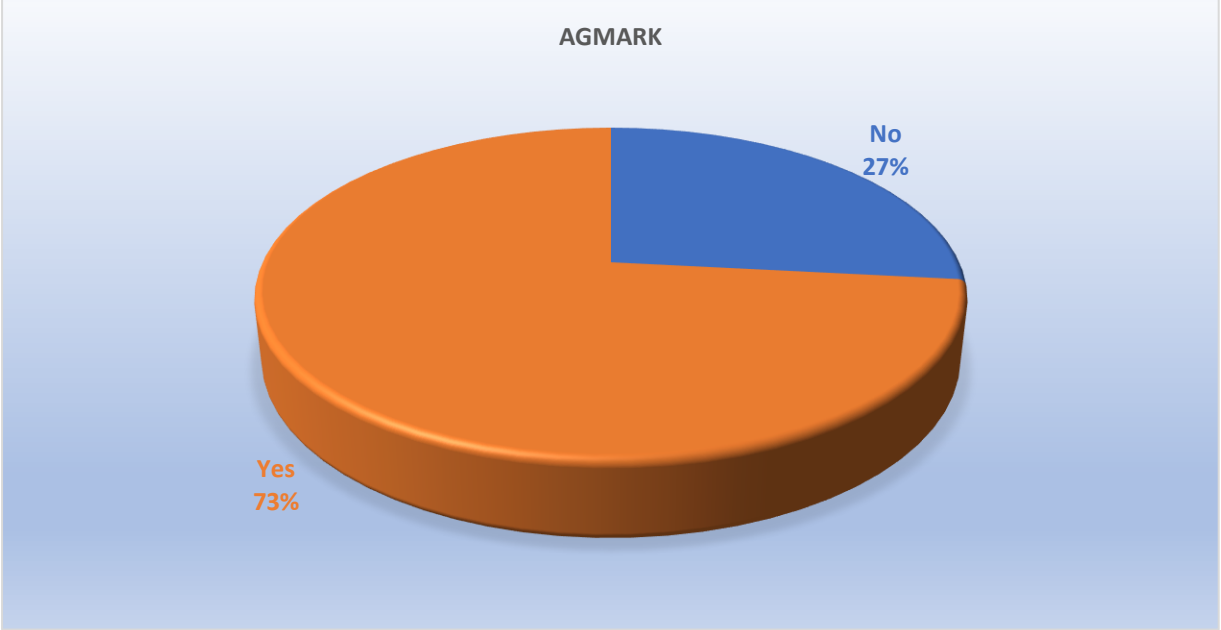
With this table and pie chart, we get to know about the FPO mark used for fruit and fruit products, if our participating students know about it. Out of a frequency of 420 students, 109 come up with NO and 311 come up with YES. Percent and valid percent of NO is 26 each while that of YES is 74 each. Cumulative percent of NO is 26 while that of YES is 100.

Table 13Labels used for different types of food

AGMARK

AGMARK					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	112	26.7	26.7	26.7
	Yes	308	73.3	73.3	100.0
	Total	420	100.0	100.0	

Figure 13 Labels used for different types of food



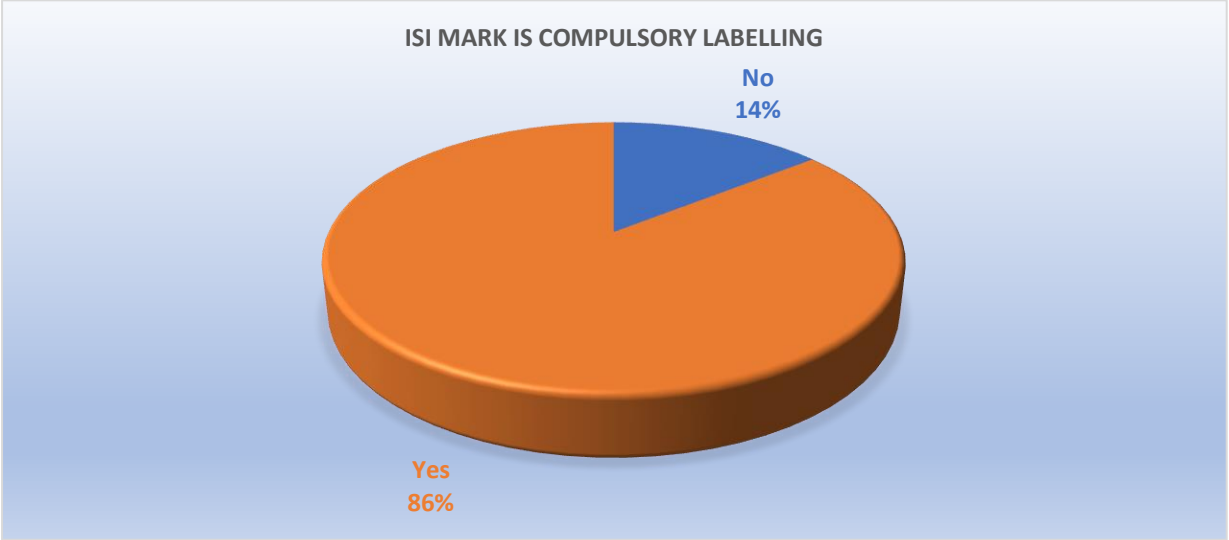
Now, let us study about student's knowledge in predicting AGMARK which is used for agricultural products. Out of 420 participating students, answer NO is 112, with percent, valid percent and cumulative percent as 26.7 each. Students with YES have frequency of 308, percent and valid percent as 73.3 each and 100 as cumulative percent. Total percent and valid percent of both is 100 each.

Compulsion of food labelling
ISI Mark

Table 14 ISI Mark

ISI mark is compulsory labelling					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	60	14.3	14.3	14.3
	Yes	360	85.7	85.7	100.0
	Total	420	100.0	100.0	

Figure 14 ISI Mark



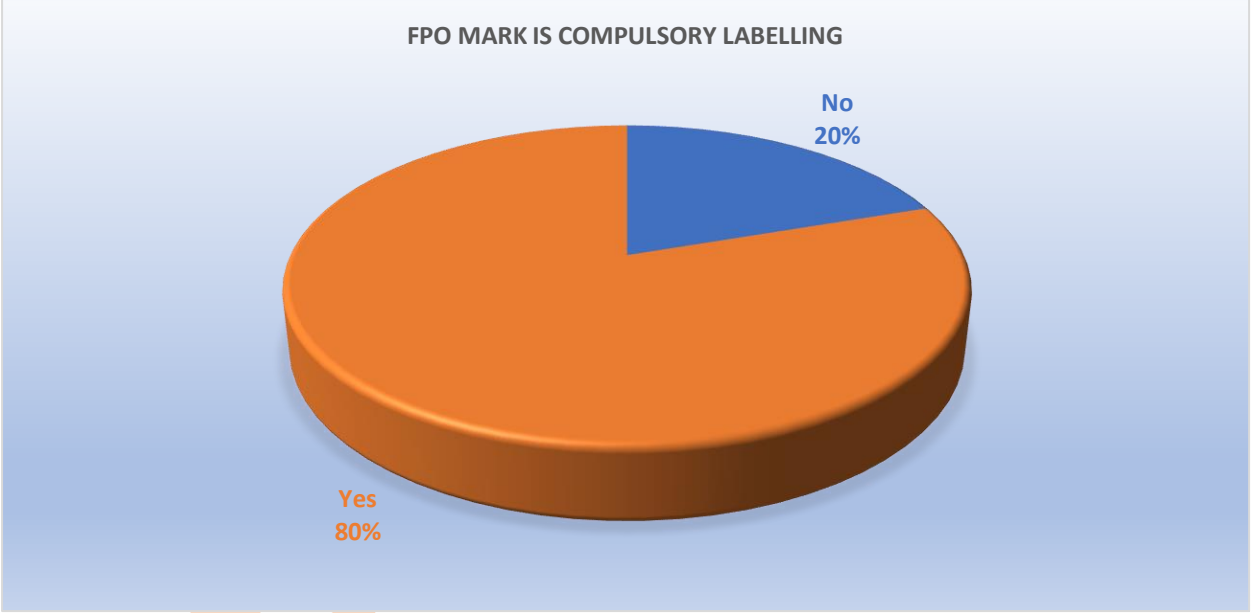
Let's understand the knowledge of students if they know that the ISI mark is compulsory for food labelling for packaged food or not. Out of 420 students, 60 have frequency of NO, they're percent, valid percent and cumulative percent is 14.3 each. Student with YES have frequency of 360, percent and valid percent as 85.7 each.

