RESEARCH ARTICLE

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Knowledge and Awareness Regarding Dietary Measures Followed During Covid - 19 Among Middle and High School Children from A Private School in Chennai

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ABSTRACT

The need of consuming healthy foods which improve the immune system, which is an imperative habit adapted by most of the nations with the spread of the infection COVID-19. While there are no specific foods that can help protect the person from the virus, a nutritious diet can boost your immune system or help you fight off symptoms. The aim of the present study is to analyse the knowledge and awareness on the dietary measures followed during COVID -19 among children. A cross sectional survey was conducted among the children of age group 10-18 years about the dietary measures followed by them during COVID - 19. The questionnaire was distributed through the google forms website to around 100 children. The data was collected and analysed using SPSS Software and Perason's Chi square test was also done. According to the results, 60.2% of the participants are following a healthy diet during this lockdown period and 39.8% are not following. The chi square test was done associating the gender with the dietary patterns followed during the Covid 19 pandemic.This study concludes that the children are aware and having knowledge on the dietary measures to be followed during COVID - 19.

INTRODUCTION

Eating healthy food and having a healthy diet is not about strict limitations, staying unrealistic thin, or depriving yourself of the food you love. Majority of the population has a need to understand the nutrition values of food and its role in maintaining immunity, lowering the risk of long term diseases or infections, [1]. Highly balanced nutrition is very much essential to regulate the normal functions of the body in certain times it is mandatory to the body immunity to resist during any illness. These days there are particular illnesses which can be due to limited availability of fresh food items, which are mostly available as canned foods which are plenty

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in saturated fats, sugar content and salt. Nonetheless, even with few and limited food items, one can continue eating a diet that supports good health. For good and optimal health, it is also important to remain physically active.The oral hygiene among pregnant women plays a major role in them because, usually it all depends on the level of hygiene of a mother so that the baby is protected inside the womb. Because of the rapid growth rate, energy and nutrient requirement in infancy and early childhood are higher than later in life[2]. In order to have a proper immune system, or any kind of good health conditions, a proper and healthy diet is to be followed. Many studies show that it is difficult for many consumers to understand and use nutrition labelling for food stuff. Regarding the dietary patterns, both the positive and negative trends are observed from national food balance sheets and food consumption surveys [3], and these days due to the corona pandemic, the lifestyle of the people have changed a lot. The health issues of the aged people have been increasing. The main way to prevent the corona attack is to have a proper immune system and a healthy body and immune system. Researches suggest that "healthy food" choices such as eating food, fruits and vegetables have not only physical but also mentally health benefits and might also be a long term investment in future well being [4]. Many researchers have done investigations on the dietary habits with individuals emotional, stress levels, which shows a substantial increase in the consumption of unhealthy foods or foods with high sugar content and fried foods, this has been found more in case of children. Previously our team had conducted numerous clinical trials and lab studies and in-vitro studies [5–20] over the past 5 years we have shifted the focus to this epidemiological survey. The aim of the present study is to know and analyse whether the children are aware about the dietary measures to be followed during COVID- 19.

MATERIALS AND METHODS

Survey Design

A cross sectional online survey was designed based on previously published articles related to influenza and Flu surveys [21]. The primary reasoning was to measure the knowledge about "the flu", COVID-19, attitudes towards risk, susceptibility, immune boosting food, supplements etc,. COVID 19 infection prevention measures included hand-washing technique, covering of cough and sneezes, vaccination, and proximity to other individuals.

As we were unable to find a survey for high school grade students including these topics, individual questions were created to include everything related to the pandemic and diet regimens and were unified by theme. A qualitative pilot survey was conducted among high school students prior to survey administration to further scale the appropriateness of the questions. The additional demographic details like gender was included.

The study included 100 high school students in chennai. The sample size was chosen based on the strength of the students population of the school who are in Middle and Higher grades with approximately 160 students per grade out of which only 100 students willingly responded to the survey and the incomplete forms were excluded from the study. This study was approved by the Institutional Board Research Committee.

Study Subjects

The study included 100 high school students in the age group between 10 to 18 years from a private school in Chennai.

