Awareness On Effect Of Food In Habits Present Era Among The South Indian Population

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ABSTRACT: Global markets have increased the plethora of options available to Indian consumers. With the clear shift in consumer tastes and preferences, food companies have also capitalized on the same. The food processing industry forms an important segment of the Indian economy in terms of contribution to GDP, employment and investment, and is a major driver in the country's growth in the near future. The objective of this study is to create awareness in food habits in the present era among the South Indian population. A well structured questionnaire was administered to the participants through an online survey link. The responses were analysed through descriptive statistics using SPSS software. The results depicted that, majority of participants were aware and had knowledge about the effect of food habits in their daily diet. There is a shift from opting to eat at home to opting to eat out. Also interestingly awareness about harmful effects of processed foods was high but the reason for consumption was attributed primarily to ease of purchase. Nutrition education for adolescents and parents is needed to promote healthy eating. Health Authorities should strengthen the monitoring of food intake and its association with overweight/obesity.

Keywords : Balanced diet; Food habits; Health Authorities; Obesity; Online survey;

1. INTRODUCTION:

Early diet in India mainly includes legumes, vegetables, fruits, grains, dairy products and honey. Indian food is heavily influenced by religion, cultural choices and tradition. Indian food habits include both vegetarian and non-vegetarian. Additionally all regions will have main meals or dishes, snacks, light meals, desserts and drinks that are well known in their respective region all over India(Ponnulakshmi *e t al.*, 2019). High socio - economic status (SES) and urban residence was positively associated with intake of high energy food products, foods of animal origin, western style foods and also dairy products (Shi *e t al.*, 2005)**.** Generally a man needs a healthy diet to do any work. A healthy diet provides the body with essential nutrition, fluid, macronutrients, micronutrients, and adequate calories (Lean, 2011)**.** Indian food is totally different from the rest of the world, not only in taste but also in cooking methods. It reflects a

perfect blend with various cultures and ages. When it comes to the late or current generation, night eats and food deliveries, a new report showed that people are turning toward healthier and started consuming plant based foods. Generally, the food is mostly unprocessed which are free from chemical additives and are rich in nutrients. The real foods are loaded with important nutrients, contains low sugar, heart healthy, better for the environment, helps in controlling blood sugar, good for skin, provide more variety, cost less, high in healthy fats, reduce disease risk, contains antioxidant(Rengasamy *e t al.*, 2018)(Rengasamy *e t al.* , 2016)(Jainu, Priya and Mohan, 2018)(M ohan, Veeraraghavan and Jainu, 2015) and promotes dental health and also delicious.

Food poisoning is caused by bacteria, toxins, viruses, parasites and prions. "National institute of health" has reported that roughly 7 million people die due to food poisoning each year, with about 10 times as many suffering from a non-fatal version. Food poisoning is recognised as a disease, since as early as Hippocrates (Hippocrates on acute diseases). Some people have allergies to food that are not problematic to most of the people. About 2% of the adults and 8% of the children have food allergies. Human diet is estimated to cause perhaps around 35% of the cancers in a human epidemiological analysis (Doll and Peto, 1981). The changes in tastes, has engendered the lifestyles, urban living and have significant influences on food demand**.** Changes in marketing systems and occupations, closely linked with increasing gross national product (GNP) per capita and may influence the demand for food (Huang and Bouis, 2004)**.** Some research has shown that most students are not familiar with healthy foods needed for their body in different conditions and need to have nutrition education programs (Robinson-O'Brien *e t al.*, 2009)**.** A study reports that 62.7% students have enough knowledge about nutrition and the remaining lack the knowledge ('A Study on Nutrition Knowledge, Dietary Habits, Health related LifeStyle and Health Condition of College Students in Chuncheon', 2006)**.**

In this present era, processed food has come to the market which has high risk, high sugar and fructose corn syrup which are engineered for over consumption and contains artificial ingredients which are high in refined carbohydrates and low in nutrients and fibre. The importance of proper nutrition as one of the important aspects of lifestyle were emphasised in recent years and the trend towards healthier diets has increased (Margetts *e t al.*, 1998)(Stampfer *e t al.*, 2000). Nutrition education as one of the important practical aspects of nutrition knowledge, plays an important role in raising public awareness and ultimately health of society (Harvey-Berino *e t al.*, 1997)**.** Previous literature on natural products in health and diseases (Ke *e t al.*, 2019)(Ma *e t al.*, 2019)(Chen *e t al.*, 2019)(Gan *e t al.*, 2019) nanomaterials (Wang *e t al.*, 2019)(Li *et al.*, 2020) cancer biology (G *e t al.*, 2018)(Wu *et al.*, 2019)(Menon, V and Gayathri, 2016) motivated me to undertake epidemiological studies on food habits.

This research is needed to determine the role in varying biological responses of diet and food components along with its importance and disease prevention in progression. The aim of this study is to create awareness of the effects of food habits in the present era among the South Indian population.

