THE ILL EFFECTS IN THE ORAL HEALTH AMONG THE ADULTS DUE TO THE CONSUMPTION OF AERATED DRINKS
Abhirami Kannan¹, Valli Govindarajan²

¹Associate Professor, Department of Dental Surgery, PSG Institute of Medical Sciences and Research College, Coimbatore.
²Senior Resident, Department of Dental Surgery, PSG Institute of Medical Sciences and Research College, Coimbatore.

ABSTRACT

BACKGROUND
Excessive consumption of carbonated soft drink is detrimental to oral and general health and the popularity of the aerated drinks among adults has grown exponentially. This study aims at determining the prevalence of aerated drinks among students in PSG Institute of management. The focus of the study is mainly on the aerated drinks consumption pattern, frequency of consumption, reason and the following symptoms.

MATERIALS AND METHODS
The study was conducted using questionnaire. About 200 students in PSG Institute of Management were taken for the study and the answer to the questions were analysed.

RESULTS
The results showed that out of the total participants 93% reported consuming aerated drinks out of which 84% of participants were seen to consume aerated drink for a period of more than 3 years. About 55% of participants were found to have symptoms like sensitivity. About 41% of them were found to have anterior tooth discoloration and 47% of them were found to have bleeding gums. About 52% of them were found to have mouth dryness consuming aerated drinks. Hence, the participants who took larger quantity of aerated drinks for a longer period of time were found to have more than three symptoms of the study conducted (sensitivity, anterior tooth discoloration, bleeding gums and mouth dryness).

CONCLUSION
The above study clearly shows that there is an increase in proportion of consumption of aerated drinks among young adult, thus resulting in increased ill effect in the oral health.

KEYWORDS

HOW TO CITE THIS ARTICLE: Kannan A, Govindarajan V. The ill effects in the oral health among the adults due to the consumption of aerated drinks. J. Evid. Based Med. Healthc. 2017; 4(43), 2656-2658. DOI: 10.18410/jebmh/2017/527

BACKGROUND
The aerated drinks are being marketed for their taste, energy, refreshment and for hydration for which these products are not indented, popularity of these drinks among adults and adolescents has grown exponentially. Worryingly, they consume them socially as well as during physical activity. They are high in sugar and are acidic products; marketing ignores the potential harmful effect of these soft drinks.

Aerated soft drinks containing inherent acid and sugar have both acidogenic and cariogenic potential. Many studies showed a positive relationship between caries and dental erosion and the consumption of soft drinks.¹

Consumption of aerated drink for a longer period of the time found to have many potential oral and health hazards.

The aim of the study is to evaluate the prevalence of aerated drinks consumption among group of adult in PSG Institute of Management and to analyse the out coming symptoms like sensitivity, discoloration in the anterior teeth (rampant carries), mouth dryness and bleeding gums.

MATERIALS AND METHODS
A total number of 200 students in PSG Institute of Management were planned to be included in the study, out of which only 180 students gave their consent to participant in the study and completed the questionnaire. A time period of 45 minutes were given to the participant for completing the questionnaire. The questionnaire mainly focused on the consumption of the aerated drinks, quantity frequency period of consumption and the symptoms like sensitivity discoloration in the anterior teeth, bleeding gums, dryness of mouth and the participant dental visit.

After obtaining the result from the questionnaire, the participants were grouped as group I (250 mL), group II (500 mL), group III (750 mL) (all of them consuming the aerated drinks at least 250 mL once in a week).

¹Financial or Other, Competing Interest: None.
Corresponding Author:
Dr. Abhirami Kannan,
#5/11, Staff Quarters, PSG Hospitals, Peelamedu, Coimbatore-641004.
E-mail: abhikannan78@gmail.com
DOI: 10.18410/jebmh/2017/527

The inclusive criteria of this study are the young healthy adult of age group between 18-23 years who consumed 250 mL of aerated drinks once in a week.

Exclusion criteria of this study are nondrinkers, occasional drinkers and participants who took less than 250 mL of aerated drinks per week. So, out of 180 students who participated in the study, only 136 of the participants were in the inclusion criteria and they were subjected to the statistical analysis.

RESULTS
The frequency of the parameters is summarised in terms of percentage, proportions, tabulated and illustrated as histograms.

Statistical Analysis

The statistical analysis of the study conducted states that 17% of the participants who took about 750 mL of aerated drinkers were found to be 100% positive for more than three of the symptoms considered (sensitivity, bleeding gums, mouth dryness, discoloration in the anterior teeth) than compared to the other two groups in the participants who consumed 250 mL, 32% of them were affected with more than three symptoms and in the 500 mL were 76%. The dia\(^2\) shows that the participants with 250 mL consumption rinsed the mouth immediately hence preventing the drop in PH, hence less ill effects than compared to the other two groups. It is also clearly seen from dia\(^3\) that the participant with 750 mL had less dental visit than compared to their counterparts.
DISCUSSION
Soft drinks have many potential health hazards. The inherent acid and sugar have both acidogenic and cariogenic potential resulting in dental caries and potential enamel erosion. Most soft drinks contain one or more food acidulants; phosphoric and citric acid are common, but malic, tartaric and other organic acids also may be present. The presence of these polybasic acid in beverages have ability to chelate calcium at higher pH, this mean that they can be very erosive to dental enamel. In few cases, the slowly progressing caries suddenly may become rampant, which may be due to the result from frequent exposure to erosive acids. Drinking method also has significant impact on dental erosion, holding the drink longer in the mouth lead to more pronounced pH drop in saliva. When the pH level in mouth goes below 5.5 (i.e., the critical pH value), the acids begin to breakdown the enamel on teeth. The longer the teeth are exposed to a low salivary pH, the more likely the development of dental caries. Statistically, frequency of consumption have shown significant differences in susceptibility to erosion, which appear to emerge over time with increase intake of acidic beverage. In 60% of the soft drinks, caffeine is present as an flavor addictive. Caffeine is a central nervous system stimulant with diuretic properties and also reduce salivary flow by direct effect upon the salivary gland through effect on the autonomous nervous system or through diuresis and dehydration. Hence, with over time increase, intake of soft drink affect the salivary gland and decreases salivary secretion. The combination of sugar and caffeine may encourage frequent and perpetual pattern of consumption leading to early initiation and rapid progression of dental caries. In rare cases, severe reduction in salivary secretion may also be seen, which in turn result in reduction in cleansing action leading to plaque formation ultimately leading to gingivitis. The statistical analysis of the above conducted study clearly shows that increase in intake of aerated drink were seen to affect the oral health both directly and indirectly.

CONCLUSION
The above study proves that increase in proportion of consumption of aerated drink among young adult causes increased ill effect of oral health than compared to the nondrinkers resulting in discoloration, sensitivity, dental caries and gingivitis. This insist that all dental practitioners should educate their patient about the ill effect of aerated drinks on the teeth and should design health promotion initiatives with this in mind.

REFERENCES