FPO Mark

Table 15 FPO Mark

FPO mark is compulsory labelling					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	83	19.8	19.8	19.8
	Yes	337	80.2	80.2	100.0
	Total	420	100.0	100.0	

Figure 15 FPO Mark



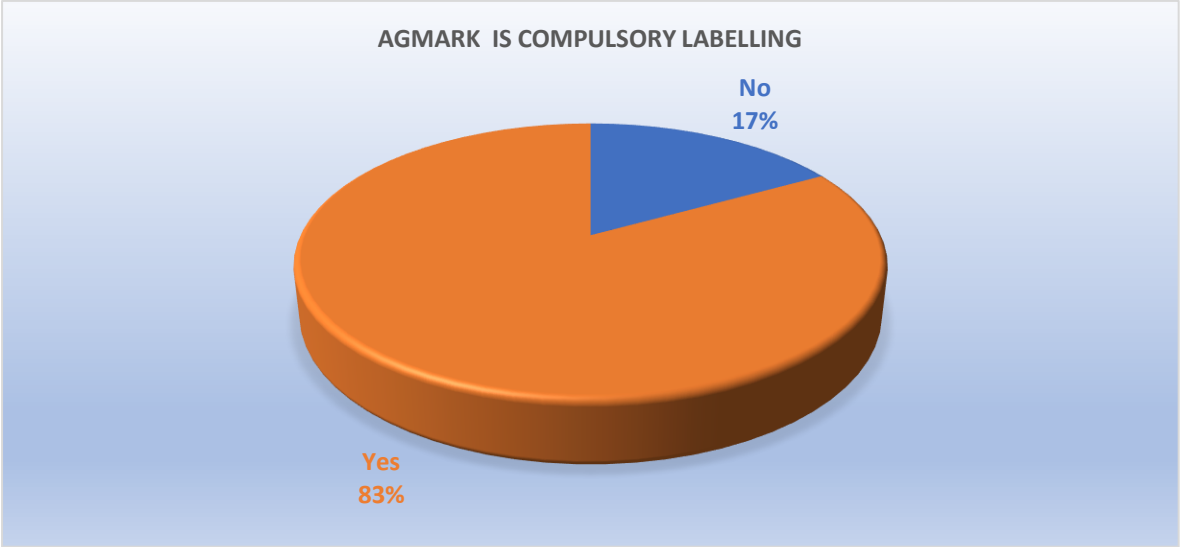
Here, students are surveyed to see if they have knowledge of FPO mark which is compulsory labelling for packaged food. We will see their percentage on how much do they know about this compulsion. Students with NO have a frequency of 83 with 19.8 each as percent, valid percent and cumulative percent. Students with YES have frequency of 337 with percent and valid percent as 80.2 each.

AGMARK

Table 16 AGMARK

AGMARK is compulsory labelling					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	71	16.9	16.9	16.9
	Yes	349	83.1	83.1	100.0
	Total	420	100.0	100.0	

Figure 16 AGMARK



Another important labelling which is compulsory for packaged food is AGMARK. Let us see if our students know about this compulsion of labelling or not. 420 students come up with answers YES and NO. Frequency of NO is 71 while YES is 349. Percent and valid percent of NO is 16.9 each. Percent and valid percent of YES is 83.1 each.

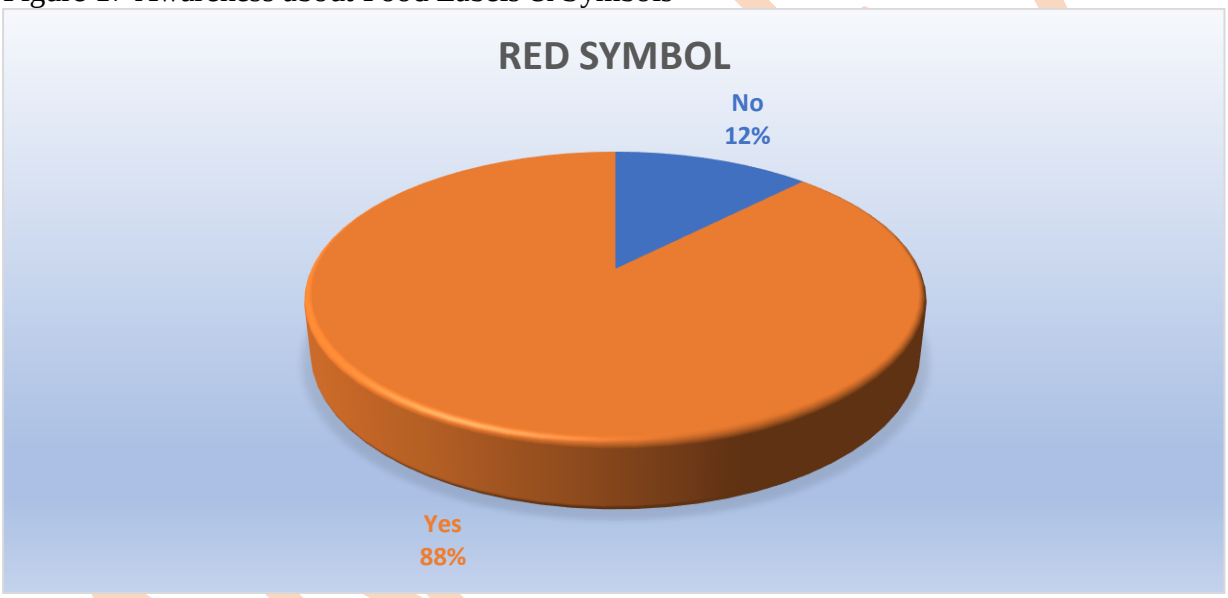
Awareness about Food Labels & Symbols

Non-Veg

Table 17 Awareness about Food Labels & Symbols

Red symbol					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	52	12.4	12.4	12.4
	Yes	368	87.6	87.6	100.0
	Total	420	100.0	100.0	