2. MATERIALS & METHODS:

A cross sectional and a self structured questionnaire containing 18 questions was prepared and circulated to the South Indian population through an online link. This was approved by the scientific review board of Saveetha dental college, Chennai. The sample size of the study is 100 between the age group of 20 - 50 years. The questionnaire included the basic socio economic information such as name, age, gender, occupation, etc. The sampling method used was "Non probability convenient method". The statistics used to analyse the results was descriptive statistics using SPSS software. The results of each output variable are represented through pie charts.

3. RESULTS & DISCUSSION:

Results are collected and the data is analysed. Majority of the participants are aware and have knowledge about the effect of food habits on their daily diet.

42% population age group was between 20 - 30 years, 35% population age group was between 31 -
40 years and 23% population age group was between 41 - 50 years (figure 1). 69% were female participants and 31% were male participants (figure 2).

70% of the population regularly takes 3 meals in a day, 20% of the population eat 2 meals a day and 10% eat 1 meal a day (figure 3). 46% of the population eats snack twice in a day, 35% population eats snack once in a day and 19% population eats snack more than twice in day (figure 4).

41% of the population have never been on a diet, 31% of the population are used to being on a diet, 28% of the population follows a special diet (figure 5). 49% of the population have meat 1-3 days per week, 24% population never eat meat, 18% population have meat 4-5
    days per week, 9% population have meat daily (figure 6). 71% of the population drink milk and 29% of the population do not drink milk (figure 7). 55% of the population have no food allergies, 29% population do not know whether they have food allergies and 16% population have food allergies (figure 8). 72% of the population takes vitamins on a daily basis and 28% of the population does not take vitamins on a daily basis (figure 9). 59% of the population eat desserts sometimes, 28% population eat desserts only on special occasions, 10% population eat desserts always and 3% population never eat desserts (figure 10). 53% of the population eat both sweet and savoury snacks, 23% population eat savoury snacks, 21% population eat sweet snacks and 3% population eat neither of them (figure 11). 41% of the population are super taster, 41% population do not know whether they are a supertaster and 18% population are not super taster (figure 12). 85% of the population finish everything kept on their plate and the 15% population will not finish everything kept on their plate (figure 13). 59% of the population eats neither fast nor slow, 25% population eats fast and 16% population eats slow (figure 14).

52% of the population consider breakfast as their main meal, 38% population consider lunch as their main meal and 10% population consider dinner as their main meal (figure 15). 49% of the population will never skip any of their meals, 39% of the population sometimes skip any meal and 12% of the population skip a meal everyday (figure 16). 73% of the population take vegetables daily on their diet, 20% of the population take vegetables sometimes and 7% population does not take vegetables daily(figure 17).

we have seen the association between gender and number of times participants eats snacks in a day (figure 18), population who follow special diet (figure 19), consumption of milk by the population (figure 20), population opinion about food allergy (figure 21), intake of vitamins on a daily basis among the population (figure 22), population knowledge about super tasting (figure 23), population reporting about finishing everything kept on their plate (figure 24), population opinion about their main meal (figure 25) and consumption of vegetables by the population in their daily diet (figure 26).

Some previous researches have shown that students are slightly aware of nutrition issues and their knowledge and attitude are average (Gates and DeLucia, 1998). But some studies have reported that there is no adequate knowledge about nutritional aspects (Al-Otaibi and Basuny, 2015)(Shukri *e t al.*, 2016). Research showed that, most students eat three meals regularly (Sakamaki *e t al.*, 2005), but a research conducted in Japan showed that, only few students eat three meals per day regularly (Katanoda *e t al.*, 2005). A study showed that the majority of students (83.6%) eat three meals of the day regularly and there was no difference found between men and women (P, Karmakar and Jahan, 2016). In previous researches, the average knowledge of Male students was 57.28% and that of female students was 56.71% which shows that students have average nutritional knowledge (Lee and Lee, 2015). Other previous study has reported that female students achieved better scores than the male students on nutritional knowledge and its attitude (Hendrie, Coveney and Cox, 2008). But a research stated that nutritional knowledge and

attitude are not correlated with gender which replicates our study (Guldan *e t al.*, 1993)**.** Researchers have reported that 81% of the subjects agree or completely agree with the necessity of eating breakfast (Wong *et al.*, 1999)**,** which is the similar result of our study. On the other hand, some researches have shown that most students are not familiar with healthy foods needed for their body in different conditions (Hooper, 2011)(O'Dea, 2005).

Nowadays, especially in developed countries, one of the most important health problems is stress. The limitations of our study is, the sample size is less and the inclusion of criteria can be more. This research is needed to determine the role in varying biological responses on the diet and food components and its importance and disease prevention in progression.

4. CONCLUSION:

The South Indian population has some adequate knowledge about their food habits and diet. Eating well can help ward off numerous diseases and health complications, as well as help maintain a healthy body weight, provide energy, allow better sleep, and improve brain function. Proper diet helps in maintaining the body strong that helps to fight against the virus and other types of diseases. A healthy diet contains low saturated fat that prevents the body from many cancers. Most of the South Indian food stuffs have many nutritional values that help in maintaining proper health. Therefore holding nutrition workshops and courses in university and even including them in the curriculum can enhance their attitudes and nutrition behaviours and have a positive effect on them.