Eligibility criteria included enrollment of all study participants in Middle and High School grades, between 10 and 18 years of age. We informed parents of the study through mail and telephone contact. The goal of our communication was to give the complete information and its requirements about the study and also provide the students with an opportunity to decline participation.

Survey Instrument

Surveys were administered during May 2020, using "GOOGLE FORMS" a secure, web-based application for online surveys and databases. At the beginning of the survey, all students were asked to login to the database with their existing Mail ID. All students, but those whose guardians declined, were coordinated to the overview consent page, and the students giving consent got to the study. The number of questions distributed was 12. The close ended and yes or no type of questions were asked. Surveys took approximately 10–15 minutes to complete, with higher grade levels requiring less time.

Statistical Analysis

The data from the google forms is analysed and then put into the excel sheet and then tabulation of the data finally and the question comparison is done. The representation of the data is through the pie chart or bar graph. The statistical software IBM SPSS V22 was used. The statistical test used was the student T test. Types of analytics used were descriptive analysis. The independent variables of the present study is the gender and educational qualification. Dependent variables are awareness, interaction and knowledge.

RESULTS AND DISCUSSION

The survey was conducted among high school children within the age groups of 10-18 years. The survey was responded by 82.3% males and 17,7%

of females. Majority of the children are having the knowledge on the dietary measures to be followed In the present study, 66% of the participants replied that they have a proper amount of breakfast during this lockdown and 34% replied as they don't [FIGURE 1]. 60.2% of the participants are following a particular diet during this lockdown and 39.8 % are not following [FIGURE 2]. 28.2% of the participants replied that a proper and balanced nutrition requirement is an advantage of having a healthy diet, 21.4% replied as it boosts energy and makes us active , 31.1% replied as it makes us look slim and fit and 19.4% replied as all of the above [FIGURE 3]. 61.8% of the participants know that having a healthy diet boosts energy and gives strength and 38.2% don't know [FIGURE 4]. 57.4% of the participants are eating a lot of junk foods during this lockdown period and 42.6% are not eating junk food during this lockdown period [FIGURE 5]. 26.6% of the participants feel that they look the same since this lockdown period, 43.7% of the participants feel that they have put on weight and 30.1% of the participants feel that they have reduced weight [FIGURE 6]. 37.9% of the participants think that maintaining a proper diet would prevent corona. 40.8% of the participants think that it does not help prevent corona and 21.4% of the participants don't know about it [FIGURE 7]. 51.5% of the participants know that along with maintaining a healthy diet, ample amounts of water is also required by the body to keep our body fresh and 47.6% of the participants don't know that water is needed to keep the body fresh [FIGURE 8].

When the participants were asked about whether they are having a proper amount of breakfast at the right time during this lockdown period, in the present study, 66% of the participants opted as yes and 34% of the participants opted as no. There was a similar finding related to the same topic done by Jennifer M et al, 2019 [22], where the participants were 62.4% on the proper amount of breakfast during lockdown. The opposing finding was done by burnier et al. 2017 [23]. Where the participant percentage was 66.4% for having a proper amount of breakfast during lockdown.60.2% of the participants are following a particular diet during this lockdown and 39.8 % are not following and the P value was 0.082, which was found to be statistically insignificant [FIGURE 9]. When the participants were asked about the advantages of having a healthy diet, in the present study,, 28.2% of the participants opted as proper and balanced nutrition requirement ,21.4% of the participants opted as boosts energy and makes us active ,31.1% of the participants opted as makes us look slim and healthy, 19.4% of the participants opted as all of the above and the P value is 0.067 - which is statistically not significant[FIGURE 10]. There was a similar

study done by c Jason et al, 2018 [24], where the participants were 38.2% opted for makes us look healthy and looks slim. Opposing study was done by Juan Juan et al, 2015 [25], where the participants were 33% opted to make them look slim and healthy. When the participants were asked whether they are eating a lot of junk food during this lockdown period, in the present study, 57.4% of the participants opted as yes and 42.6% of the participants opted as no. There was a similar study done by c Jason et al , 2018 , where the participants were 60.3% opted for yes as they are eating junk food during the lockdown period. There are no articles with opposing findings.

