

Awareness on Application of Antacids among Undergraduate Students

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Abstract

Antacids are usually a class of medication that neutralize stomach acidity and makes its pH more neutral. Commonly used self prescribed medications. Antacids usually consist of magnesium, calcium carbonate and aluminium salts in various compounds or in combination. Gastric acid related disorder could be treated using antacids. Ingestion of antacids must be followed only after ingestion of Meals. The main aim of the survey was to create awareness on application of antacids among undergraduate students. A questionnaire was prepared and administered to 100 participants through an online Google forms link. Study participants included undergraduate students of 18- 26 age group. Method of representation of each output variable was in pie chart form. The result was then statistically analyzed using SPSS software. The result was analyzed as 64% were aware on the application of antacids. 55% think antacids are only used to neutralize acidity but other research shows it can reduce activity of pepsin. 45% feel common side effects of overusing antacids are constipation, Diarrhea, Kidney stones. It shows that severe side effects are rare, although they can occur in high-risk patients. But minor problems like change in bowel habits can occur frequently. This study concludes that antacids have a high neutralizing capacity and give relief and comfort. Also inactivate Pepsin to relieve symptoms and provide temporary relief and comfort. Natural foods like mint, milk, Banana, ginger can be taken instead of antacids.

Keywords: Antacids, acidity, pH, comfort, Awareness.

Introduction

Antacids are usually a class medicine that neutralize stomach acidity and makes its pH more neutral. Commonly used self-prescribed medications are Antacids ¹. Antacids usually consist of magnesium,

calcium carbonate and aluminium salts in various compounds or in combination. Gastric acid related disorder could be treated using antacids ². Ingestion of antacids must be followed only after ingestion of Meals. By consuming antacids, severe side effects are very rare, but may occur in High-risk patients. However, minor problems like change in bowel habits can occur Frequently ³. The more common side effects of consuming antacids are diarrhea, Constipation and so on, which can be managed by alternating the agents or by using one of the various antacids mixtures ⁴. Normal antacid dose taken for treating ulcer is 120 mmol / day to 1008 mmol / day. Low dose antacids may increase mucosal resistance ⁵.

It is revealed that net effect of antacids is reduction of gastric acidity and aluminium containing antacids exhibit the cytoprotective activity or enhancement of

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natural mucosal defense mechanism⁶. The antacid - induced resistance to acidification largely corresponds to the therapeutic antacid activity⁷. Pregnancy causes various hormonal changes in the body that can actually increase the risk of developing gum diseases⁸. Antacids may help in preventing gum disease⁹. Antacids with low dosage can be as effective as H2 blockers both in terms of healing capacity and in relieving ulcer symptoms¹⁰. To reduce the concentration and total load of acids in gastric juice with a pH ranging from 1.3 pH to 5.0 pH is the ultimate goal of antacids therapy¹¹. In the prevention of relapse, consumption of one tablet of antacids, four times a day was found to be effective¹².

There are no proper research or survey done on application of antacids among post

Graduate students. The main aim of the survey was to create awareness on application of antacids among undergraduate students.

Materials and Methodology

Self-administrated questionnaire was designed based on awareness. The questionnaire was distributed through an online Google forms link. The study Population included undergraduate students belonging to the 18- 26 age group. The Participants were explained about the purpose of study in detail. The questions were carefully studied and the participants marked the corresponding answers.

The measures that were taken to minimize the sampling bias were that the Validity was checked both internally and externally. Sample method carried out was simple Random sampling. Method of representation of each output Variable was in pie chart form where descriptive statistics were used to create pie charts.

The result was then statistically analyzed using SPSS statistic 19 software^{13,14,15,16,17}. The survey has been completed in the month of may 2020.

Result and Discussion

This survey was done among undergraduate students in order to analyze awareness on application of Antacids among them. This included 100 participants where the result was statistically analyzed as 45% were female and 45% were male [Figure 1]. 64% were aware of the