CONFLICT OF INTEREST:
The author declares that there was no conflict of interest in the present study.

AUTHOR CONTRIBUTION:
M. Laksita: Literature search, data collection, analysis.
V. Vishnu priya: Data verification, manuscript drafting.
A. Jothi priya: Data verification, manuscript drafting.
R. Gayathri: Data analysis, manuscript drafting.

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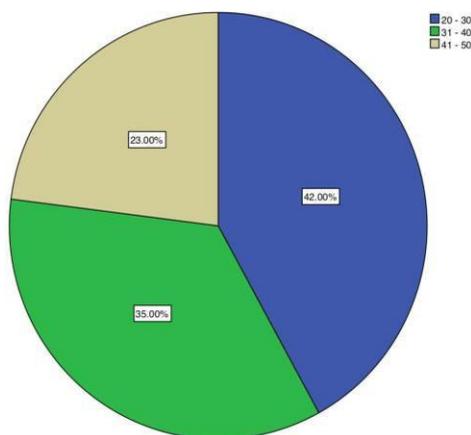
Figure 1: Pie chart showing the percentage distribution of age of the participants. 42% were between 20-30 years (blue), 35% were between 31-40 years (green), 23% were between 41-50 years (beige). Majority of the participants' age group were between 20 - 30 years.
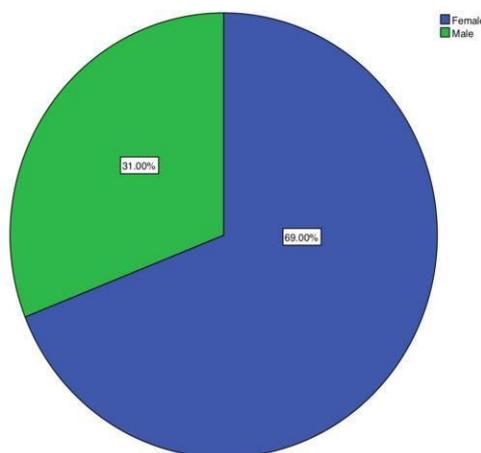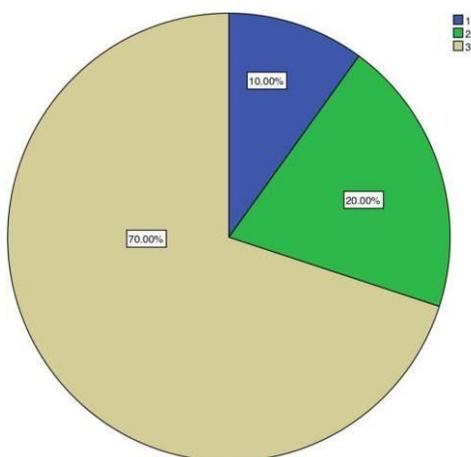

Figure 2: Pie chart showing the percentage distribution of gender of the participants. 69% were Female (blue) and 31% were male (green). Majority of the participants were female.

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Figure 3: Pie chart showing percentage distribution of responses on frequency of meals that the participants eat in a day. 70% (beige) responded that they eat three meals, 20% (green) responded that they eat two meals and 10% (blue) responded that they eat only one meal. Higher number of participants has responded that they eat three meals a day (70%).
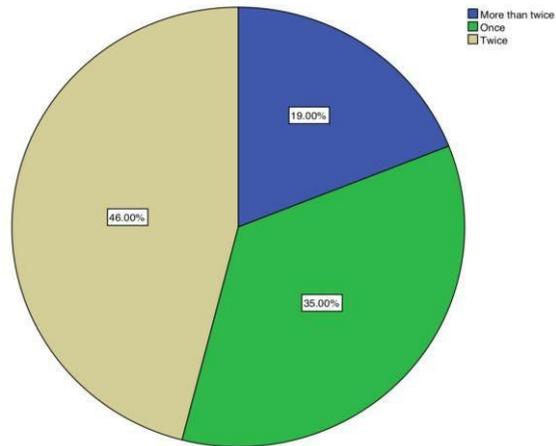
Figure 4: Pie chart showing percentage distribution of responses on frequency that the participants eat snacks in a day. 35% (green) responded once. 46% (beige) responded twice and 19% (blue) responded more than twice. Higher number of participants eat snacks twice a day (46%).
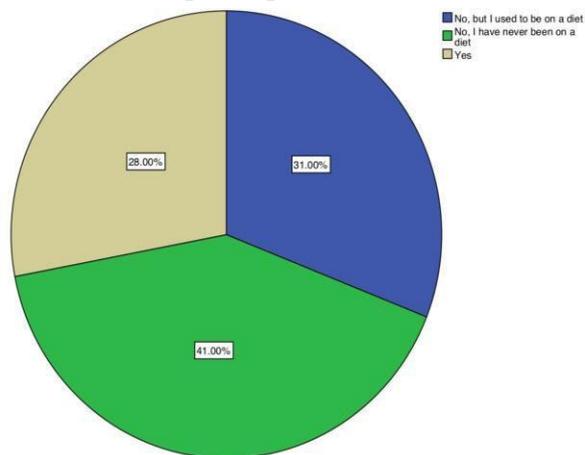
Figure 5: Pie chart showing percentage distribution of responses on diet plan of the participants. 28% (beige) responded yes. 31% (blue) responded that they used to be on a diet and 41% (green) responded that they have never followed any diet. Higher number of participants do not follow any diet (41%).
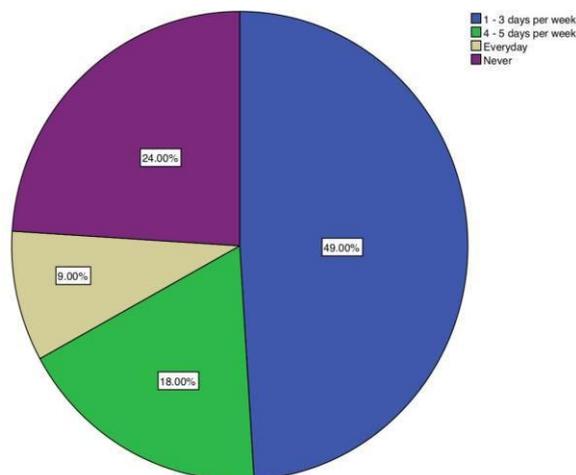
Figure 6: Pie chart showing percentage distribution of responses on number of times the participants has meat per week. 9% (beige) responded everyday. 18% (green) responded that they eat between 4-5 days, 49%