When the participants were asked how they feel about themselves during this lockdown period, in the present study, 43.7% of the participants opted as, I have put on weight, 30% of the participants opred as, I have reduced my weight and a p value was 0.056 which was found to be statistically not significant [FIGURE 11]. Opposing findings found out which was done by Jäger etal, 2014 [26], participants were 23.5% increase in weight. The cited article yields different results and these factors affected the present result with low population and education.51.5% of the participants know that along with maintaining a healthy diet, ample amounts of water is also required by the body to keep our body fresh and 47.6% of the participants don't know that water is needed to keep the body fresh and the P value was 0.335 which was found to be statistically not significant [FIGURE12].

When the participants were asked whether maintaining a proper diet would prevent crona, in the present study,40.8% of the participants opted yes and 37.9% of the participants opted no and the P value was 0.112 which was found to be statistically not significant [Figure 13]. The similar finding was done by Lawrence E etal, 2020,, where the participants response was 52.9% yes, agreed it can prevent corona. There are no previous articles with opposing findings. The present research interest has origins from previous studies, where the investigators involved in studies which were done based on Surveys ([27], [28], [29], [30]) clinical reports, interventional studies ([31], [32], [33],[34]) and systematic reviews ([35]), [36], [37], [38], [39], [28], [40])

There are certains limitations of present study as the population involved and the sample size limited to 100. To overcome this limitation, more population types can be included from various regions as well.

FUTURE SCOPE

The study can be expanded to more number of participants making them aware about the dietary

measures to be followed during the COVID- 19 pandemic.

CONCLUSION

The study concludes that most of the participants have good awareness regarding the dietary measures being followed during COVID - 19, which helps in increasing the potential to resist the infection. This survey can be useful in understanding the diet changes or habits that evolved during this Pandemic and can be helpful in promotional interventions

AUTHOR CONTRIBUTIONS

Author 1 (Akifa begum), carried out the study by collecting data and drafted the manuscript after performing the necessary statistical analysis. Author 2 (Dr. L. Keerthi Sasanka) aided in conception of the topic, has participated in the study design, statistical analysis and has supervised in preparation of the manuscript. Author 3 (Dr. Sridevi) has participated in the study design and has coordinated in developing the manuscript. All the authors have discussed the results among themselves and contributed to the final manuscript.

ACKNOWLEDGEMENT

CONFLICTS OF INTEREST

None declared

FUNDING

Ethical Clearance

It is taken from "Saveetha Institute Human Ethical Committee" (Ethical Approval Number-SDC/SIHEC/2020/DIASDATA/0619-0320)

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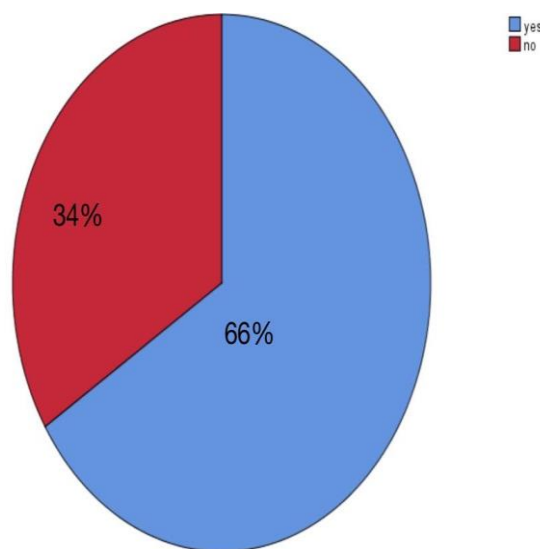
GRAPHS