application of antacids [Figure 2]. 20% feels Heartburn is the symptoms for which antacids are commonly used for, 21% feels Abdominal pain, 13% feels nausea and 46% feels all of these symptoms [Figure 3]. 30% feels constipation is the common side effect of overusing antacids, 12% feels Diarrhea, 13% feels Kidney stones, and 45 % feel all of these [Figure 4]. 35% feel a single dose of any antacids taken in an empty stomach acts for 10- 30 minutes, 37 % feel 30-60 minutes and 28 % feel more than 1 hour. [Figure 5]. 42% think antacids can be taken on an empty stomach [Figure 6]. 19% think mint is the natural food that can be taken instead of antacids, 11% think milk, 13% think Banana, 11% think ginger and 46% think all of these natural foods [Figure 7]. Chi square analysis between gender and opinion on antacids are only used to neutralise acidity in which 32% female and 23% male responded yes. The P value was 0.042 and it is Statistically significant [Figure 8]. Chi square analysis between gender and opinion on consumption of antacids in which 15% female and 32% male responded to all of the above (feeling of restlessness, nausea, indigestion). The P value was 0.001 and it is Statistically significant [Figure 9]. Chi square analysis between gender and opinion on antacids are mainly used to reduce damage and relieve pain in which 26% female and 29% male responded yes. The P value was 0.702 and it is Statistically non significant [Figure 10]. Chi square analysis between gender and opinion on gelusil or digene is one of the best antacids used in which 31% female and 20% male responded yes. The P value was 0.016 and it is Statistically significant [Figure 11]. Chi square analysis between gender and opinion on treatment with antacid alone is asymptomatic in which 35% female and 29% male responded yes. The P value was 0.129 and it is Statistically non significant [Figure 12].

The present research has origins from the team of investigators where the previous studies were done based on clinical reports, interventional studies like^{18,19,20}, in vitro studies like^{13,14,15,17}, and systematic review like^{18,21,22,23,24,25}. From this survey, it is analyzed that 42% think antacids can be taken on an empty stomach. Antacids suspension should be given at least often as one hour after each meal and at bedtime. The dose should be planned in terms of milli equivalents of acid neutralizing capacity and should be adjusted according to the type of disease under treatment²⁶. 58% feel antacids are only used to neutralize acidity. It is revealed that antacids also

reduce the activity of pepsin and have the capacity to bind bile acids apart from neutralizing acidity²⁷. 45% feel common side effects of overusing antacids are constipation, Diarrhea, Kidney stones. It shows that severe side effects are rare, although they can occur in high-risk patients. But minor problems like change in bowel habits can occur frequently²⁸. 55% feel antacids are mainly used to reduce damage and relieve pain. 71.1% feels antacids are helpful mainly in ulcer healing where they were treated with a low dose antacid regimen which is 1 tablet, 120mmol / day²⁹. 51% feel gelusil or digene is one of the best antacids used whereas it is revealed that antacid which is one tablet four times daily, cimetidine which is 400 mg at night or a combination of the two to be approximately equally effective and it's better antacid³⁰.

There is no exact solution found to eradicate problems like gastric ulcers and so on with the help of antacids as it provides only temporary relief and comfort. This survey can also be carried out on postgraduate students to analyze their level of awareness on application of antacids.