(blue) responded that they eat between 1-3 days and 24% (purple) responded that they never eat meat. Higher number of participants eat meat 1 - 3 days per week (49%).
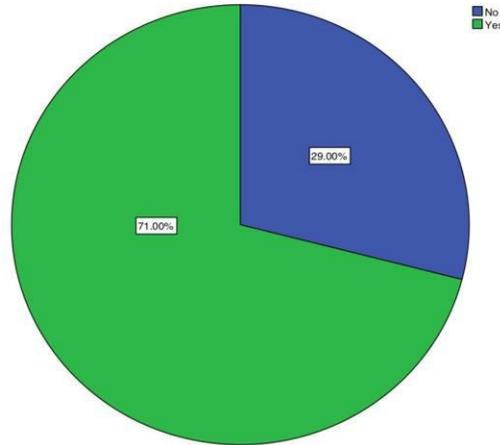
Figure 7: Pie chart showing percentage distribution of responses on consumption of milk. 71% (green) responded yes and 29% (blue) responded no. Higher number of participants drink milk (71%).
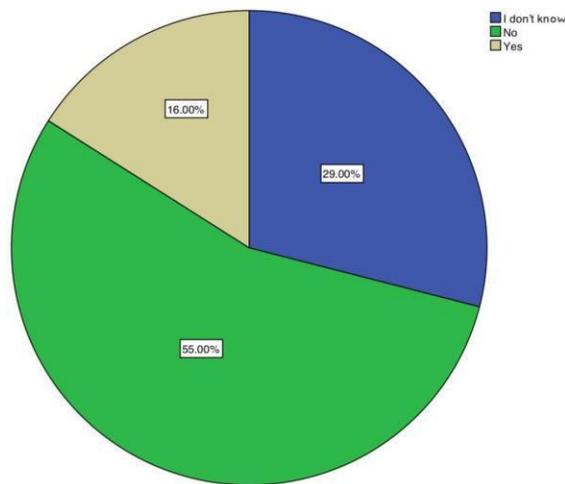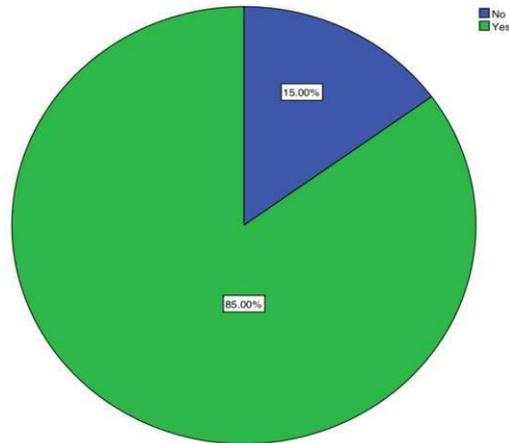

Figure 8: Pie chart showing percentage distribution of responses on opinion about food allergy. 16% (beige) responded yes, 55% (green) responded no and 29% (blue) responded that they don't know. Higher number of participants do not have food allergy (55%).
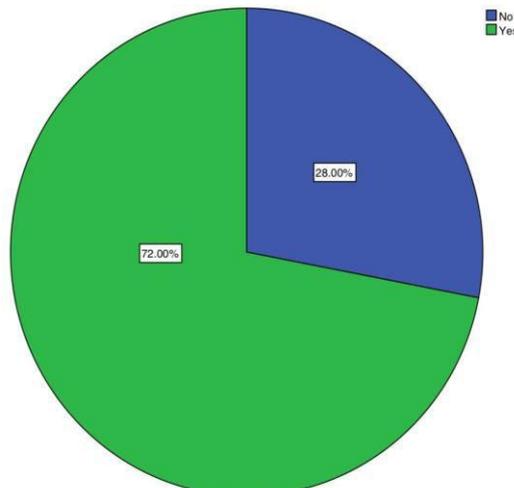
Figure 9: Pie chart showing percentage distribution of responses on intake of vitamins on a daily basis. 72% (green) responded yes and 28% (blue) responded no. Higher number of participants responded that they take