Figure 17 Awareness about Food Labels & Symbols



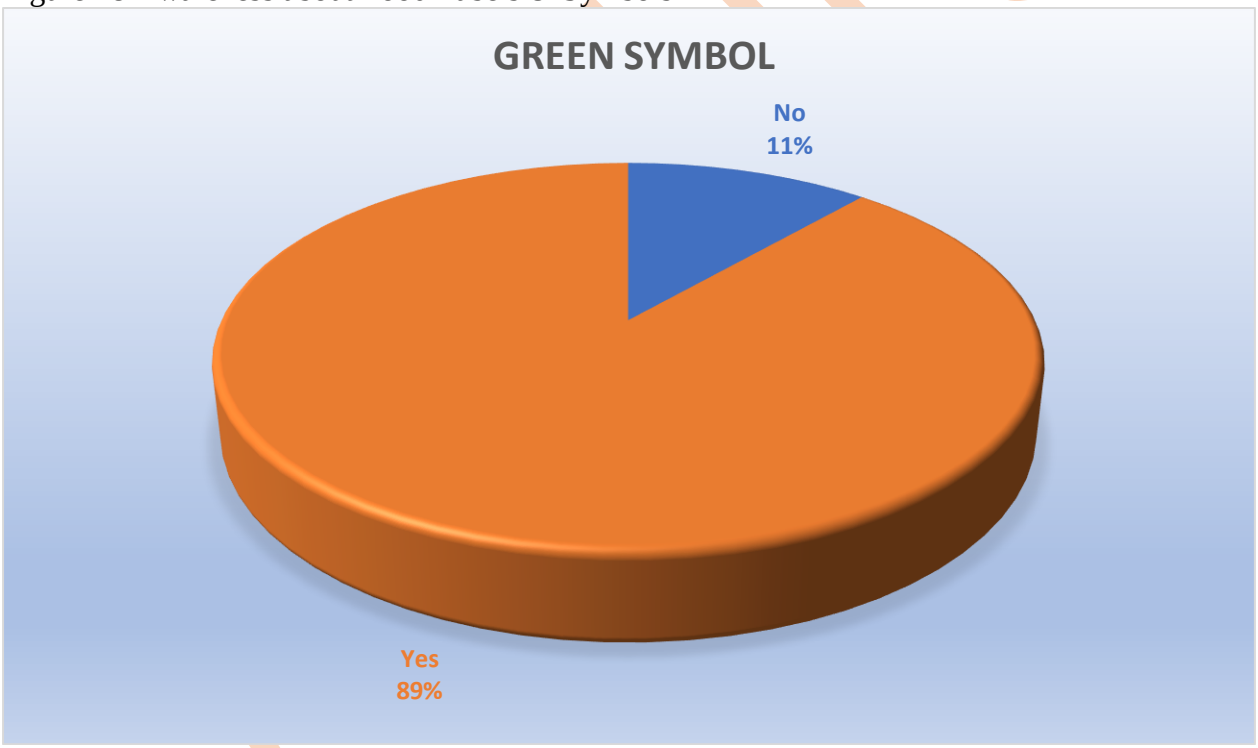
All food products have symbols which indicate whether it is non-vegetarian food or vegetarian food. Let's study about the knowledge of our participating students if they know about these symbols or not. Frequency of student with NO is 52 with percent, valid percent and cumulative percent as 12.4 each respectively. Students with YES frequency are higher in number with 368 with cumulative percent as 100. Percent and valid percent of YES is 87.6 each. 100 is the goal percent and valid percent of both answers.

Vegetarian Symbol

Table 18 Awareness about Food Labels & Symbols

Green symbol					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	48	11.4	11.4	11.4
	Yes	372	88.6	88.6	100.0
	Total	420	100.0	100.0	

Figure 18 Awareness about Food Labels & Symbols



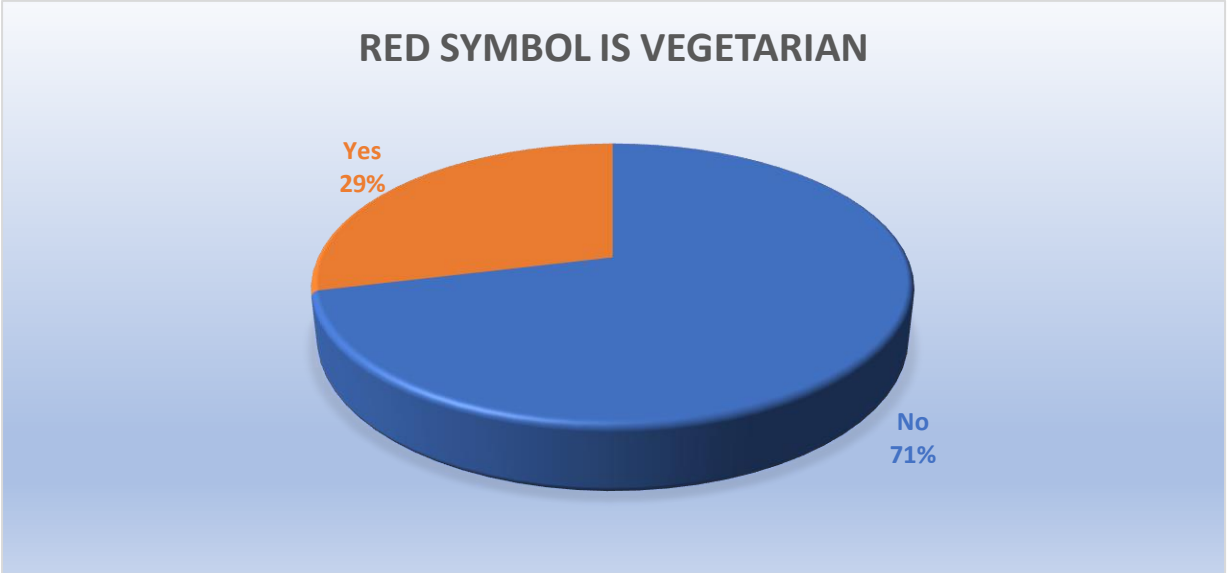
Next survey is conducted to study the knowledge of students if they have seen a green symbol on food products. When asked if they have seen this green symbol before, 48 said no with percent, valid percent and cumulative percent as 11.4 each. More students came up with answer yes with frequency of 372, percent and valid percent of 88.6 each. The survey was conducted for a total of 420 students.

Identification of the correct statement

Table 19 Awareness about labels

RED symbol is vegetarian					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	299	71.2	71.2	71.2
	Yes	121	28.8	28.8	100.0
	Total	420	100.0	100.0	