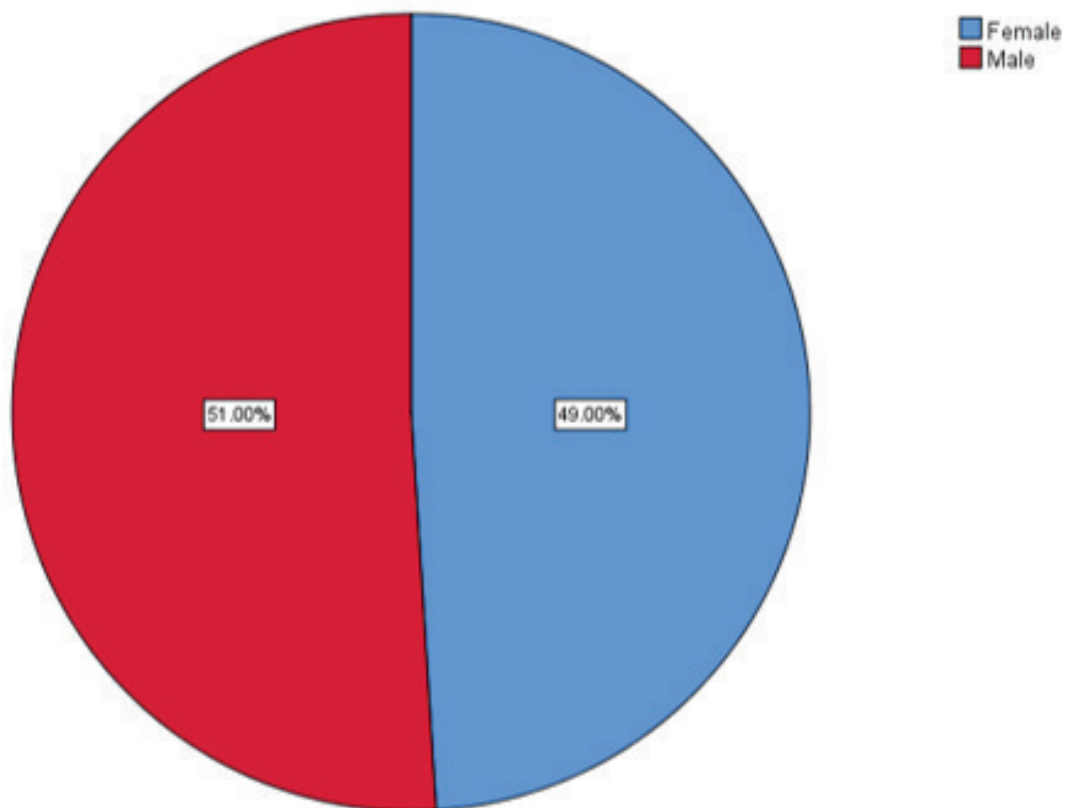


Figure 1: Pie chart represents gender of participants in the study which shows response for the question on gender. 51% (Red) of the participants were male and 49% (Blue) participants were female.

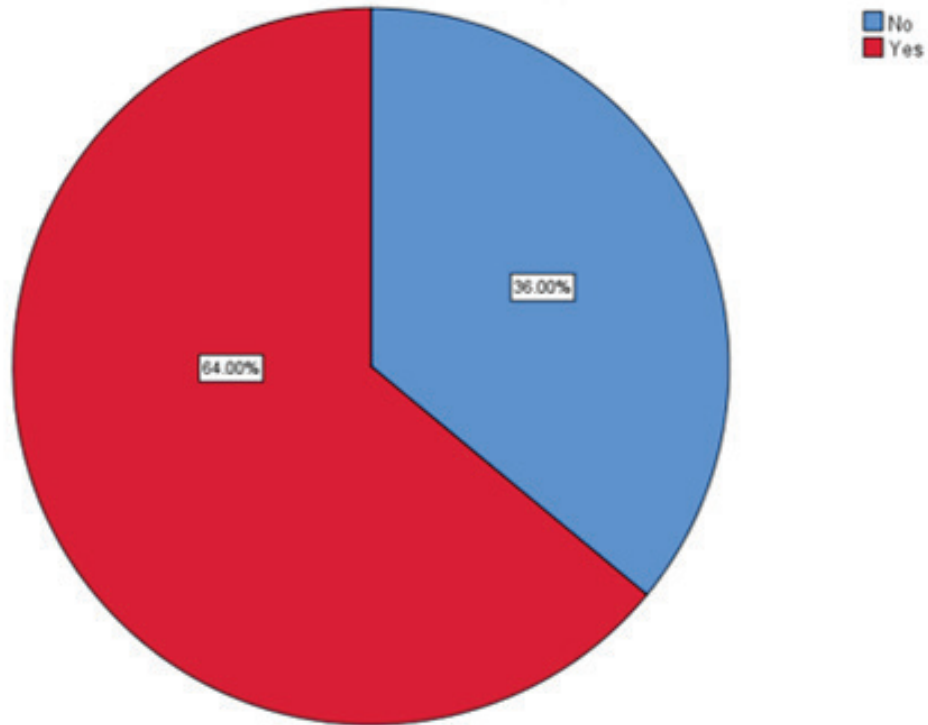


Figure 2: Pie chart represents awareness on the application of antacids which shows response for the question on awareness on the application of antacids. 64% (Red) were aware and 36% (Blue) were not aware.