vitamins daily (72%).
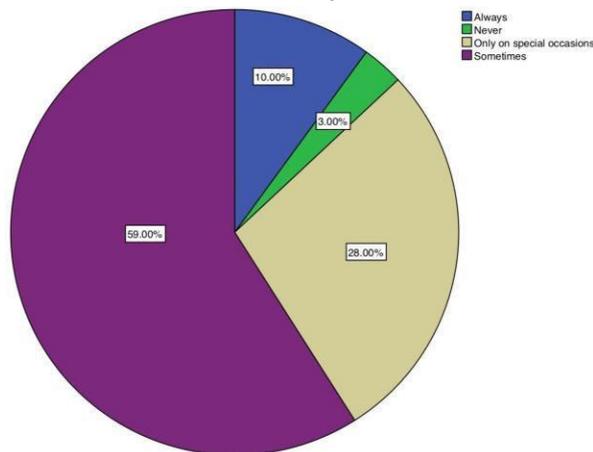
Figure 10: Pie chart showing percentage distribution of responses on intake of desserts along with their diet. 10% (blue) responded always, 59% (purple) responded that they eat only sometimes, 28% (beige) responded that they eat only on special occasions and 3% (green) responded that they never eat desserts. Higher number of participants take desserts sometimes (59%).
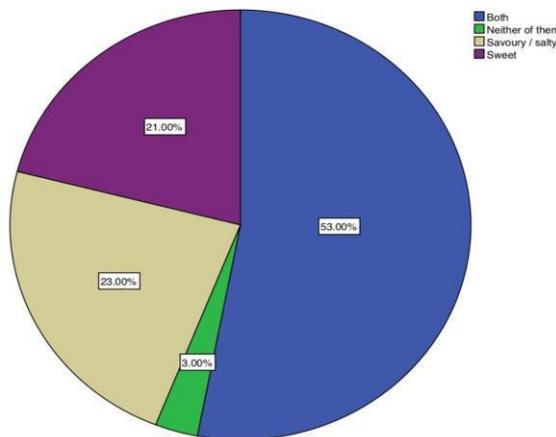
Figure 11: Pie chart showing percentage distribution of responses on preference in type of snacks. 21% (purple) responded that they like sweet, 23% (beige) responded that they like salty/savoury snacks, 53% (blue) responded that they like both and 3% (green) responded with neither of them. Higher number of participants eat both types of snacks (53%).
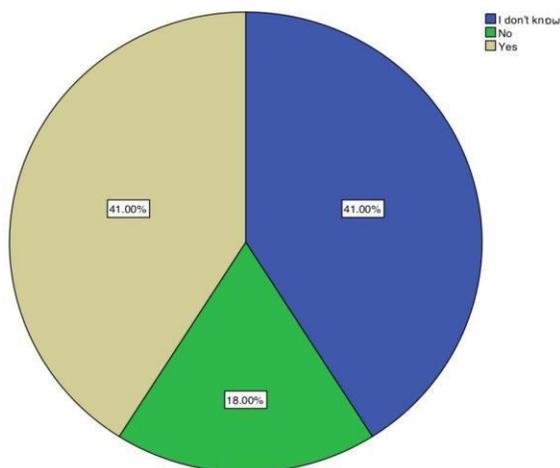
Figure 12: Pie chart showing percentage distribution of responses on knowledge about super tasting of foods.

41% (beige) responded yes, 18% (green) responded no and 41% (blue) responded that they don't know.

Figure 13: Pie chart showing percentage distribution of responses on completing their food on time. 85% (green) responded yes and 15% (blue) responded no. Higher number of participants reported that they finish everything kept on their plate (85%).
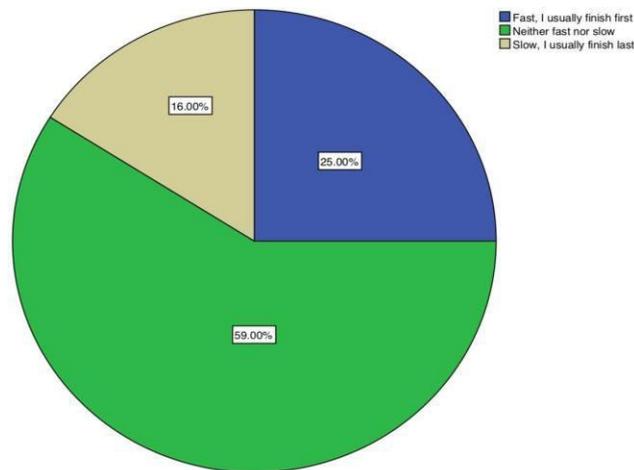
Figure 14: Pie chart showing percentage distribution of responses on eating pace of foodstuffs. 25% (blue) responded that they eat fast, 59% (green) responded that they neither eat fast nor slow and 16% (beige) responded that they eat slow. Higher number of participants neither eat slow or fast (59%).
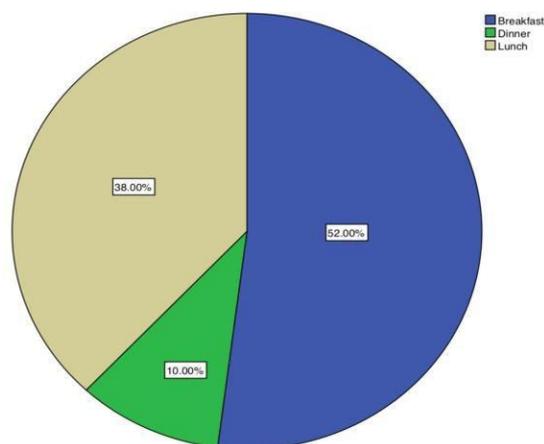
Figure 15: Pie chart showing percentage distribution of responses on opinion about their main meal. 52%