Figure 19 Awareness about labels

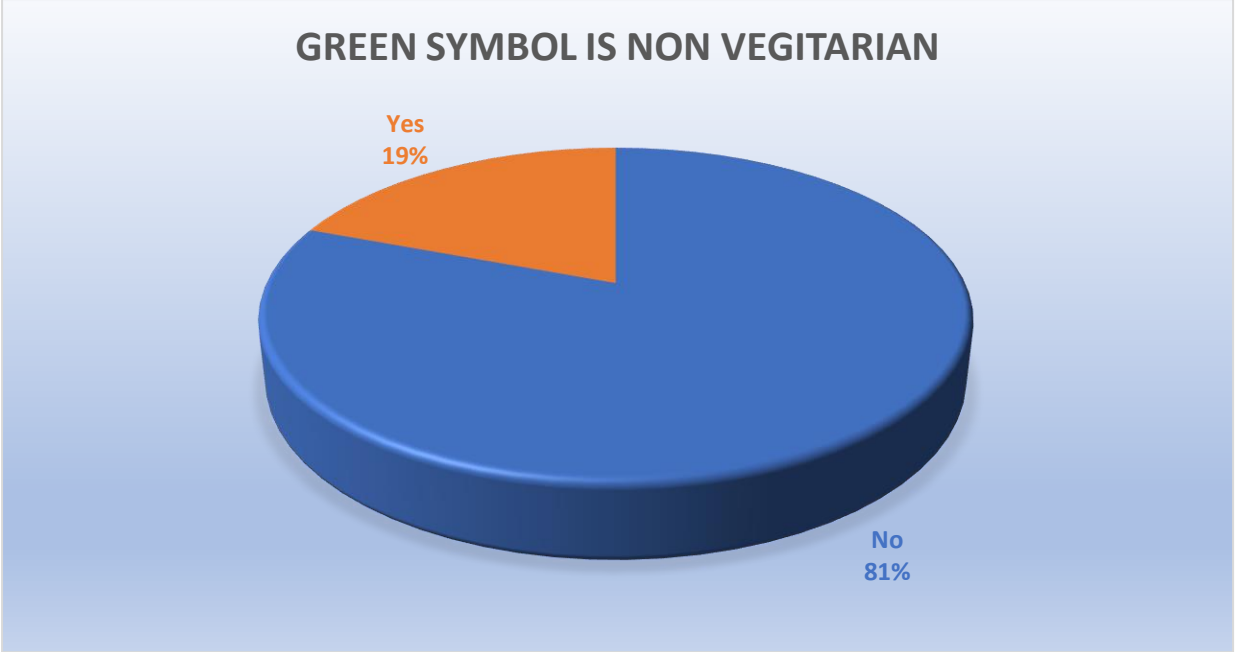


Now, just to twist our participating students to check their knowledge we surveyed them asking if red symbol is vegetarian. Majority of students came up with the correct answer NO that is 299 students with percent, valid percent and cumulative percent of 71.2 each. Students with wrong answer YES were 121 with 28.8 as percent and valid percent. This way all 420 students were surveyed.

Table 20 Awareness about labels

Green symbol is Non vegetarian					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	339	80.7	80.7	80.7
	Yes	81	19.3	19.3	100.0
	Total	420	100.0	100.0	

Figure 20 Awareness about labels

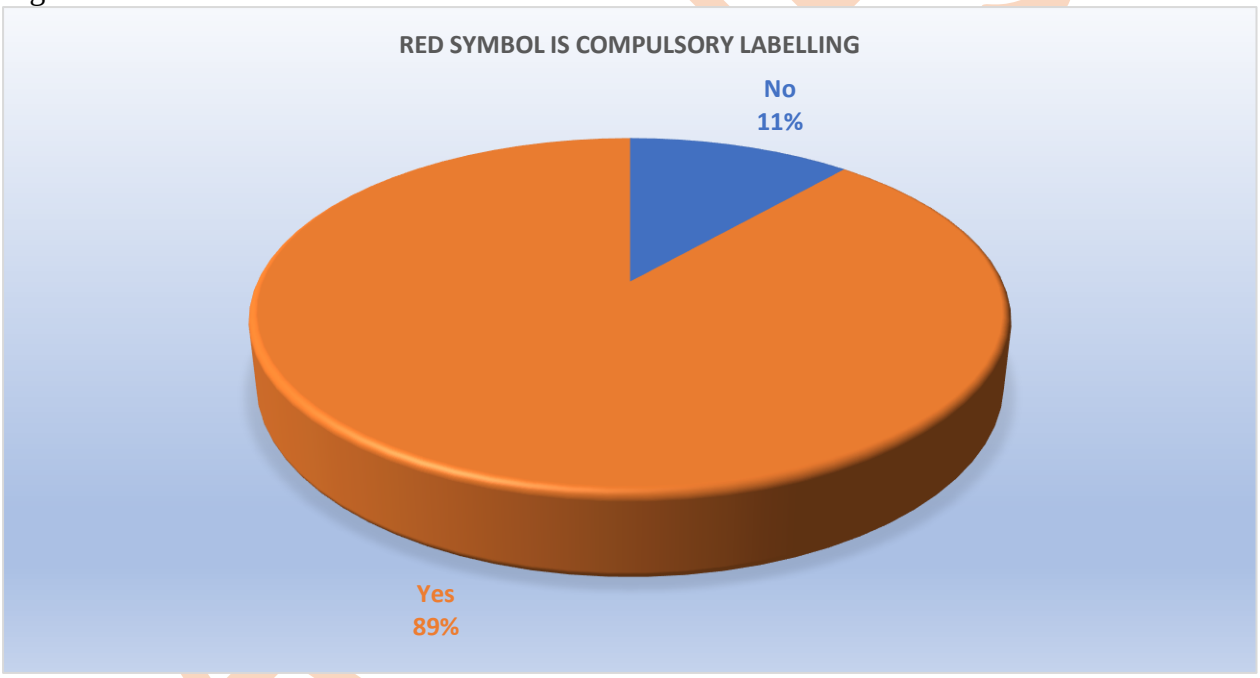


Further, we have changed the question and tried to check the knowledge of our participating students. This time we asked them if green symbol is non vegetarian. Frequency of correct answer YES was 339 with percent, valid percent and cumulative percent as 80.7 each respectively. Students with wrong answer NO were 81 with percent and valid percent of 19.3 each. In this manner, all 420 students were surveyed.

Compulsion for labelling
Table 21 Awareness about labels

Red symbol is compulsory labelling					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	48	11.4	11.4	11.4
	Yes	372	88.6	88.6	100.0
	Total	420	100.0	100.0	

Figure 21 Awareness about labels

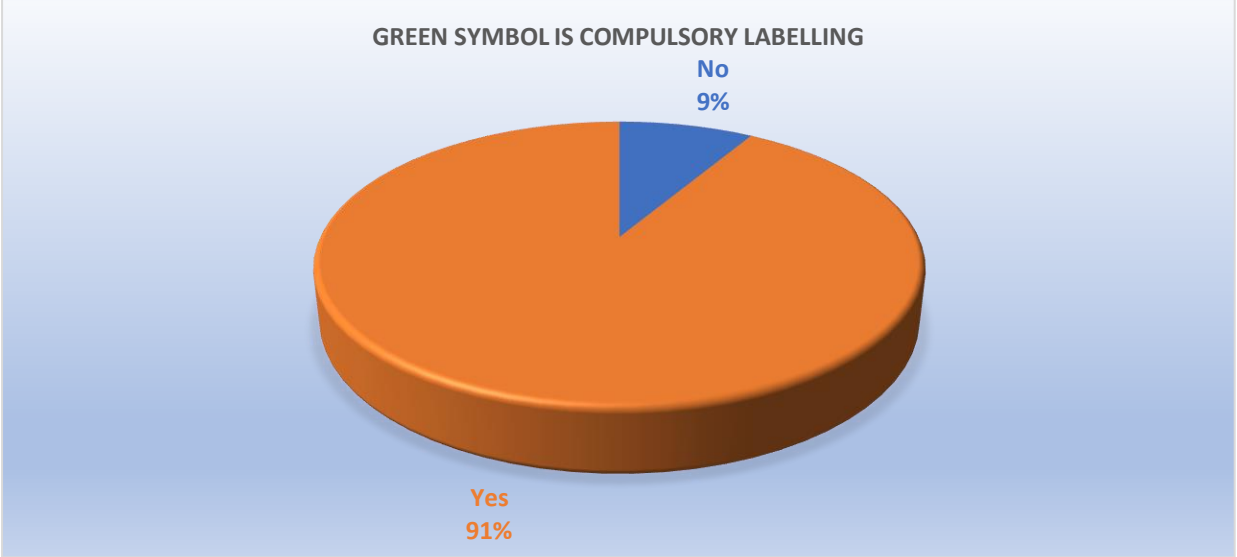


Out of 420 students interviewed, (48) 11.4% participants chose 'No' for 'Is red symbol compulsory labelling for packaged food' and (372) 88.6% participants chose 'Yes' as their answer for 'Is red symbol compulsory labelling for packaged food'.