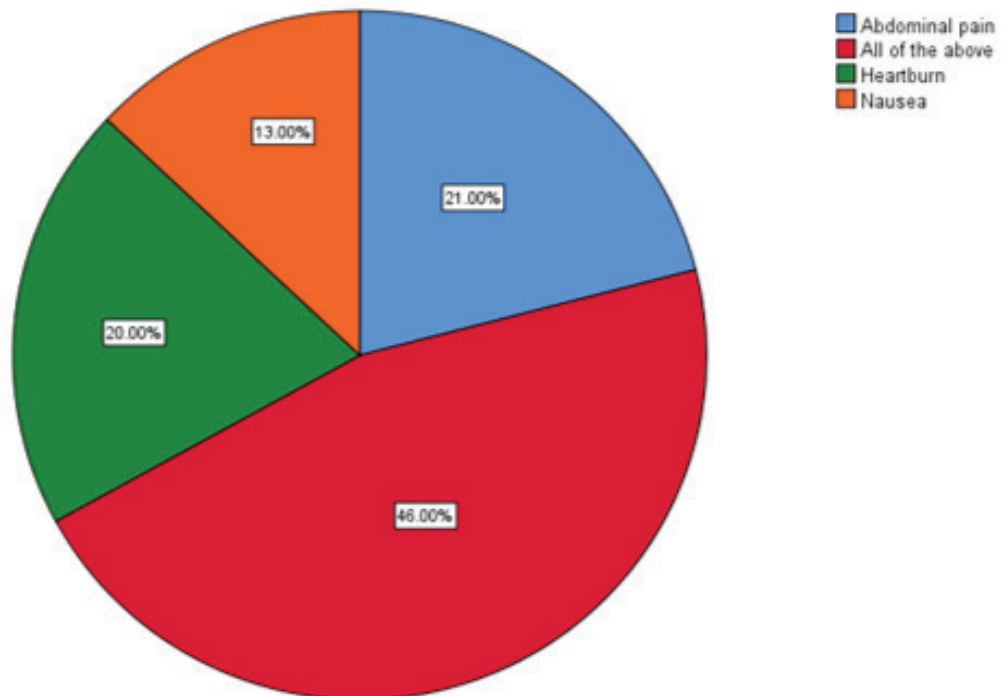


Figure 3: Pie chart representing the opinion on symptoms for which antacids are being used which shows response for the question on symptoms for which antacids are being used. 21% (Blue) responded to abdominal pain, 20% (Green) responded to heartburn, 13% (Orange) responded to nausea and 21% (Red)

responded to all of the above.

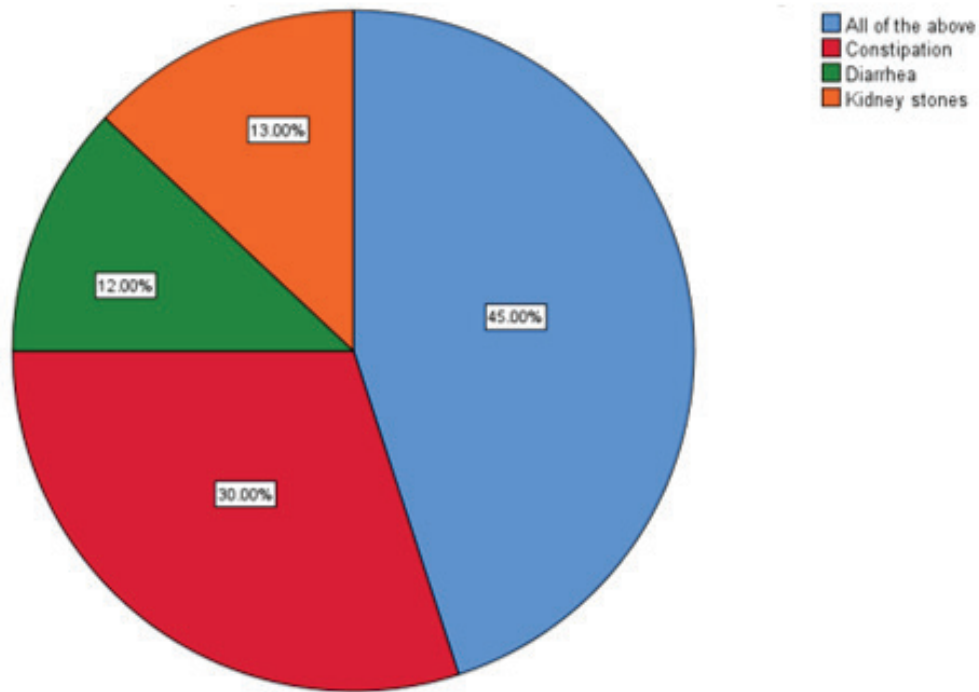


Figure 4: Pie chart representing the opinion on common side effects of overusing antacids which shows response for the question on common side effects of overusing antacids. 30% (Red) responded to constipation, 13% (Orange) responded to kidney stones, 12% (Green) responded to diarrhea and 45% (Blue) responded to all of the above.