Figure 1: This pie chart represents the percentage distribution of responses regarding the proper and healthy intake of breakfast during this lockdown period. Blue color represents yes and red colour represents no. Majority of the participants (66%), had a proper and healthy intake of breakfast during the lockdown period.
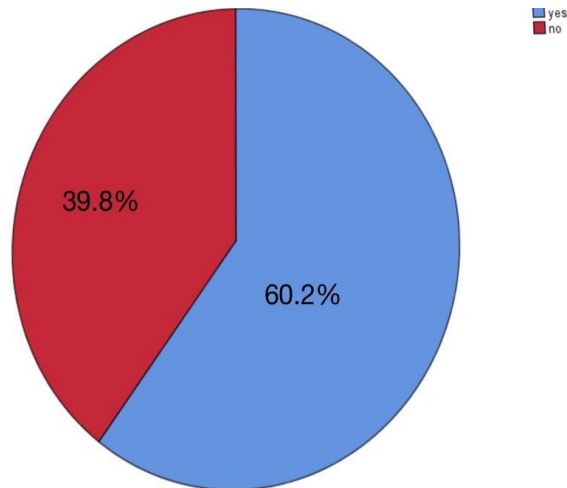
Figure 2: This pie chart represents the percentage distribution of study participants, based on their response to a healthy diet followed during the lockdown period. Blue color represents yes and red colour represents no. Majority of the participants (60.2%), said they followed a overall healthy diet during the lockdown period.
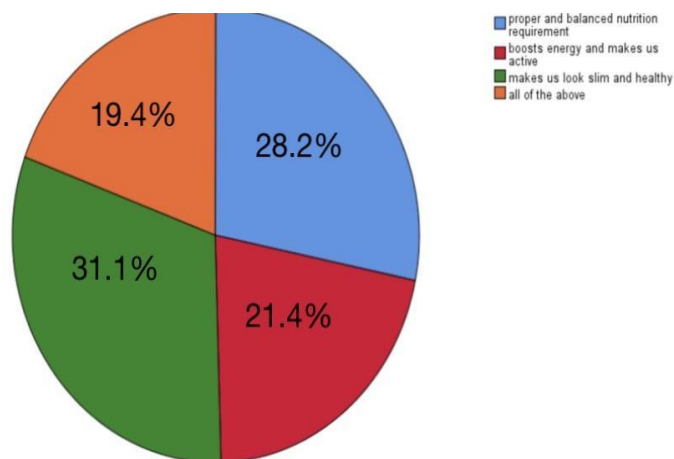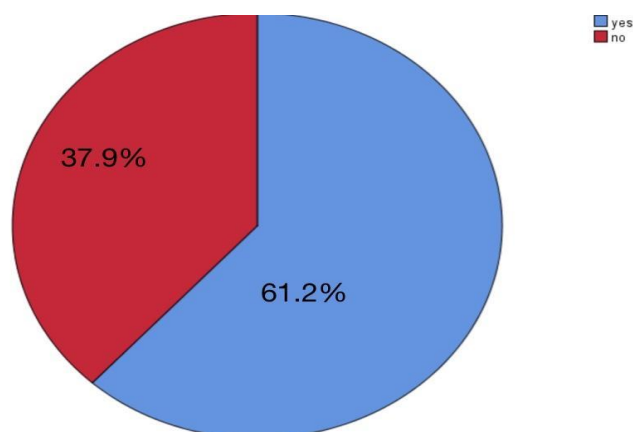

Figure 3: This pie chart represents the percentage distribution of study participants based on their response to advantages of having a healthy diet. Blue color represents proper and balanced nutrition requirements and red colour boosts energy and makes us active, green colour represents makes us look slim and healthy and orange colour represents all of the above. Majority of the participants (31.1%), had good knowledge on the advantages of having a healthy diet.

Figure 4: This pie chart represents the percentage distribution of study participants based on their response on the awareness that a healthy diet helps to boost energy and gives strength. Blue color represents yes and red colour represents no. Majority of the participants (61.2%), were aware that a healthy diet boosts
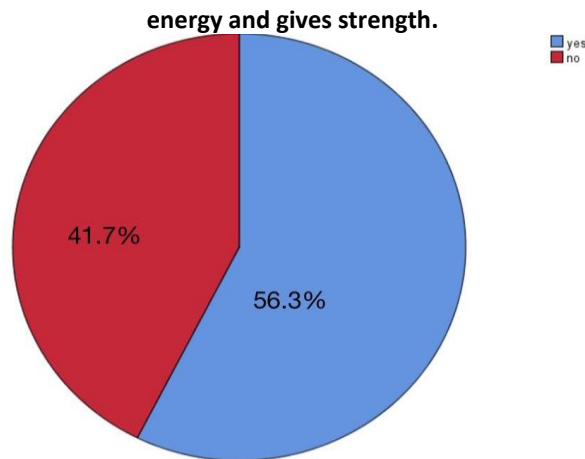
energy and gives strength.

