

PalArch's Journal of Archaeology of Egypt / Egyptology

KNOWLEDGE, AWARENESS AND RISK FACTORS OF CONSUMING COLD SOFT DRINKS AND COLD WATER AFTER CONSUMPTION OF HEAVY FOOD

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Chithambara Shathviha Palaniappan, Karthik Ganesh Mohanraj. KNOWLEDGE, AWARENESS AND RISK FACTORS OF CONSUMING COLD SOFT DRINKS AND COLD WATER AFTER CONSUMPTION OF HEAVY FOOD--Palarch's Journal Of Archaeology Of Egypt/Egyptology 17(7), 1345-1356. ISSN 1567-214x

Keywords: Awareness, cold soft drinks, cold water, meal, risk factors, health problems.

ABSTRACT

Consumption of soft drinks has become a highly visible and contentious public health and policy problem. Some view soft drinks as a major contributor to obesity and related health problems. The aim of the study is to analyse the level of existing knowledge about risk factors in consuming cold soft drinks and cold water after heavy food among the random population. The study was formulated as a questionnaire based observational study comprising 100 participants. All the subjects were requested to respond to a list of self-structured standard questions regarding cold soft drink consumption and the risk factors. All are examined for their knowledge and awareness of the disease and the associated risk factors. From the survey, it is evident that from 100 samples, 74% of the population are aware of the risk factors of consuming cold soft drinks after heavy food and the remaining 26% responded that they are unaware of it. It is therefore evident that the majority of the population taken in consideration had an adequate knowledge of risk factors in consuming cold soft drinks and cold water after heavy food, but at the same time they do not have much knowledge of the prevailing risk factors of it.

INTRODUCTION

In the past two-three decades, soft drink consumption has increased worldwide. Their health effects are unclear although epidemiological studies have pointed to their associations with obesity, kidney disease, liver disease and osteoporosis.¹ Soft drinks primarily contain water, phosphoric acid, caffeine, sugar in the form of sucrose, and other preservative chemicals, flavours and colours.² The consumption rate is alarming particularly in the wealthy countries. The daily intake of soft drinks is correlated with several specific health problems.^{3,4} It has been shown that cold soft drink consumption is associated with separate, harmful effects.⁵ Soft drink content has a detrimental effect on human health.

Caffeine is purposely applied to the make in carbonated beverages to get people addicted, and easily drunk compared to every other drink.^{2,6} There is a link between cold soft drink consumption and multiple disease incidence including obesity, dental / bone disorders, diabetes mellitus and cardiovascular disease.^{7,8} In addition, cold soft drink consumption is notably associated with kidney health and a high risk of developing kidney stones.⁹ Cold soft drink consumption induces bone fracture, bone structure damage, impacts serum or urinary metabolism markers and hypocalcemia in clinical and experimental settings. The liver is the predominant organ in the human body which plays an essential role in food and drug metabolism, and any alteration in its function due to consumption of soft drinks and cold water induces deleterious effects.^{2,10}

The consumption of high-sugar and acid soft drinks after heavy food can lead to adverse oral health and can also affect general health. Therefore, the general population needs to be informed about the adverse effects of various types of soft drinks.

Previously our team had conducted numerous survey studies^{11,12,13}, in vivo laboratory animal studies¹⁴, in silico studies¹⁵, morphological studies^{16,17,18,19,20}, in vitro and genetic studies²¹, over the past 5 years. Now we are focusing on epidemiological surveys and related researches. The idea for this survey stemmed from the current interest in our community and to create awareness and to knowledge the people to lead a healthy life.

The aim of the study is to analyze the existing awareness and knowledge about the risk factors on consumption of cold soft drinks and cold water after heavy food among the random population.

MATERIALS AND METHODS

The study was conducted in an online setting among the random population with approval of the Institutional review board obtained no human and animal ethical approval needed. A total of 100 samples were selected from a random population. The sampling method is simple random sampling all variables are included. A pre tested questionnaire formulated for the collection of information. The questionnaire was simple and brief. The self made questions

were developed. The general information where on the general profile, name, age, gender were collected.