(blue) responded to breakfast, 38% (beige) responded to lunch and 10% (green) responded to dinner. Higher number of participants reported that breakfast is their main meal (52%).
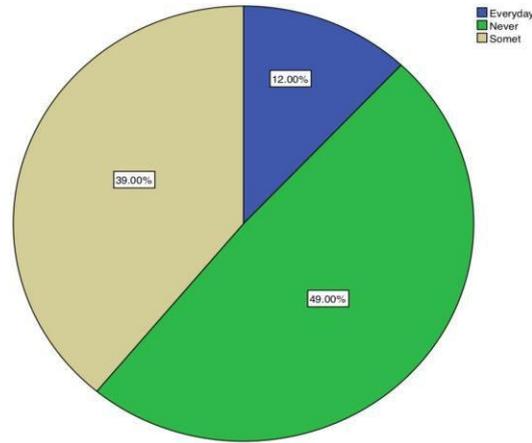
Figure 16: Pie chart showing percentage distribution of responses on avoiding meals per day. 12% (blue) responded everyday, 39% (beige) responded sometimes and 49% (green) responded never. Higher number of participants reported that they never skip any meal (49%).
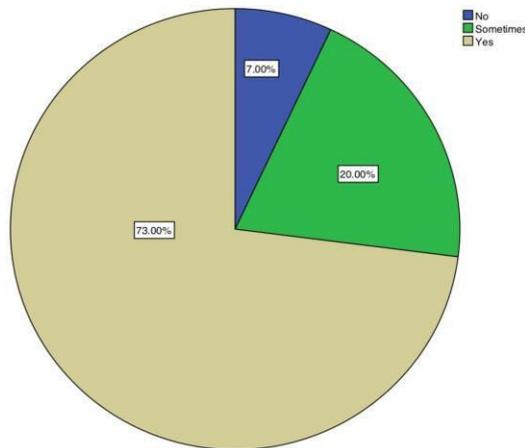

Figure 17: Pie chart showing percentage distribution of responses on consuming vegetables in their daily diet. 73% (beige) responded yes, 20% (green) responded sometimes and 7% (blue) responded no. Higher number of participants reported that they take vegetables in their daily diet (73%).
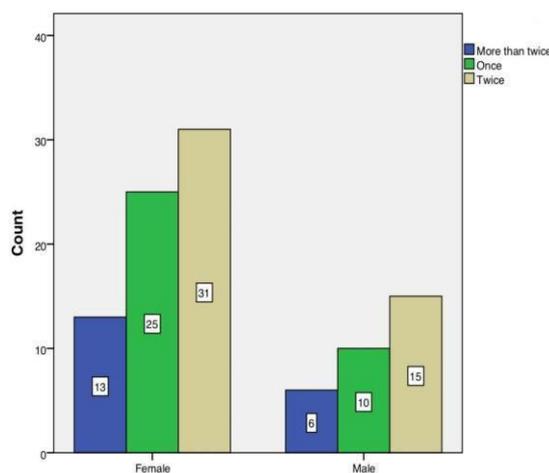
Figure 18: Bar graph showing the association between gender and responses on number of times the population eats snacks in a day. X axis represents gender of participants and Y axis represents number of participants responded. Blue colour represents participant's who eat snacks more than twice, green colour represents participant's who eat snacks once and beige colour represents participants who eat snacks twice. However association between gender and number of times the population eats snacks in a day is statistically not significant. Chi square analysis shows p = 0.925 (p>0.05 which is statistically not significant).
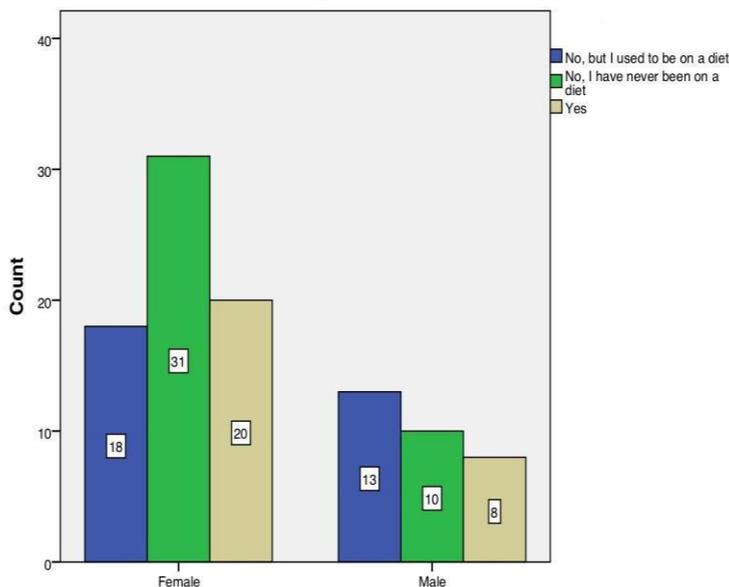
Figure 19: Bar graph representing association between gender and responses on following a special diet. X axis represents gender of participants and Y axis represents number of participants responded. Blue colour represents that population who follows a normal diet, green colour represents the population who have never followed any diet and beige colour represents the population who follows a special diet. However association between gender and population who follow a special diet is statistically not significant. Chi square analysis shows p = 0.266 (p>0.05 which is statistically not significant).
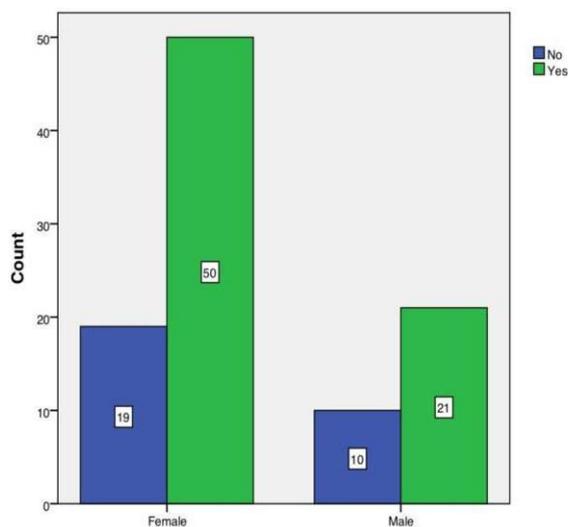