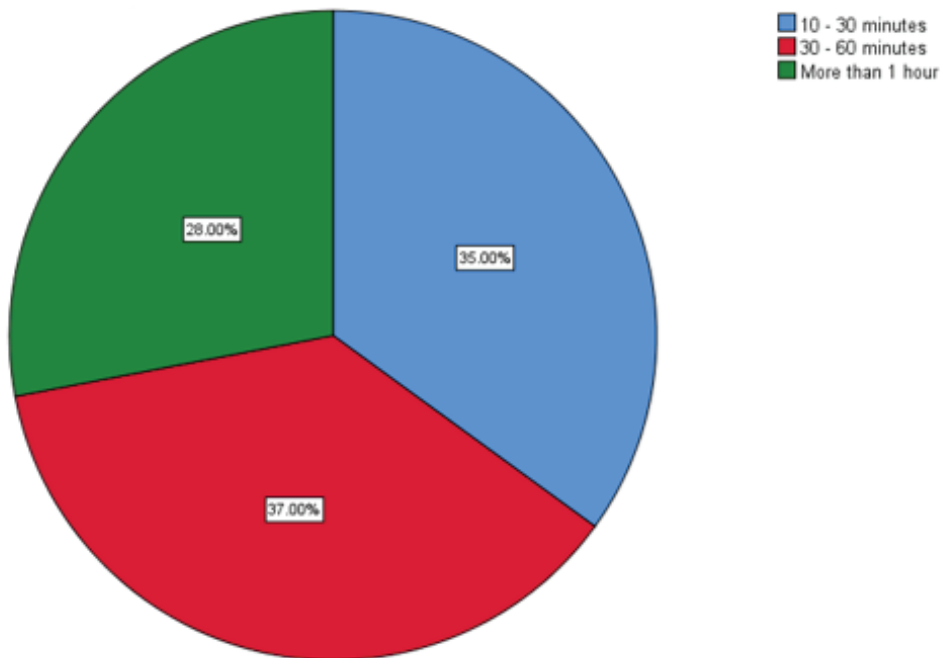


Figure 5: Pie chart representing the opinion on duration of effectiveness of antacids taken in an empty stomach which shows response for the question on duration of effectiveness of antacids taken in an empty stomach. 35% (Blue) responded to 10-30 mins, 37% (Red) responded to 30-60 mins and 28% (Green)

responded to more than 1 hr.

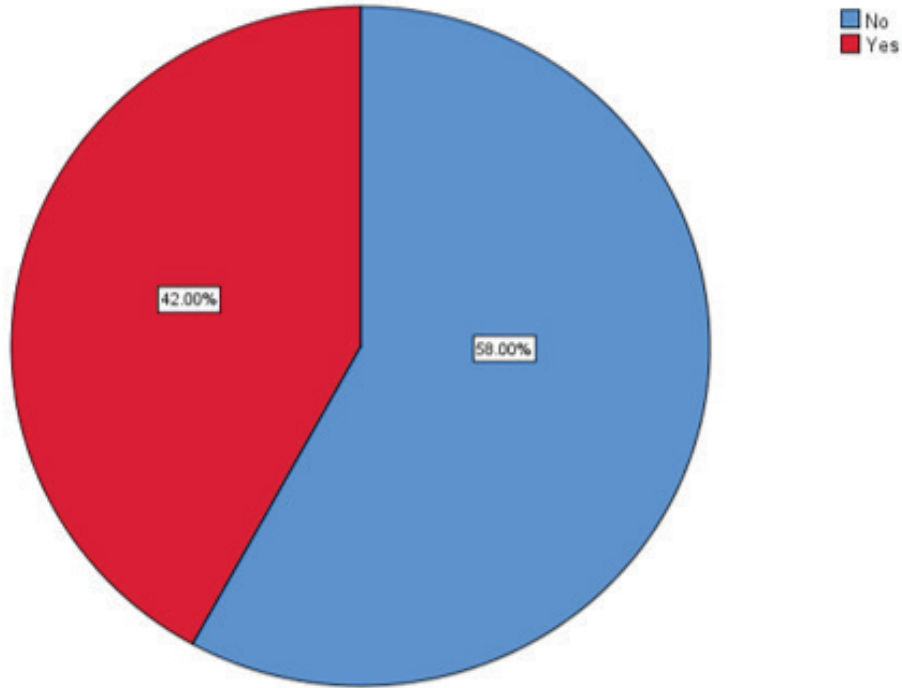


Figure 6: Pie chart representing the opinion on antacids taken on an empty stomach which shows response for the question on whether antacids can be taken on an empty stomach. 42% (Red) responded to yes and 58% (Blue) responded to no.