The questionnaire included self made questions to analyse about the knowledge and awareness on risk factors in consuming cold soft drinks and cold water after heavy food. The frequencies on risk factors and awareness were obtained. Correlation analysis and chi-square tests were done and the results were statistically analysed. The data collection was done in January 2020 and the time period for data analysis was from January 2020 to March 2020.

RESULTS AND DISCUSSION

In our present study, Figure 1 shows the survey results obtained by the statistical analysis and it is discussed here, the participation by male is 42% and females is 58% in this survey. Among the survey participants females were more. Figure 2 shows the age group participation in the survey where 46% were 10-20 years and 54% were 20-40 years. Among the participants age group of 20-40 years were more. Figure 3 shows the distribution of consumption of cold soft drinks after heavy food by the participants where 63% agreed, 21% disagreed and 16% consumed sometime. Majority of the participants agreed that they consume cold soft drinks after heavy food. Figure 4 shows the preference to consume cold soft drinks after heavy food were 64% preferred to have cold soft drinks, 23% disagreed with the preference and 13% sometimes preferred cold soft drinks after heavy food. Majority prefer to consume cold soft drinks after heavy food.

For the question on the reason to consume cold soft drinks after heavy food, participants responded that 28% consume due its taste, 42% consume as it improves the flavour of heavy food and 30% consume as the rush it gives due to sugar and caffeine. Majority of the participants say it improves the flavour of heavy food. Figure 6 shows the assumption of participants that cold soft drinks consumption after heavy food helps in digestion where 46 % agree that it helps in digestion, 34% disagree and 20% assume that it helps in digestion sometimes. Majority of the participants assume that cold soft drinks consumption helps in digestion. Figure 7 shows the knowledge on health issues due to consumption of cold soft drinks after heavy food where 67% are aware of health related problems, 22% are not aware. Majority of the participants are aware about the health issues due to consumption of cold soft drinks. Figure 8 shows the awareness on the harmful effects of consumption of cold soft drinks after heavy food where 78% of the participants are aware and 26% of the participants are not aware. Majority of the participants are aware of the harmful effects of consuming cold soft drinks and cold water after heavy food.

Figure 9 shows the consumption of cold soft drinks is an addiction where 46 % of the survey participants agree that it is an addiction and 33% disagreed. Majority of the participants agree that consumption of cold soft drinks after heavy food is an addiction. Figure 10 shows the participants' response in controlling the consumption of cold soft drinks after heavy food where 59% of the participants agreed to control, 12% disagreed and 29% responded that they

might control the consumption. Majority of the participants agreed to control the consumption of cold soft drinks after heavy food.

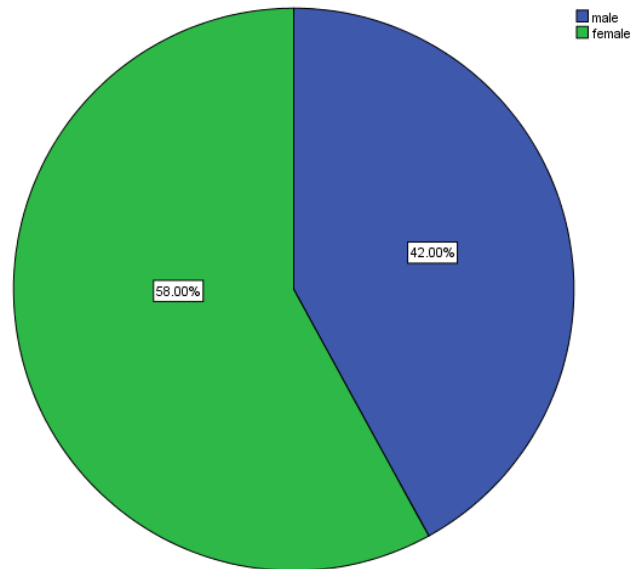


Figure 1 : Pie chart showing percentage distribution of gender in survey participants. 42% (blue) of the participants were male and 58% (green) of the participants were female. N=100. Among the survey participants females were more.