Figure 5: This pie chart represents the percentage distribution of study participants based on their response to consumption of junk food in the lockdown period. Blue color represents yes and red colour represents no. Majority of the participants (56.3%), had consumption of junk food in the lockdown period.
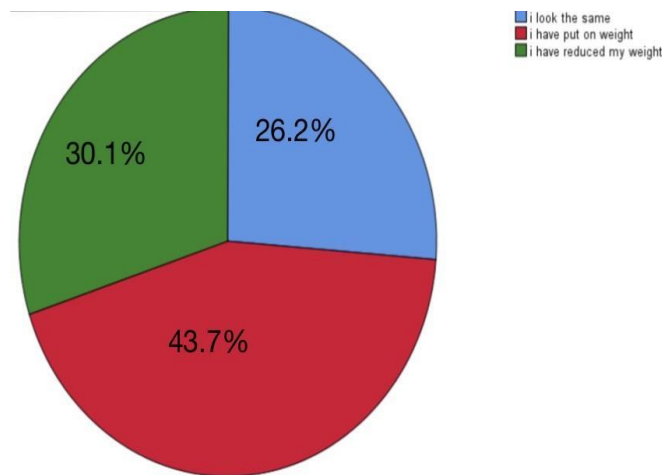

Figure 6: This pie chart represents the percentage distribution of study participants based on their response about their feelings during this lockdown period. Blue color represents i look the same and red colour represents i have put on weight and green colour represents i have reduced my weight. Majority of the participants (43.7%), had a feeling that they have put on weight during the lockdown period.
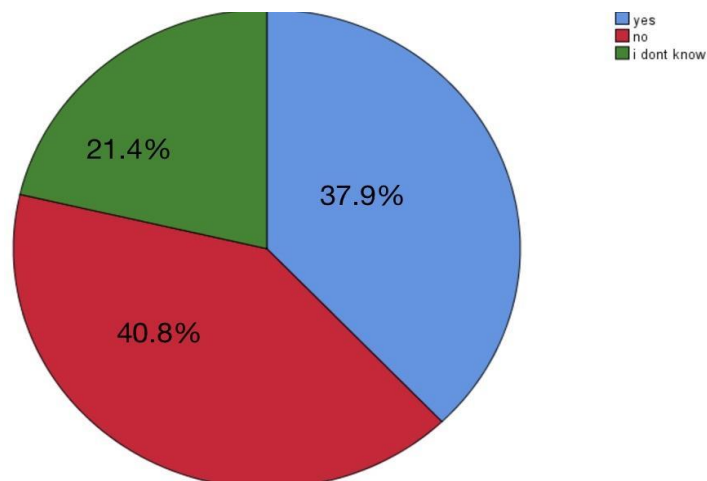

Figure 7: This pie chart represents the percentage distribution of study participants based on their response on whether maintaining a proper diet would prevent corona infection. Blue color represents yes, red colour represents no and green colour represents i don't know. Majority of the participants (40.8%), have an opinion that maintaining a proper diet would not prevent corona.
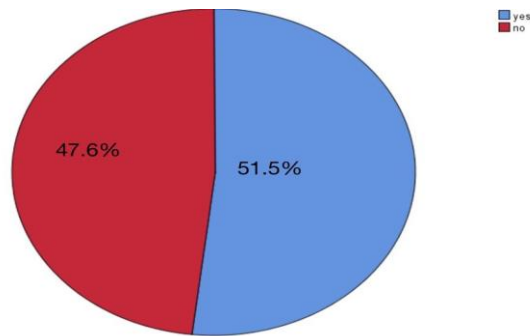
Figure 8: This pie chart represents the percentage distribution of study participants based on their response on awareness that along with maintaining a healthy diet , drinking ample amounts of water also helps in maintaining a good and clean body. Blue color represents yes and red colour represents no. Majority of the participants (51.5%), were aware that drinking ample amounts of water helps in maintaining a good and clean body.
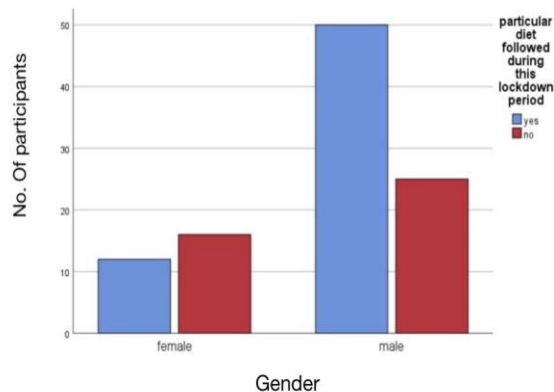