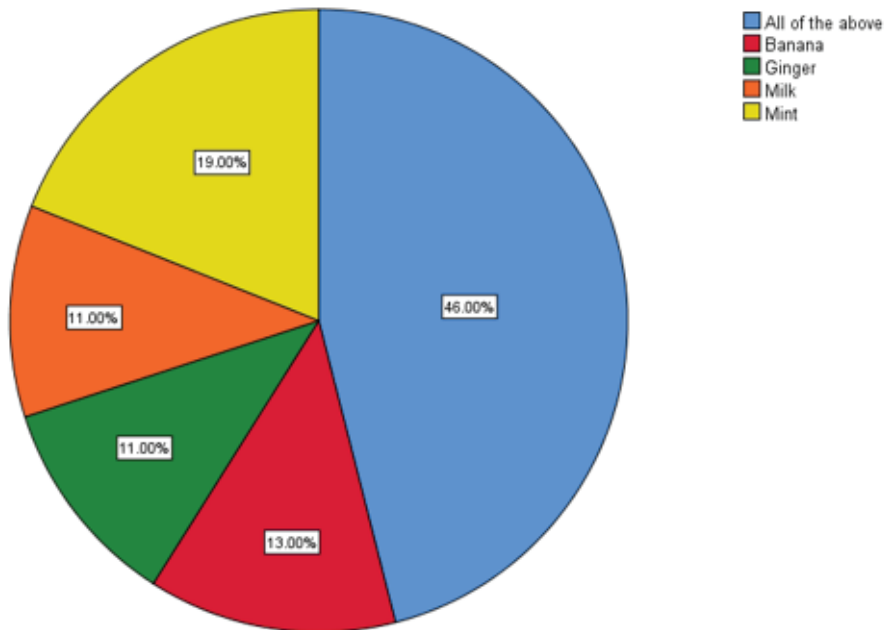


Figure 7: Pie chart representing the opinion on natural food that can be consumed instead of antacids which shows response for the question on natural food that can be consumed instead of antacids. 13% (Red) responded to bananas, 11% (Green) responded to ginger, 11% (Orange) responded to milk, 19% (Yellow) responded to mint and 46% (Blue) responded to all of the above.

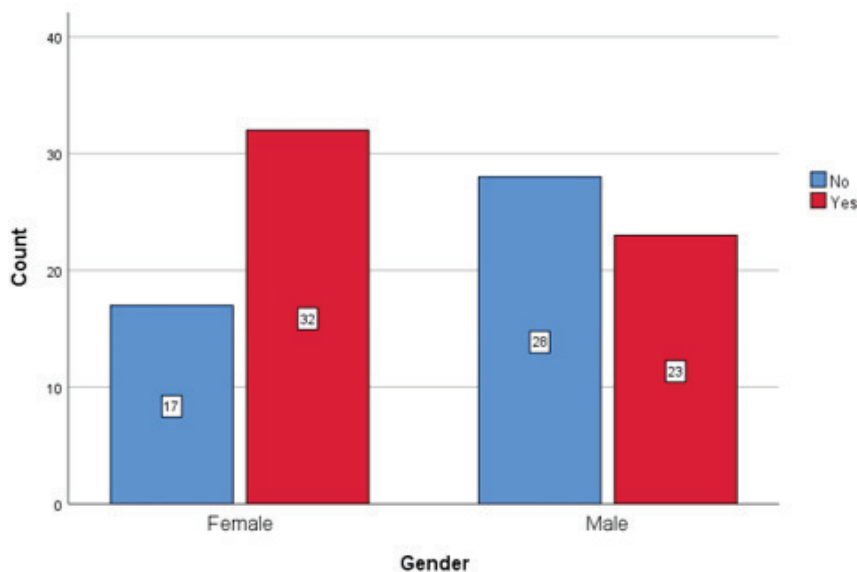


Figure 8: Bar chart representing association between gender and opinion on antacids are only used to neutralise acidity where red denotes yes and blue denotes no. 32% female and 23% male responded yes. X axis represents gender and Y axis represents the number of participants responded regarding antacids are only used to neutralise acidity. Out of 55% of the participants who responded yes, 32% constitute female and 23% constitute male. Hence females have a stronger opinion that antacids are only used to neutralise acidity. Chi square test was done and the association was found to be statistically significant (Pearson’s chi square value = 4.123, df = 1, P value = 0.042(<0.05)). Hence statistically significant.