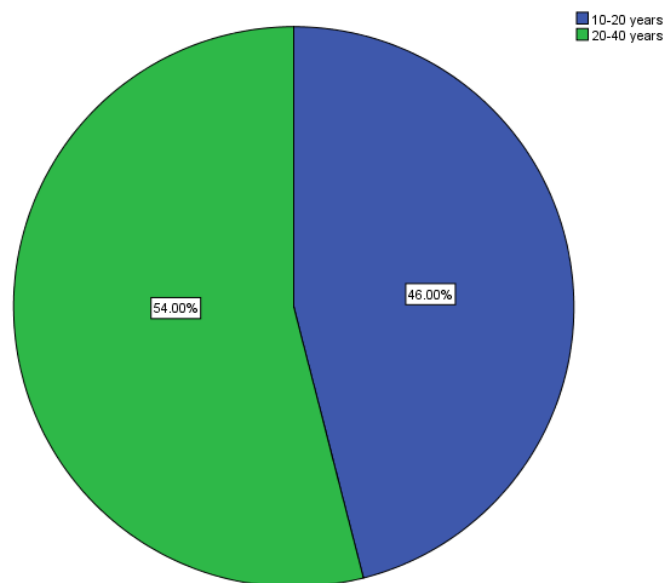


Figure 2 : Pie chart showing percentage distribution of age in the survey participants. The age group of 46% (blue) were of age group 10-20 years and

54% (green) were of age group 20-40 years. N=100. Among the participants age group of 20-40 years were more.

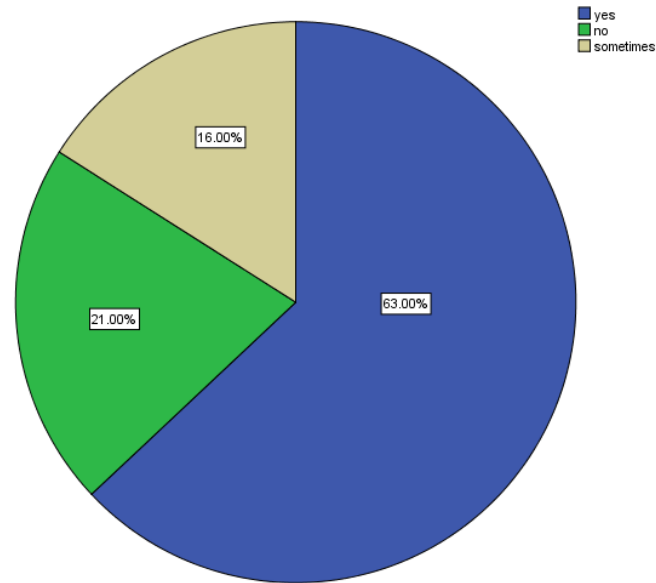


Figure 3 : The pie chart showing the percentage distribution of consumption of cold soft drink after heavy food in survey participants. 63% (blue) answered yes and 21% (green) answered no and 16% (beige) answered sometimes. N=100. Majority of the participants agreed that they consume cold soft drinks after heavy food.

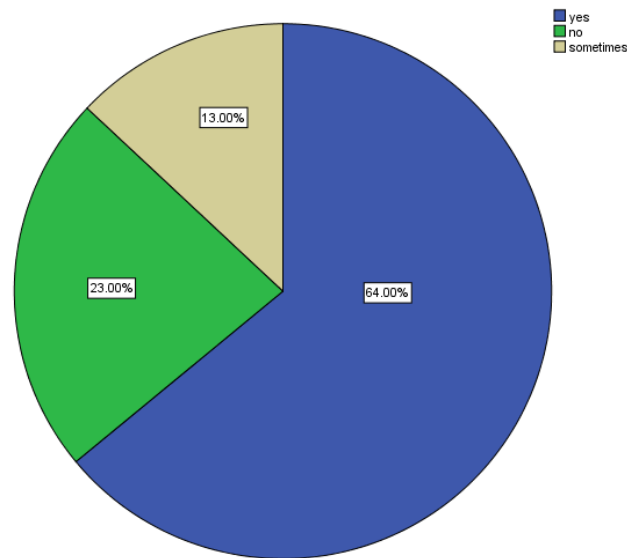


Figure 4 : Pie chart showing percentage distribution of preference to consume cold soft drinks after heavy food in survey participants. 64% (blue) answered yes, 23% (green) answered no and 13% (beige) answered sometimes. N=100. Majority prefer to consume cold soft drinks after heavy food.