Figure 9: Bar graph showing the association of responses based on gender with the awareness on following a particular diet during this lockdown period. X-axis represents the gender and Y-axis represents the number of participants of which blue colour indicates yes and red colour indicates no.Chi Square test was done, Chi-square value: 2.548, DF: 8 , p-value: 0.082 (>0.05) hence statistically not significant. This proves that there was no difference in the awareness among both the genders regarding diet patterns followed in the lockdown period.
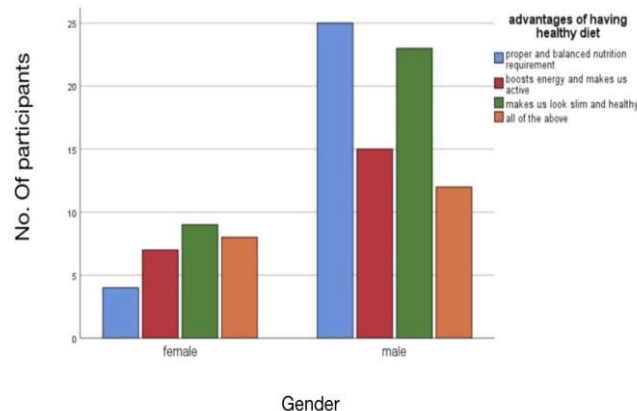

Figure 10: Bar graph showing the association of responses based on gender with the awareness on advantages of having a healthy diet. X-axis represents the gender and Y-axis represents the number of participants of which blue colour indicates proper and balanced nutrition requirement, red colour indicates boosts energy and makes us active, green colour represents makes us look slim and healthy and orange colour represents all of the above. Chi square test was done, chi square value: 4.523, DF=8, p-value-0.067 (>0.05) hence statistically not significant. This proves that there was no difference in the awareness among both the genders regarding the advantages of having a healthy diet.
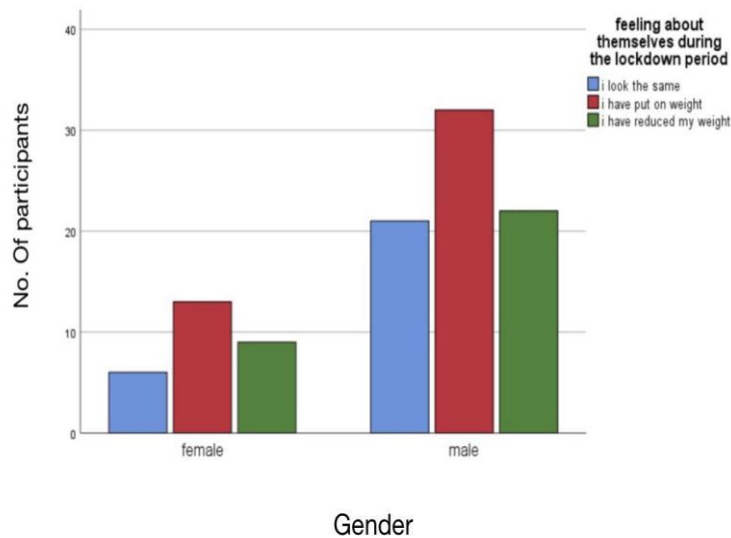
Figure 11: Bar graph showing the association of responses based on gender with the feeling about themselves during the lockdown period. X-axis represents the gender and Y-axis represents the number of participants of which blue colour indicates i look the same, red colour indicates i have put on weight and green colour represents i have reduced my weight. Chi square test as done, Chi-square value-5.123, DF=8, p-value-0.056 (>0.05) hence statistically not significant. This proves that there was no difference in the awareness among both the genders regarding the self weigh assessment among the participants.
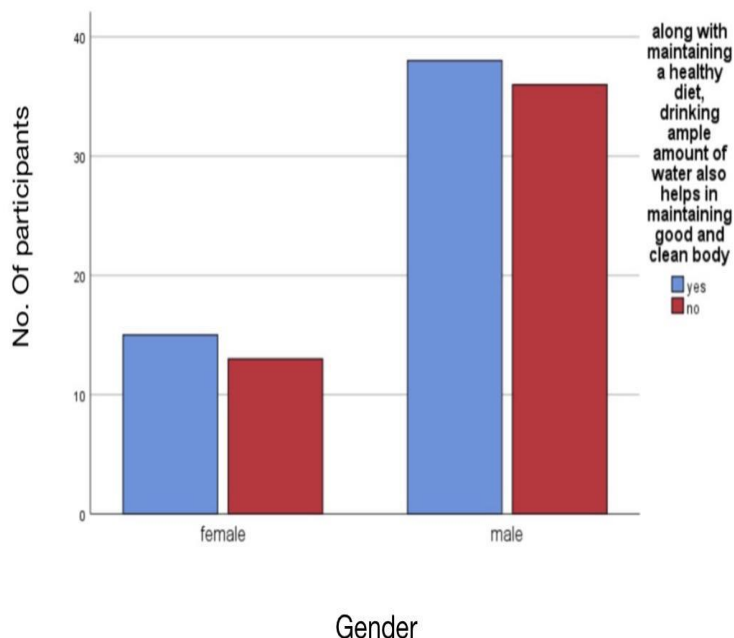