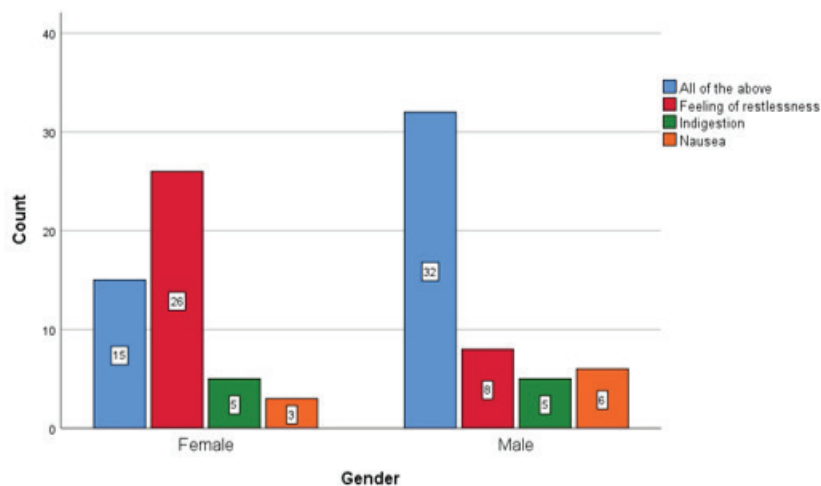


Figure 9: Bar chart representing association between gender and opinion on consumption of antacids where red denotes yes and blue denotes no. 15% female and 32% male responded to all of the above. X axis represents gender and Y axis represents the number of participants responded regarding consumption of antacids. Out of 47% of the participants who responded all of the above, 15% constitute female and 32% constitute male. Hence males have a stronger opinion than females on consumption of antacids incase of indigestion, nausea and feeling of restlessness. Chi square test was done and the association was found to be statistically significant (Pearson’s chi square value = 16.645, df = 3, P value = 0.001(<0.05)). Hence statistically significant.

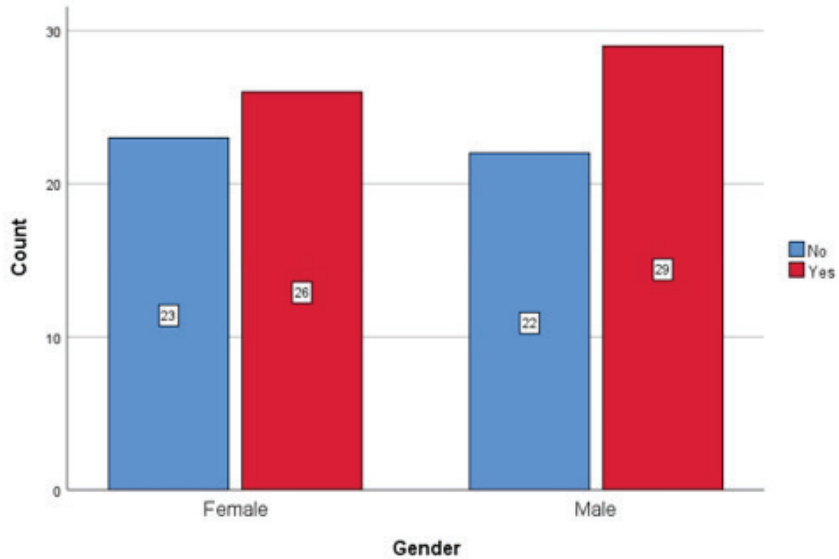


Figure 10: Bar chart representing association between gender and opinion on antacids are mainly used to reduce damage and relieve pain where red denotes yes and blue denotes no. 26% female and 29% male responded yes. X axis represents gender and Y axis represents the number of participants responded regarding antacids are mainly used to reduce damage and relieve pain. Out of 55% of the participants who responded yes, 26% constitute female and 29% constitute male. Hence males have a stronger opinion on antacids are mainly used to reduce damage and relieve pain than females. Chi square test was done and the association was found to be statistically non-significant (Pearson’s chi square value = 0.146, df = 1, P value = 0.702(>0.05)). Hence statistically non-significant.