Table 22 Awareness about labels

Green symbol is compulsory labelling					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	36	8.6	8.6	8.6
	Yes	384	91.4	91.4	100.0
	Total	420	100.0	100.0	

Figure 22 Awareness about labels



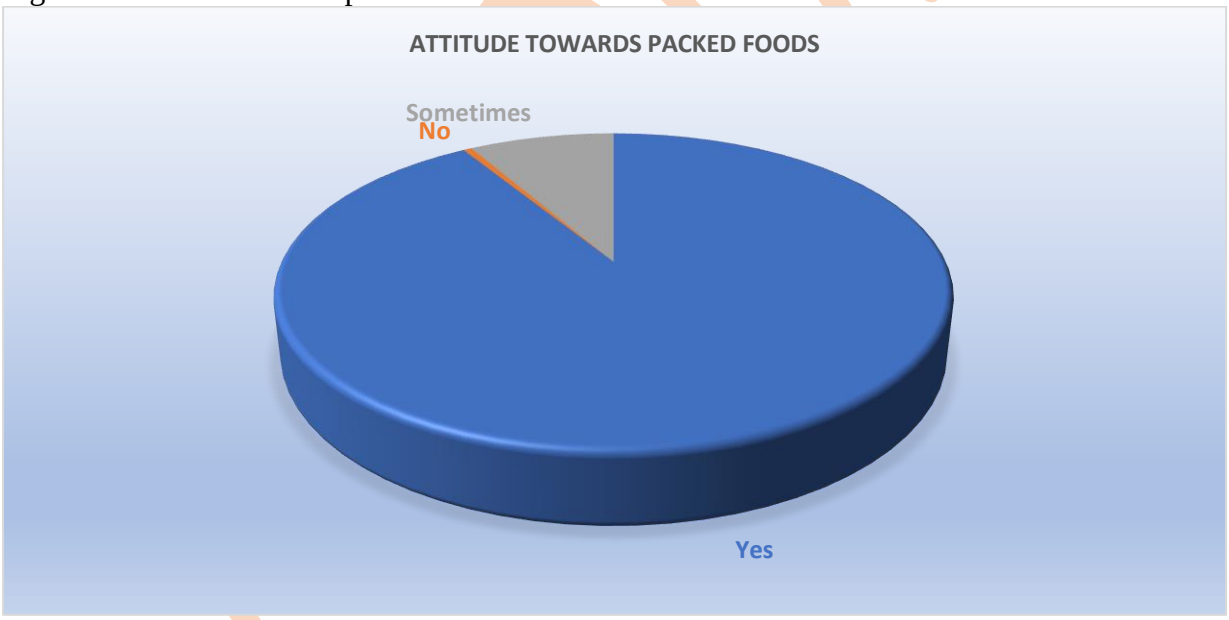
Out of 420 students interviewed, (36) 8.6% participants chose 'No' for 'Is green symbol compulsory labelling for packaged food' and (384) 91.4% participants chose 'Yes' as their answer for 'Is green symbol compulsory labelling for packaged food'

Attitude & Opinions on food labels
Attitude toward packed foods

Table 23 Attitude toward packed foods

Attitude towards packed foods					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	383	91.2	91.2	91.2
	No	2	.5	.5	91.7
	Sometimes	35	8.3	8.3	100.0
	Total	420	100.0	100.0	

Figure 23 Attitude toward packed foods

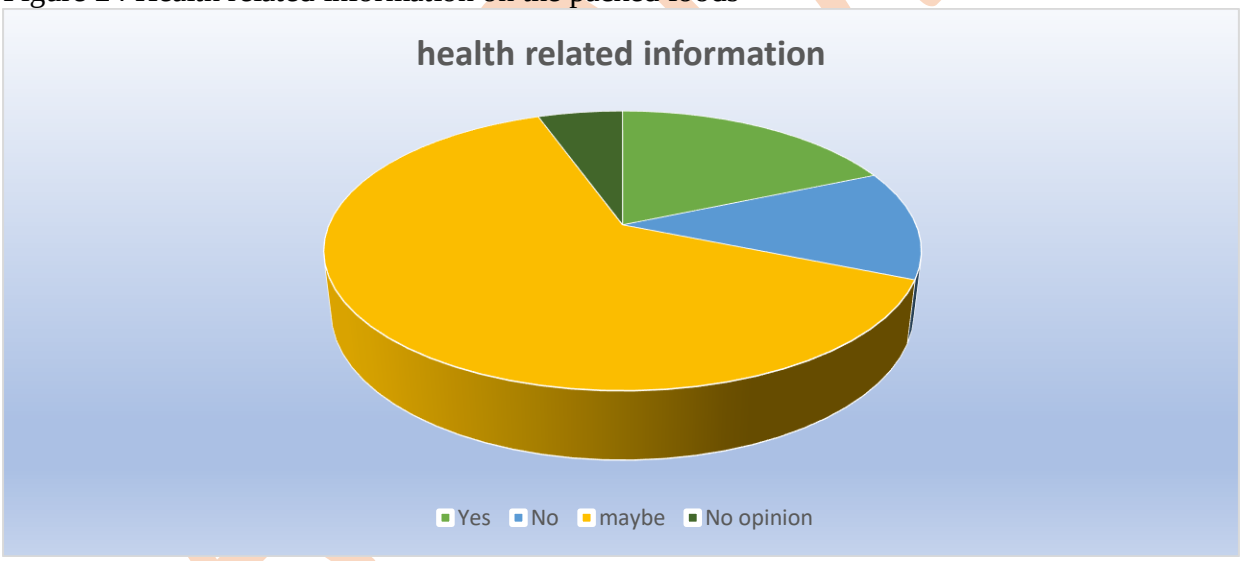


Out of 420 students interviewed, (383) 91.2% participants chose YES, (2) 0.5% participants chose NO and (35) 8.3% participants chose SOMETIMES when asked 'When you buy a packaged food, do you want to know about the food inside the pack ?'

Table 24 Health related information on the packed food

health related information					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	78	18.6	18.6	18.6
	No	53	12.6	12.6	31.2
	maybe	266	63.3	63.3	94.5
	No opinion	23	5.5	5.5	100.0
	Total	420	100.0	100.0	