Figure 12: Bar graph showing the association of responses based on gender with the awareness on drinking ample amounts of water maintains a clean and healthy body. X-axis represents the gender and Y-axis represents the number of participants of which blue colour indicates yes and red colour indicates no. Majority of (38 participants) male participants were aware that drinking ample amounts of water maintains a clean and healthy body. Chi square test was done, Chi-square value-7.250, DF=10, p-value-0.335 (>0.05) hence statistically not significant. This proves that there was no difference in the awareness among both the genders regarding the advantages of drinking ample amounts of water.
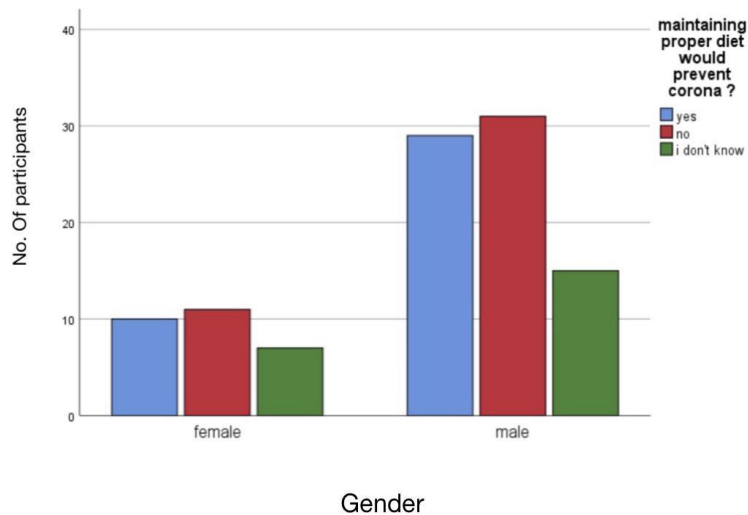
Gender

Figure 13: Bar graph showing the association of responses based on gender with the awareness on whether maintaining a healthy diet would prevent corona . X-axis represents the gender and Y-axis represents the number of participants of which blue colour indicates yes, red colour indicates no and green colour represents i don't know. Majority of the (31 participants) male participants were not aware that maintaining a healthy diet would prevent corona. Chi square test was done, Chi-square value-6.854, DF=10 , p-value-0.112 (>0.05) hence statistically not significant. This proves that there was no difference in the awareness among both the genders regarding whether maintaining a healthy diet would prevent corona.