Figure 20: Bar graph representing association between gender and responses on consumption of milk by the population. X axis represents gender of participants and Y axis represents number of participants responded. Green colour represents participants who consume milk and blue colour represents participants who do not consume milk. However the association between gender and consumption of milk by the population is

statistically not significant. Chi square analysis shows p = 0.630 (p>0.05 which is statistically not significant).
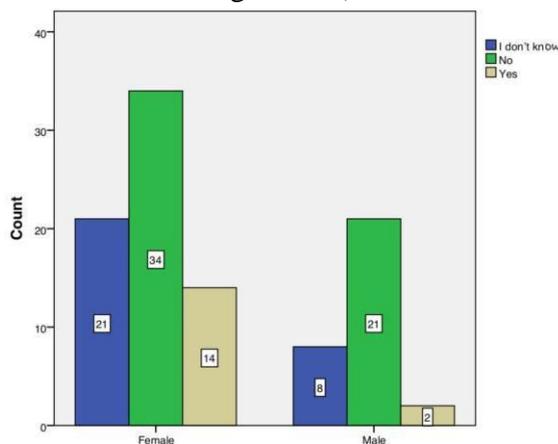

Figure 21: Bar graph representing association between gender and responses on opinion about food allergy. X axis represents gender of participants and Y axis represents number of participants responded. Blue colour represents who don't know whether they have food allergy, green colour represents participant's who don't have food allergy and beige colour represents participants who have food allergy. However association between gender and participants' opinion about food allergy is statistically not significant. Chi square analysis showing p = 0.132 (p>0.05 which is statistically not significant).
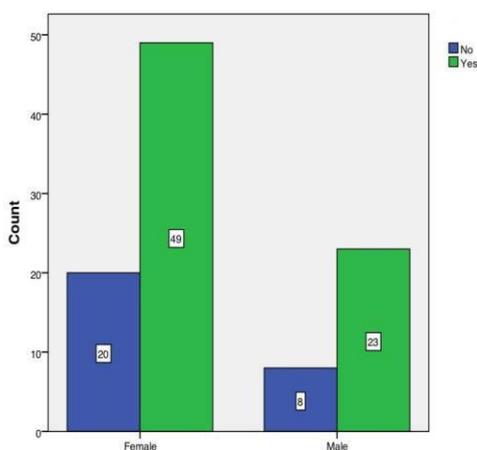