Figure 24 Health related information on the packed foods



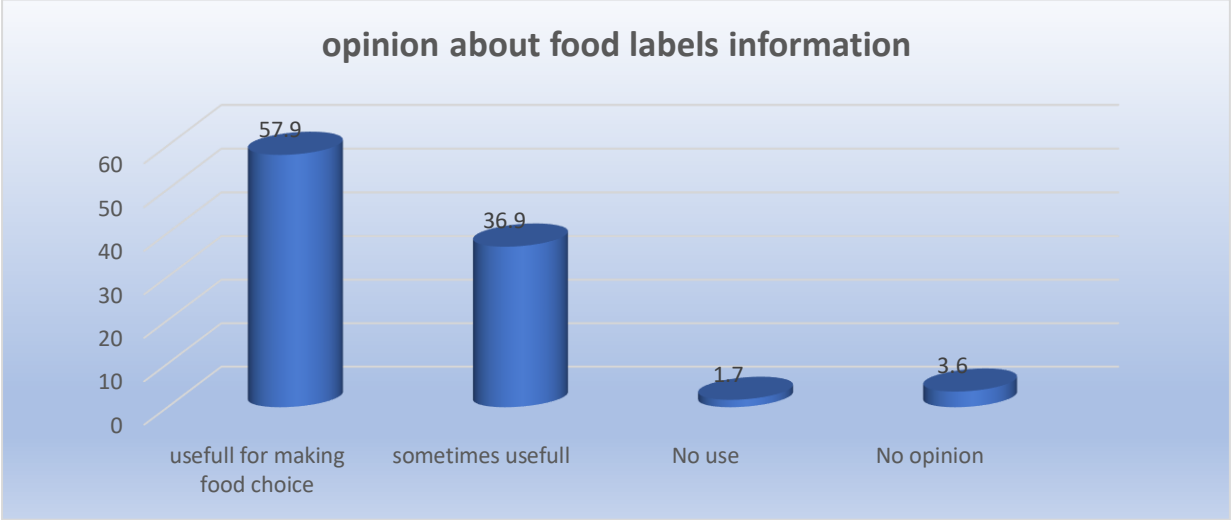
Out of 420 students interviewed, (78) 18.6% participants chose YES, (53) 12.6% participants chose NO, (266) 63.3% participants chose MAYBE and (23) 5.5% participants had noopinion when asked 'Do you think health related information written on the pack usually true ?'

Opinion about food label information

Table 25Opinion about food label information

opinion about food labels information					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	useful for making food choice	243	57.9	57.9	57.9
	sometimes useful	155	36.9	36.9	94.8
	No use	7	1.7	1.7	96.4
	No opinion	15	3.6	3.6	100.0
	Total	420	100.0	100.0	

Figure 25 Opinion about food label information



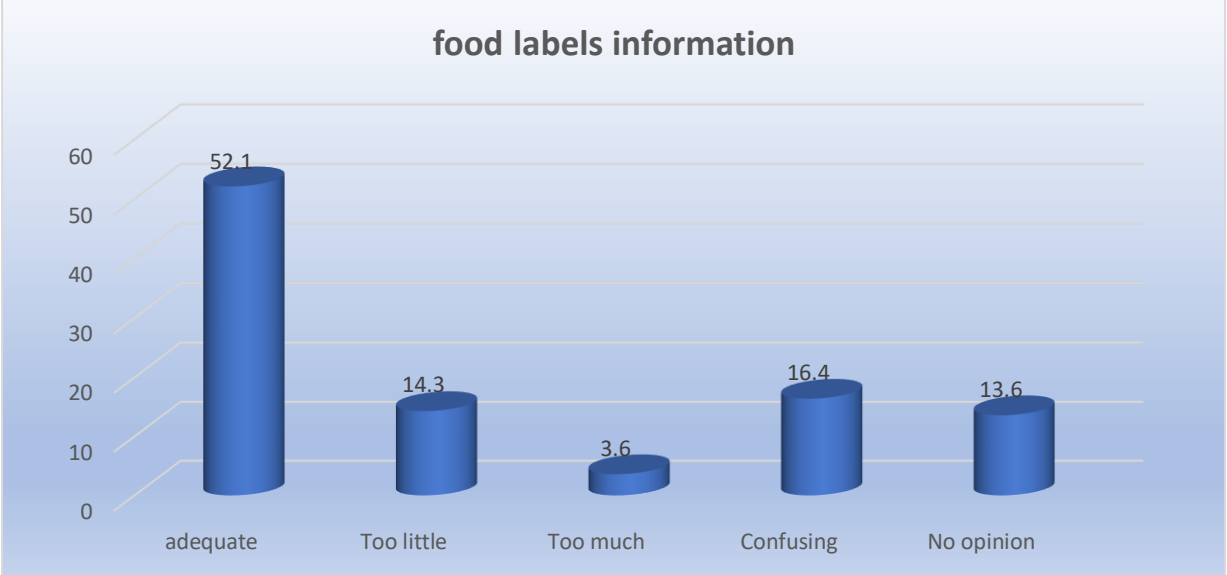
Out of 420 students interviewed for opinion on food labels information, (243) 57.9% participants said it was useful for making food choices, (155) 36.9% participants said it was sometimes useful for making food choices, (7) 1.7% participants said it was of no use in making food choices and (15) 3.6% participants had no opinion.

Food label information

Table 26 Food label information

food labels information					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	adequate	219	52.1	52.1	52.1
	Too little	60	14.3	14.3	66.4
	Too much	15	3.6	3.6	70.0
	Confusing	69	16.4	16.4	86.4
	No opinion	57	13.6	13.6	100.0
	Total	420	100.0	100.0	

Figure 26 Food label information



Out of 420 students interviewed for food labels information, (219) 52.1% participants said the information is adequate, (60) 14.3% participants said the information is too little, (15) 3.6% participants said the information is too much, (69) 16.4% participants said the information was confusing and (57) 13.6% participants had no opinion.

Best before date information

Table 27 Best before date information

"Best Before date"					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Safe	335	79.8	79.8	79.8
	Not safe	70	16.7	16.7	96.4
	Don't Know	15	3.6	3.6	100.0
	Total	420	100.0	100.0	

Figure 27 Best before date information

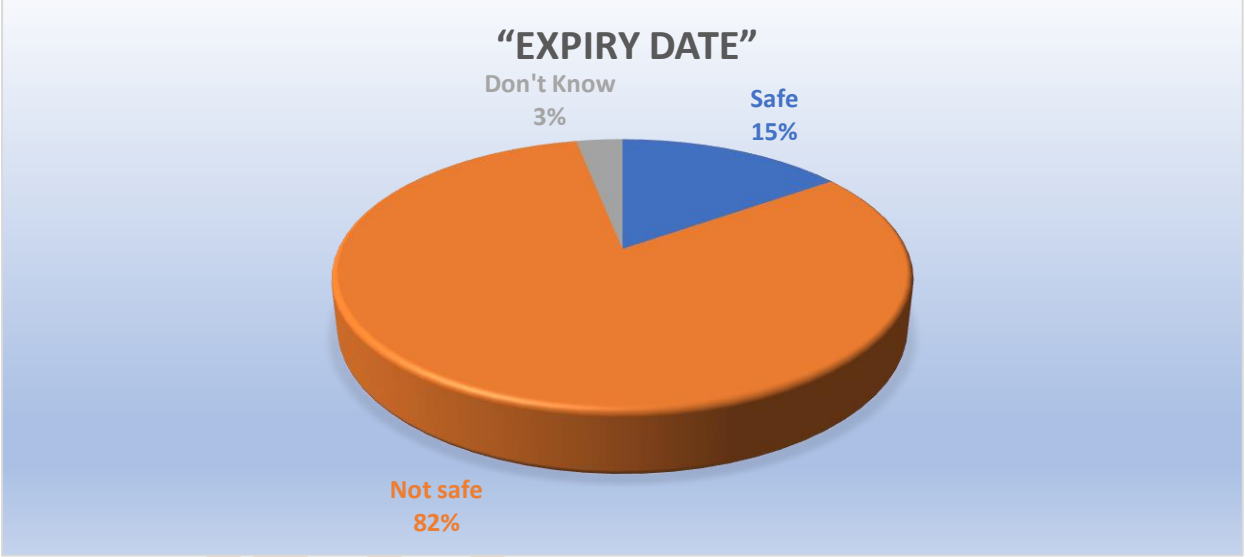
Out of 420 students interviewed for 'Is it safe to consume food after 'Best before date'?', (335) 79.8% participants chose it is safe, (70) 16.7% participants chose it is not safe and (15) 3.6% participants did not know.