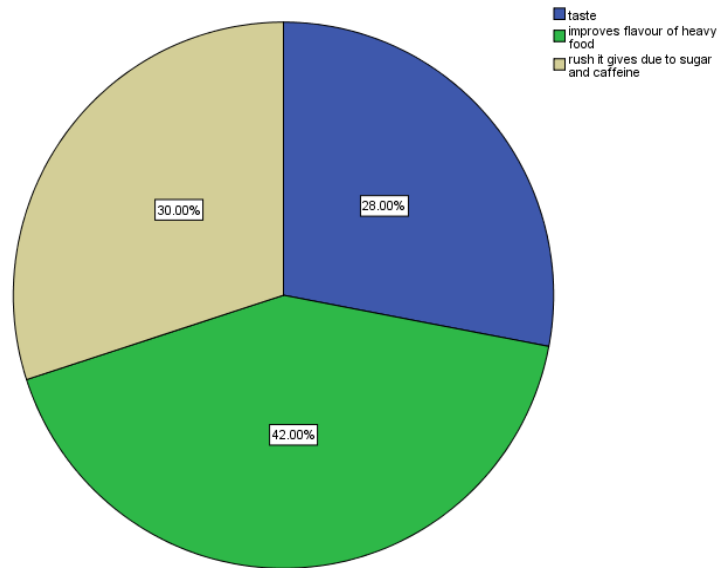


Figure 5 : Pie chart showing percentage distribution of reason to consume cold soft drinks and cold water after heavy food. 28% (blue) answered that the reason is taste, 42% (green) answered that it improves the flavour of heavy food and 30% (beige) answered that the reason is the rush it gives due to sugar and caffeine. N=100. Majority of the participants say it improves the flavour of heavy food.

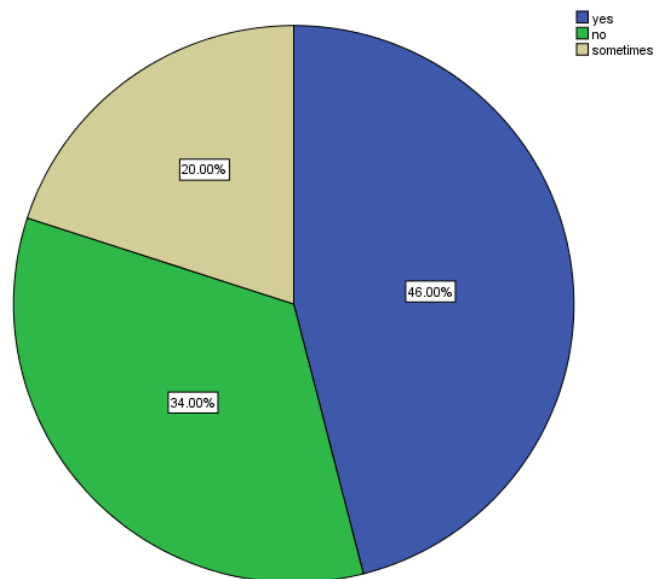


Figure 6 : Pie chart showing percentage distribution of consumption of cold soft drinks helps in digestion. 46% (blue) answered yes, 34% (green) answered no and 20% (beige) answered sometimes. N=100. Majority of the participants assume that cold soft drinks consumption helps in digestion.

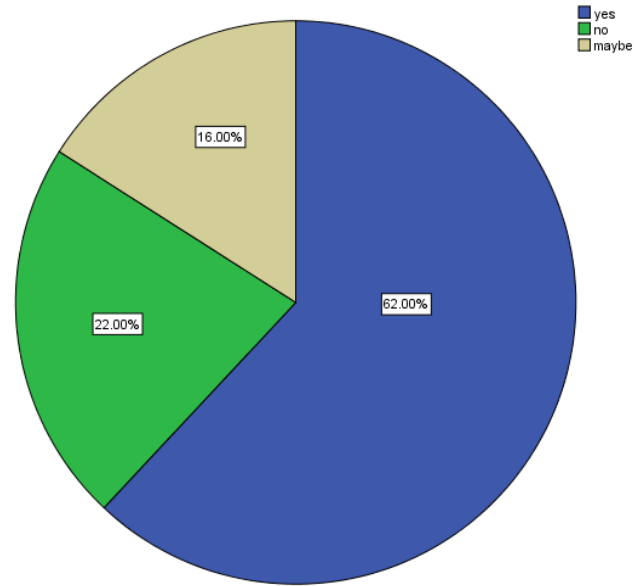


Figure 7 : Pie chart showing percentage distribution of knowledge on health issues due to consumption of cold soft drinks in survey participants. 67% (blue) answered yes, 22% (green) answered no and 16% (beige) answered they might have an idea on consumption of cold soft drinks. N=100. Majority of the participants are aware about the health issues due to consumption of cold soft drinks.