Figure 22: Bar graph representing association between gender and responses on intake of vitamins on a daily basis among the population. X axis represents gender of participants and Y axis represents number of participants responded. Blue colour represents participants who do not intake vitamins and green colour represents participants who intake vitamins. However association between gender and intake of vitamins by the participants on a daily basis is statistically not significant. Chi square analysis showing p = 0.743 (p>0.05 which is statistically not significant).
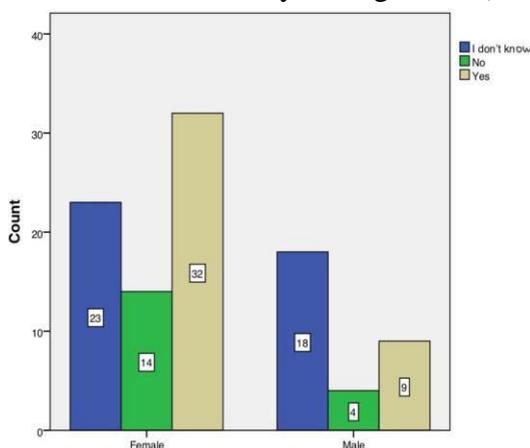
Figure 23: Bar graph representing association between gender and responses on super tasting of food stuffs
. X axis represents gender of participants and Y axis represents number of participants responded. Beige
colour represents participants who are good at super tasting, green colour represents participants who are not
good at super tasting and blue colour represents participants who don't know about their super tasting.
However association between gender and population knowledge about supertasting is statistically not
significant. Chi square analysis showing p = 0.067 (p>0.05 which is statistically not significant).
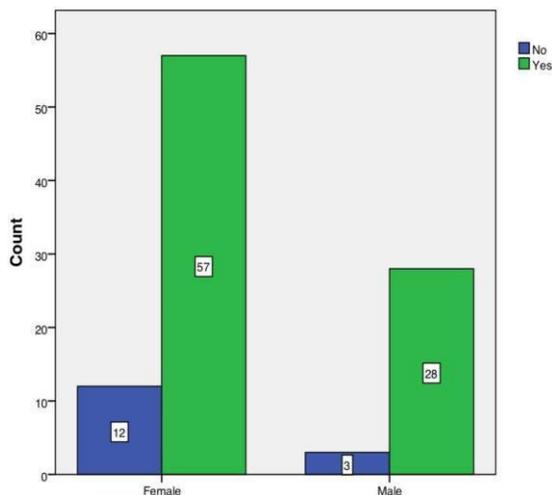

Figure 24: Bar graph representing association between gender and responses on completing the entire food.
X axis represents gender of participants and Y axis represents number of participants responded. Green
colour represents participants who complete the entire food and blue colour represents participants who do
not complete the entire food. However association between gender and participants reporting about
completing the entire food is statistically not significant. Chi square analysis showing p = 0.318 (p>0.05
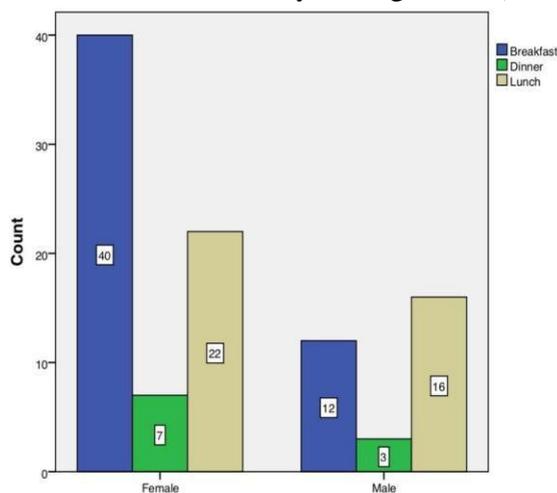which is statistically not significant).

Figure 25: Bar graph representing association between gender and responses on opinion about their main
meal. X axis represents gender of participants and Y axis represents number of participants responded. Blue
colour represents breakfast as participants main meal, green colour represents dinner as participants main
meal and beige colour represents lunch as participants main meal. However association between gender and
participants' opinion about their main meal is statistically not significant. Chi square analysis showing p =
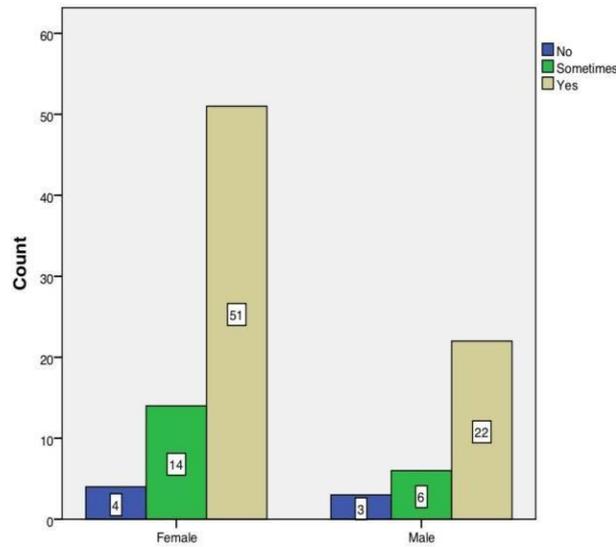0.156 (p>0.05 which is statistically not significant).

Figure 26: Bar graph representing association between gender and responses on consumption of vegetables in their daily diet. X axis represents gender of participants and Y axis represents number of participants responded. Beige Colour represents that participants consume vegetables daily, blue colour represents participants who do not consume vegetables daily and green colour represents participants who consume vegetables sometimes. However association between gender and consumption of vegetables by the participants on a daily basis is statistically not significant. Chi square analysis showing p = 0.781 (p>0.05 which is statistically not significant).