Expiry Date Information

Table 28 Expiry Date Information

"Expiry Date"					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Safe	64	15.2	15.2	15.2
	Not safe	343	81.7	81.7	96.9
	Don't Know	13	3.1	3.1	100.0
	Total	420	100.0	100.0	

Figure 28 Expiry Date Information



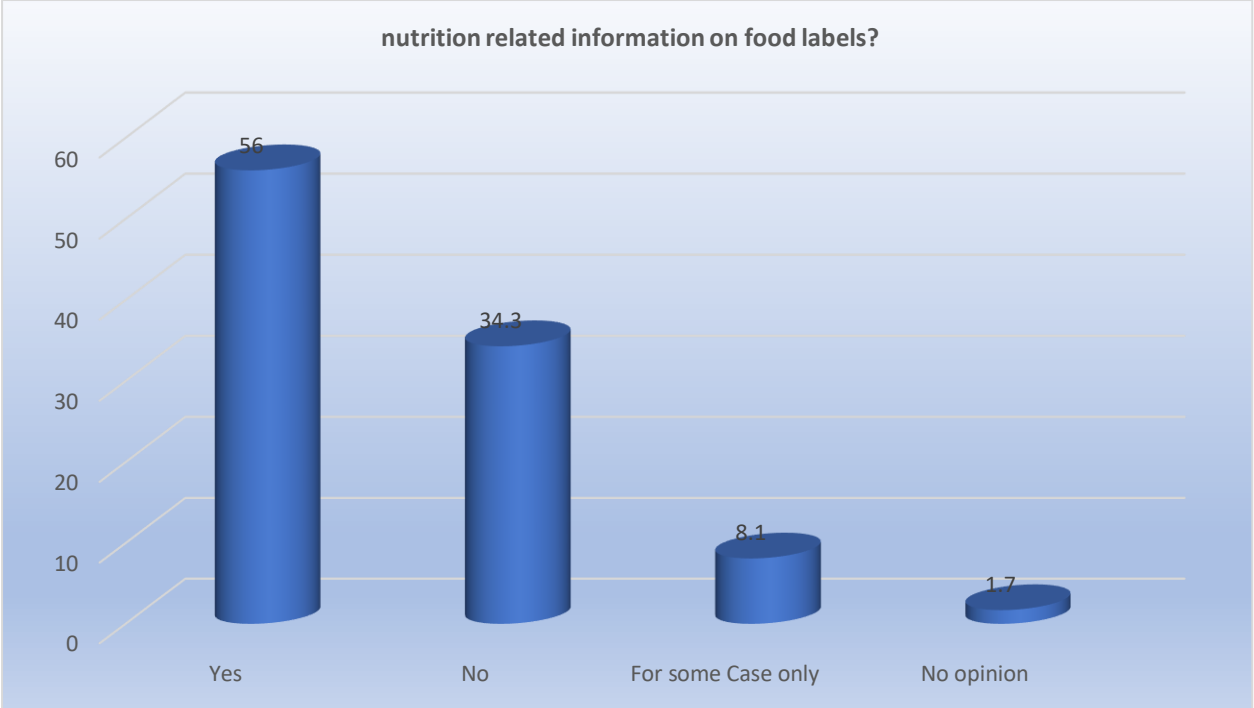
Out of 420 students surveyed, (64) 15.2% participants chose it is safe, (343) 81.7% participants chose it is not safe and (13) 3.1% participants did not know when asked if it was safe to consume food after the expiry date.

Nutrition related information about food labels

Table 29 Nutrition related information about food labels

nutrition related information on food labels?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	235	56.0	56.0	56.0
	No	144	34.3	34.3	90.2
	For some Case only	34	8.1	8.1	98.3
	No opinion	7	1.7	1.7	100.0
	Total	420	100.0	100.0	

Figure 29 Nutrition related information about food labels



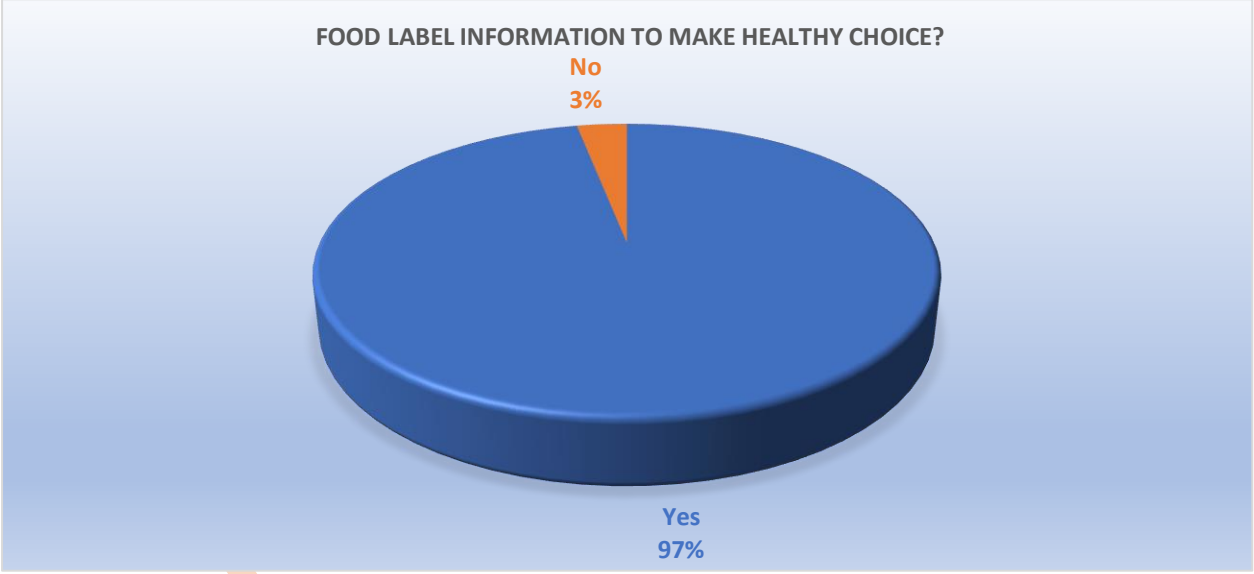
Out of 420 students interviewed and asked if they thought symbols would be better instead of text for nutrition related information on food labels, (235) 56% participants chose YES, (144) 34.3% participants chose NO, (34) 8.1% participants chose FOR SOME CASE ONLY and (7) 1.7% participants had no opinion.