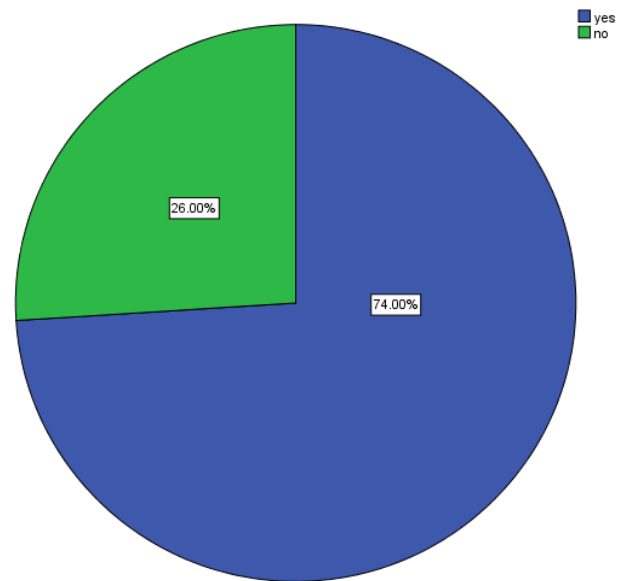


Figure 8 : Pie chart showing percentage distribution of awareness in survey participants on the harmful effects of consumption of cold soft drinks after heavy food. 74% (blue) answered yes and 26% (green) answered no. N=100. Majority of the participants are aware of the harmful effects of consuming cold soft drinks and cold water after heavy food.

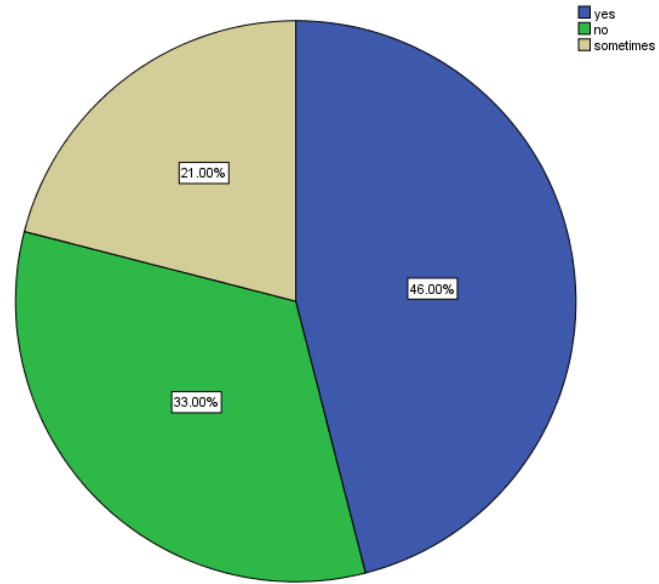


Figure 9 : Pie chart showing percentage distribution of consumption of cold soft drinks is an addiction in survey participants. 46% (blue) answered yes, 33% (green) answered no and 21% (beige) answered sometimes. N=100. Majority of the participants agree that consumption of cold soft drinks after heavy food is an addiction.