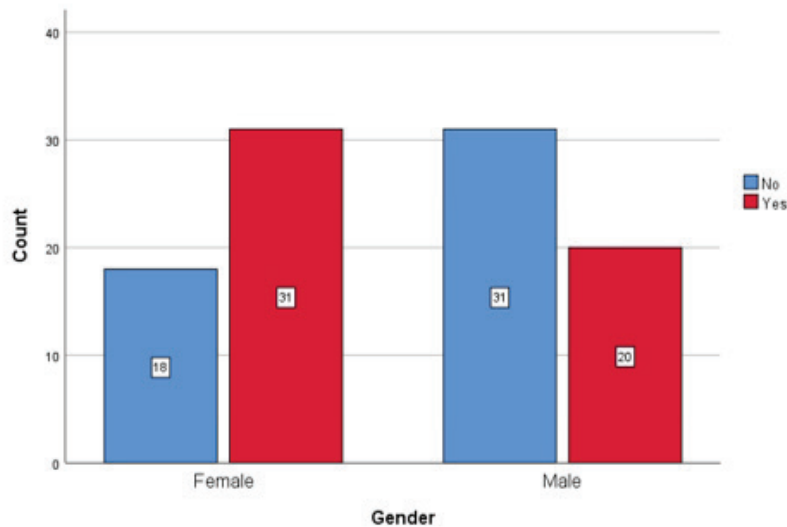


Figure 11: Bar chart representing association between gender and opinion on gelusil or digene is one of the best antacids used where red denotes yes and blue denotes no. 31% female and 20% male responded yes. X axis represents gender and Y axis represents the number of participants responded regarding gelusil or digene is one of the best antacids used. Out of 51% of the participants who responded yes, 31% constitute female and 20% constitute male. Hence females have a stronger opinion on gelusil or digene is one of the best antacids used than male. Chi square test was done and the association was found to be statistically significant (Pearson’s chi square value = 5.784, df = 1, P value = 0.016(<0.05)). Hence statistically significant.

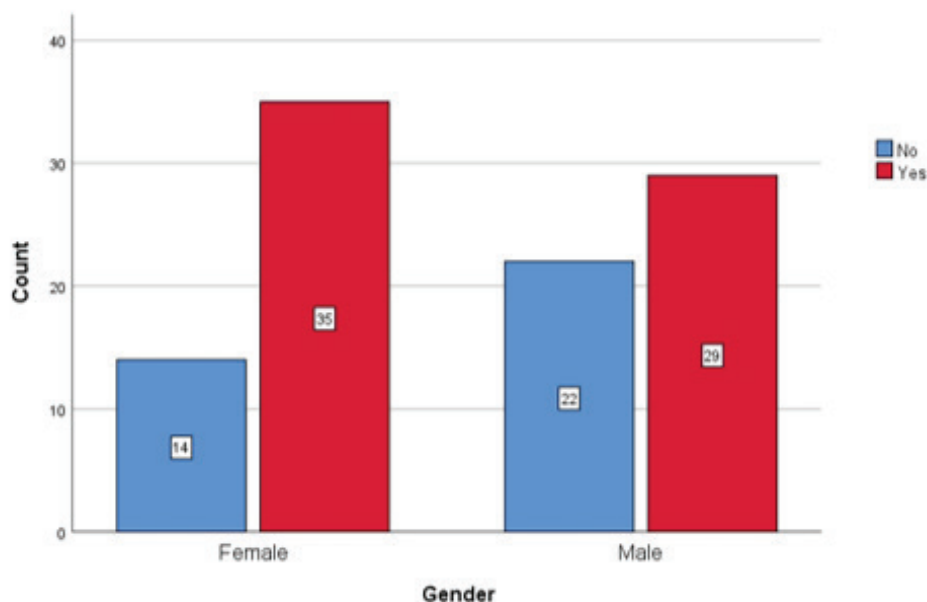


Figure 12: Bar chart representing association between gender and opinion on treatment with antacid alone is asymptomatic where red denotes yes and blue denotes no. 35% female and 29% male responded yes. X axis represents gender and Y axis represents the number of participants responded regarding treatment with antacid alone is asymptomatic. Out of 64% of the participants who responded yes, 35% constitute female and 29% constitute male. Hence females have a stronger opinion on treatment with antacid alone is asymptomatic than male. Chi square test was done and the association was found to be statistically non-significant (Pearson’s chi square value = 2.301, df = 1, P value = 0.129(>0.05)). Hence statistically non-significant.

Conclusion

This study concludes that there is a moderate level of knowledge about antacids among the undergraduate students. As antacids are mainly used for acidity, which is a common problem of present generation due to different lifestyles and food habits, more research has to be carried out for better understanding on the application of antacids.

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Conflict of Interest : The author declares that there was no conflict of interest in the present study.

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Ethical Clearance: Not Required

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