Education about food label information to make healthy choices

Table 30 Education about food label information to make healthy choices

food label information to make healthy choice?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	407	96.9	96.9	96.9
	No	13	3.1	3.1	100.0
	Total	420	100.0	100.0	

Figure 30 Education about food label information to make healthy choices



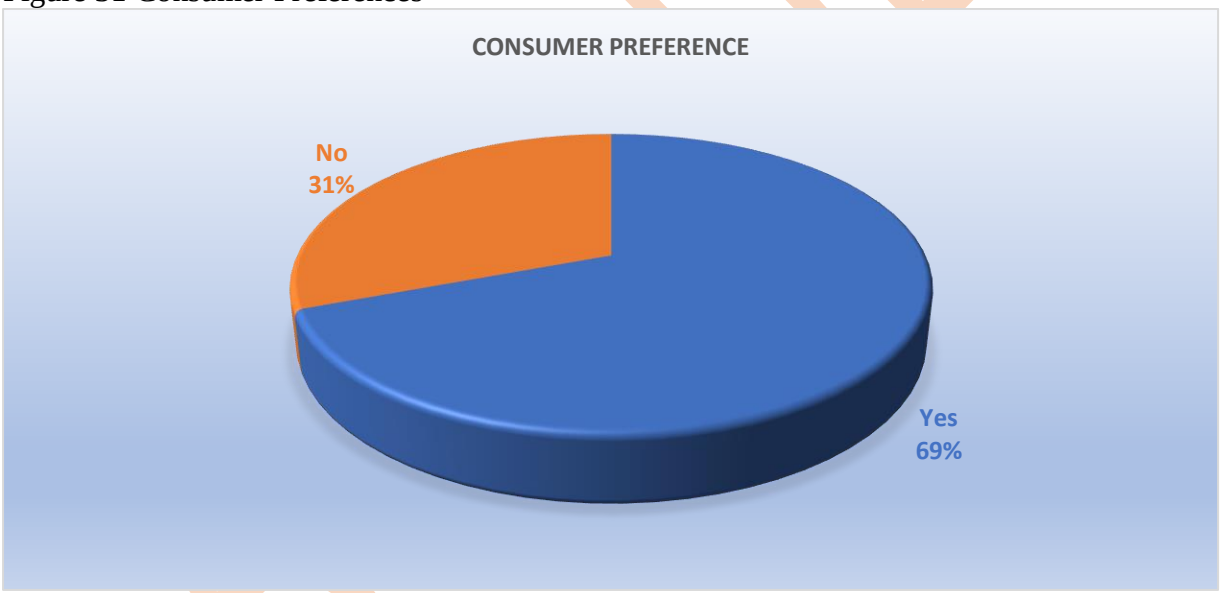
Out of 420 students interviewed, (407) 96.9% participants chose 'Yes' when asked if they would like to learn about food label information to make healthy choices and (13) 3.1% participants chose 'No' as their answer when asked if they would like to learn about food label information to make healthy choices.

Consumer Preferences

Table 31 Consumer Preferences

Consumer preference					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	291	69.3	69.3	69.3
	No	129	30.7	30.7	100.0
	Total	420	100.0	100.0	

Figure 31 Consumer Preferences



Out of 420 students interviewed, (291) 69.3% participants chose 'Yes' when asked if they would buy any food product if it says it gives you a specific health benefit and (129) 30.7% participants chose 'No' as their answer when asked if they would buy any food product if it says it gives you a specific health benefit.

Results:

Table 32

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.926[a]	4	.416
Likelihood Ratio	4.394	4	.355
N of Valid Cases	420		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 1.99.

ISI:

The number of students who can identify and estimate the quality symbol ISI on food products. Students with NO have frequency of 38, percent and valid percent as 9 each and similarly they have 9 as cumulative percent. Students with YES have frequency of 382, percent and valid percent of 91 each and cumulative percent of 100. Frequencies added up are 420 in total, while percent and valid percent is 100 each.

FPO:

The identification and estimation of students for quality symbol FPO on food products. Yes and no two answers will obviously be derived. Students with YES have frequency of 377, percent and valid percent of 89.8 each respectively and 100 as cumulative percent. Students with NO have frequency of 43 with percent and valid percent as 10.2 each and cumulative percent as 10.2 too. All combined, frequencies add up to 420 while percent and valid percent are 100 each.

AGMARK:

we will see the identification and estimation of quality symbol AGMARK by the participating students. Frequency of students with answer NO is 59, with percent, valid percent and cumulative percent as 14 each. In contrast, the students with answer YES have frequency in high numbers of 361 with percent and valid percent remaining at 86 each, while cumulative percent as 100. In total. frequency result is 420 and percent and valid percent is 100.

INTERPRETATION:

There is significant association of the two variables taken student's education qualification and the recognition of the symbols. If P-value is less than los, reject the hypothesis that there is no significant association between the factors/characteristics considered. We infer that there is a significant association between the factors/characteristics considered.

It was found that there is a significant association at 1% level of significance (los) between student's education and their knowledge , as P-Values for all the parameters related to are less than 0.5 and the Pearson Chi-Square test is 3.076 and the likelihood ratio is 3.196. There is a positive association between the educational status of the student and their abilities to recognize the above symbols

To conclude we can say that the student's knowledge has an impact on their opinion and attitude towards the food standardization labels

Table 33

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.483[a]	4	.648
Likelihood Ratio	2.596	4	.627
N of Valid Cases	420		

a. 1 cells (10.0%) have expected count less than 5. The minimum expected count is 4.30.

Father's education:
cumulative percent of educational qualification of fathers. The levels of qualifications considered for are PG, UG, Intermediate, 10th Grade and Illiterate. The frequency of PG qualification of fathers is 75, with percent, valid percent and cumulative percent as 17.9 each. Further, UG qualified fathers have a frequency of 143, while their percent and valid percent 34 each, but cumulative percent as 51.9. Moreover, if intermediate level qualified fathers are considered, their frequency is 92, with percent and valid percent as 21 each. Cumulative percent of this group is 73.8. Likewise, for 10th pass fathers, frequency would be 88 while their percent and valid percent will be 21 each and cumulative percentage.

Mother's Education:

The frequency and percentages of educational qualification levels of mothers of our participants. Like in the case of fathers, all levels of educational qualifications like PG, UG, Intermediate, 10th and Illiterate is considered for comparison among mothers. PG qualified mothers have a frequency of 49, with percent, valid percent and cumulative percent as 11.7 each. UG qualified mothers have a frequency of 99, with percent and valid percent as 23.6 each and cumulative percent as 35.2. Intermediate qualified mothers have frequency of 114, with percent and valid percent as 27.6 each and cumulative frequency as 62.4. Mothers with 10th grade have frequency of116, percent and valid percent of 27.6 each and cumulative percent of 90. Illiterate mothers have frequency of 42, percent and valid percent of 10 each and cumulative percent of 100. In total, all mothers have frequency of 420 and percent, valid percent as 100 each respectively

INTERPRETATION:

There is significant association between the parent's educational status and the student's knowledge, if P-value is less than los, reject the hypothesis that there is no significant association between the factors/characteristics considered. We infer that there is a significant association between the factors/characteristics considered.

It was found that there is a significant association at 1% level of significance (los) between student's education and their knowledge , as P-Values for all the parameters related to are less than 0.5 and the Pearson Chi-Square test is 2.483 and the likelihood ratio is 2.596. There is a positive association between the educational status of the parent and the student's knowledge.

Conclusion:

Overall, students' opinions on food labelling are conflicted. Some people believe it helps them make better decisions, while others believe it is too time-consuming, difficult, and should be simpler to use for kids. When purchasing food products, undergraduate university students may place more weight on taste and price than on nutritional labelling. It can be because of a tight budget, a time crunch, or just a need to refuel and satisfy their appetite. But there wasn't much information available about how to use food labels. This research also suggests that a programme on the value of food labelling and how to use it should be held, emphasising to students that "reading food labels" is just one strategy among many, along with portion management.

Recommendations:

- ❖ Conducting education campaigns on:

1. Importance of right food choices
2. Importance of food labels
3. Health issues caused due to wrong food choices
4. Obesity management
5. Eating disorder awareness

- ❖ Conducting workshops:

6. Raising awareness about food labels
7. Taking steps to improve the quality of education of nutrition students
8. Making it compulsory for packed food companies to print clear & true information on food labels

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