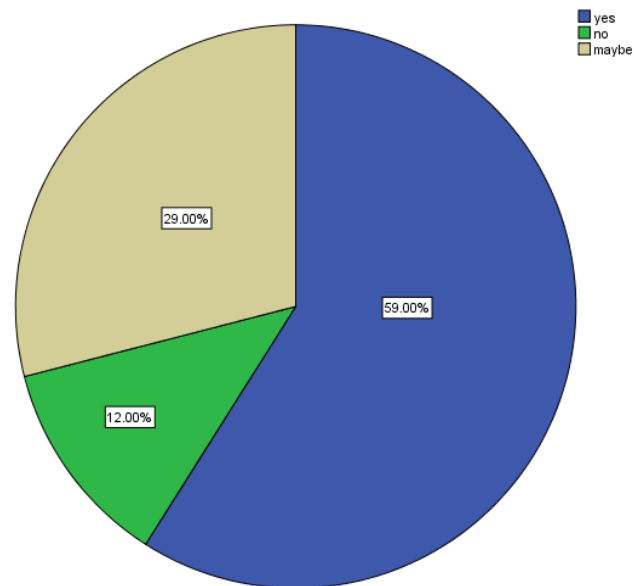


Figure 10: Pie chart showing percentage distribution of control in consumption of cold soft drinks after heavy food in survey participants. 59% (blue) answered yes, 29% (green) answered no and 12% (beige) answered they might control. N=100. Majority of the participants agreed to control the consumption of cold soft drinks after heavy food.

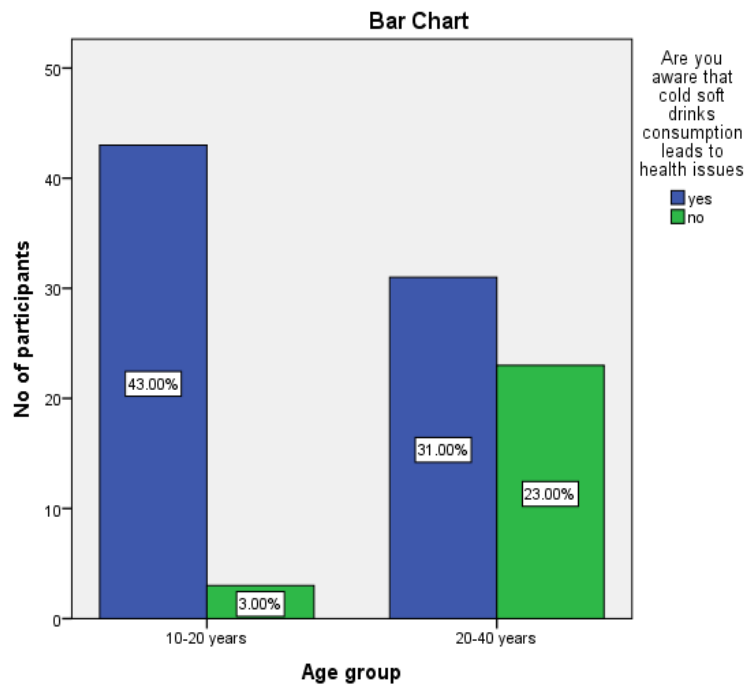


Figure 11 : The bar graph represents the association between age and the frequency of awareness on health issues due to consumption of cold soft drinks after heavy food in the participants. X axis represents age groups and Y axis represents the number of participants. This showed that more participants in the age group of 10-20 years were aware about the harmful effects of consumption of cold soft drinks after heavy food than the age group of 20-40 years. Chi square test showed $p=0.000$ (Pearson Chi square; $p<0.05$) indicating statistically significant.

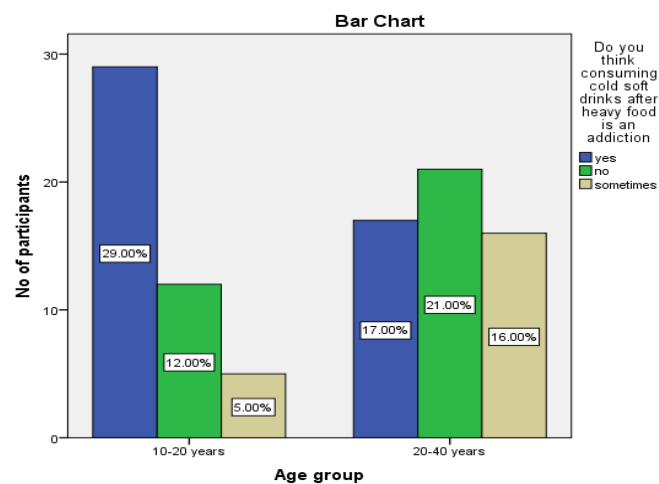


Figure 12: The bar graph represents the association between age and frequency of consumption of cold soft drinks after heavy food is an addiction. The X axis represents age groups and Y axis represents the number of participants. Among the participants the age group of 10-20 years agree that

consumption of cold soft drinks after heavy food is an addiction than the age group of 20-40 years. Chi square test showed $p=0.005$ (Pearson Chi square; $p<0.05$) indicating statistically significant.

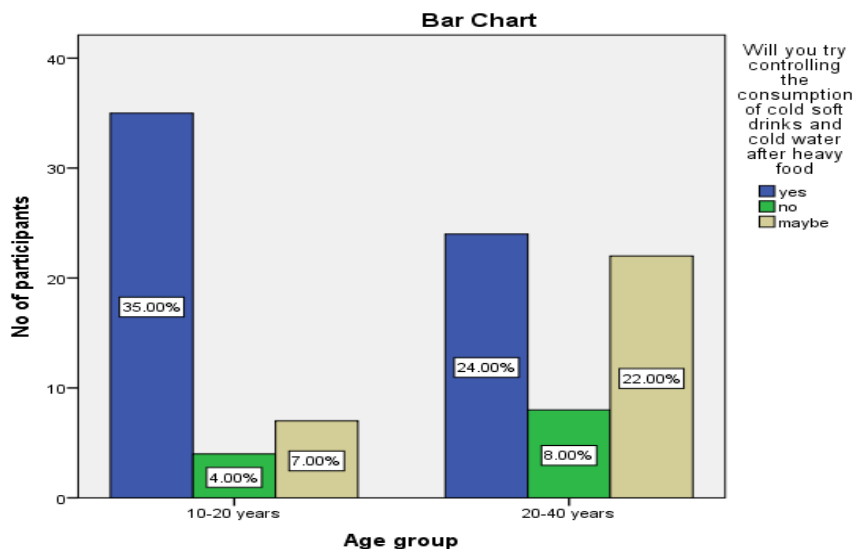


Figure 13: The bar graph represents the association between age and the frequency of controlling the consumption of cold soft drinks after heavy food. The X axis represents the age groups and the Y axis represents the number of participants. Among the participants the age group of 10-20 years agreed to control the consumption of cold soft drinks after heavy food than the age group of 20-40 years. Chi square test showed $p=0.005$ (Pearson Chi square; $p<0.05$) indicating statistically significant.

The association between age and the frequency of awareness on health issues due to consumption of cold soft drinks after heavy food in the participants. This showed that more participants in the age group of 10-20 years were aware about the harmful effects of consumption of cold soft drinks after heavy food than the age group of 20-40 years. Chi square test showed $p=0.000$ (Pearson Chi square ; $p<0.05$) indicating statistically significant.(Figure 11). The association between age and frequency of consumption of cold soft drinks after heavy food is an addiction. Among the participants the age group of 10-20 years agree that consumption of cold soft drinks after heavy food is an addiction than the age group of 20-40 years. Chi square test showed $p=0.005$ (Pearson Chi square ; $p<0.05$) indicating statistically significant. (Figure 12). The association between age and the frequency of controlling the consumption of cold soft drinks after heavy food.Among the participants the age group of 10-20 years agreed to control the consumption of cold soft drinks after heavy food than the age group of 20-40 years. Chi square test showed $p=0.005$ (Pearson Chi square ; $p<0.05$) indicating statistically significant (Figure 13).

Consumption of soft drinks remains a problematic issue for public health and public policy. Through the years, several studies have been carried out on the

potential links between soft drink consumption and medical conditions, the findings of which remain disputed.²² The study extends findings from previous studies which stated that a higher intake of soft drinks is associated with an increased prevalence of metabolic syndrome, higher risk of obesity, higher blood pressure and diabetes mellitus.²³ As the population of our study is more aware of the risk factors associated with consuming cold soft drinks it would be easy to overcome by proper maintenance of sedentary lifestyle and food habits. The best remedy to overcome consumption of cold soft drinks is to follow a healthy diet and exercise regularly.

CONCLUSION

The present study highlighted that the majority of the population taken in consideration had an adequate knowledge of risk factors in consuming cold soft drinks and cold water after heavy food, but at the same time they did not have much knowledge of the prevailing risk factors of it.

ACKNOWLEDGEMENTS

Nil

CONFLICT OF INTEREST

None declared.

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