

Behavioural Assessment of Gutkha Chewers amongst Adolescent and Young Working Male Population of Belgaum City, Karnataka State, India

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Received: October 17, 2018; **Published:** November 15, 2018

Abstract

The consumption of gutkha is a complicated and escalating problem currently seen in the adolescent and young adult population of semi urban and rural India and is also one of the leading factors of oral cancer. Over the years, the prevalence for gutkha consumption has seen a sharp rise which is a cause for a serious concern. The production and consumption of tobacco should be addressed so that the public is educated about adverse ecological and health impact of tobacco consumption habit. In the last few years, opinion in favor of reducing consumption has gained momentum all throughout the country. The study was conducted to identify the factors associated with the consumption of gutkha and to assess the Knowledge, Attitude and Practices of gutkha chewers amongst the adolescent and young working male population of Belgaum city.

Questionnaires were distributed to 352 male subjects between the age of 17 to 40 and the responses were collected from them systematically. Results showed that 51.70% of the participants in this study were chewing 1 - 5 packets a day, which indicates an extremely high prevalence of gutkha consumption for the sample population. Mostly, people consume gutkha to deal with stress at the academic or their work related environments. While the dependence on gutkha slowly and steadily increases, they do not realize the harm that they are causing to their own body in the long run. The people need to be educated about the dangers of indulging in gutkha consumption as well as the advantages of stopping this habit needs to be stressed upon them.

Consumption of tobacco is only likely to rise in the current scenario. A multi-faceted, comprehensive policy is needed to battle this rising monster. Also, children need to be made aware of the harmful effects on tobacco consumption because if this habit is addressed when they are young, it is more likely to be stopped as children are more receptive when they are young and have not been exposed to these habits also, nipping this habit in the bud.

Keywords: Gutkha; Chewing; Young Adults; Adolescent Males; Behavior; Assessment

Introduction

Exposure to Tobacco consumption usually begins in adolescence, which is a time for discovery, challenge and experimentation. Gutkha is a chewable flavored tobacco product. It is classified as a Manufactured Smokeless Tobacco Product (MTSP). It is basically a powdery granular substance which is light brownish to white in color, typically taken after meals, as a mouth freshener. It is a dry mixture of crushed areca nut, tobacco, catechu, lime, aromatic and flavoring agents as well as other additives. Aromatic and flavoring agents include spice flavors, aromatic essences like sandalwood, counter irritants, menthol and eugenol) and sweeteners like sorbitol or saccharine) Other additives include flavor solvents like triacetin), humectants (e.g. glycerol), antifungal food preservatives (sodium propionate) and various other chemicals (ammonia, calcium and magnesium carbonates) Within moments of consumption, the gutkha begins to dissolve and turns deep red in color. It imparts upon its user a "high" that is much more intense than any other tobacco product.

It was introduced in India as a commercial product in the early 1970's and quickly became widely sold and used [1]. It is used mainly by the youth and adults less than 40 years, mostly males. It has also been seen to be used by females, including pregnant women. Some adults use gutkha to cope with irregular meals (e.g. taxi drivers), to stay awake during shift work (e.g. in the film industry). Others use gutkha to quit smoking, but may have difficulty in giving up gutkha [2].

Due to the easy accessibility of tobacco, good quality and marketing strategies of the companies, consumption in the form of gutkha has increased amongst its young population (Usage of names like My Teacher, Premium, Josh, Fire, etc. bright and colorful packing, and the size of packaging - small packets being convenient to carry in pockets) are some of the factors contributing to an increase in its usage [3].

Gutkha is more highly addictive than ordinary chewing tobacco. Gutkha addiction can be considered as a form of conditioned reflex, as the consumer tends to associate it with daily day to day activities with the addictive potential of nicotine increasing the consumer's dependence on the same [4].

Gutkha consumption may be a gateway to smoking. The chances of a gutkha user becoming a smoker are extremely high as the person is already exposed to nicotine and may start using cigarette along with gutkha to increase the buzz that they feel after gutkha consumption. However, they do not realize the danger they are putting their body in by consuming both forms of tobacco together which have synergistic effect thereby multiplying the chances of developing premalignant and malignant lesions by a thousand fold.

Areca nut is the fourth most widely used drug after tobacco, alcohol and caffeine. However, its usage and subsequent harmful effects outweighs the transient buzz that one gets on using it [5]. Oral sub mucous fibrosis a painful pre malignant condition increasingly seen in children and youth in India are mostly due to gutkha use. To prevent the children from being riddled with such deadly conditions at such small ages, it is our duty to address this menace so that not only the children but adults are educated about the harmful effects of tobacco consumption.

Belgaum in Northern part of Karnataka is one among the high quality tobacco growing district in the country and is exporting tobacco. Its usage has been consistently increasing and spreading but we do not have sufficient data on its usage in this population and so this study was attempted.

Background information

The city of Belgaum has about 1500 - 1600 gutkha outlets (Paan stalls, Petty shops, etc). It has about 15 - 18 wholesale gutkha merchants. There are more than 600 brands of gutkha available. They are selling about 2000 - 2100 packets of gutkha every day in the wholesale market. Each packet contains 50 - 60 pouches of gutkha depending on the brand i.e. 1,00,000 to 1,20,000 pouches of gutkha are being sold every day in Belgaum city alone.

Gutkha has an alkaline pH of 8.5 to 9.0. and contains nicotine, tobacco specific nitrosamines, benzopyrene and heavy metals (cadmium, Lead, Nickel and Arsenic) that are responsible for its addiction potential.

A combination of Tobacco and areca nut leads to higher chances of the user being addicted to the product which makes it more difficult for the user to quit the habit. The dependency itself is so high that even if the user wishes to quit, they are not able to as their body craves for the substance. That coupled with their work schedules is just a vicious cycle that results in the user getting more and more addicted to gutkha.

Gutkha users had a premature mortality of 1.2 - 1.96 (men) and 1.3 (women) [6]. Current male chewers of betel quid with tobacco in case-control studies in India had relative risks of oral cancer varying between 1.8 - 5.8 and relative risks for esophageal cancer of 2.1 - 3.2. Pregnant women in India who used smokeless tobacco have a threefold increased risk of stillbirth and a two- to threefold increased risk of having a low birthweight infant [6,7]. Not just low birthweight infant, gutkha also is a factor for increased risk for still births in pregnant women using gutkha. In a study by Gupta and Subramoney, 8.9% of smokeless tobacco users had a stillbirth compared with 3.1% among nonusers [8]. Gutkha promotes oral sub mucous fibrosis, a condition that makes it difficult to open the mouth, other premalignant lesions and cancer of the mouth, as well as cancers of the liver, cervix, stomach, prostate and lung. It also promotes heart disease and stroke [9,10]. Other acute effects can include rapid heartbeat, low blood pressure and worsening of asthma. Other long term side effects of gutkha can lead to abnormal thyroid function and kidney abnormalities, as well as metabolic syndrome, liver toxicity and immuno-suppression. It can also alter blood sugar levels and raise the risk of the user developing type 2 diabetes [11].

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Gutkha is highly encouraged at different community social gatherings, festivals and also gutkha packets are flown as kites in many rural areas of India. Due to these reasons, people do not perceive gutkha as a harmful substance and often indulge in it without any inhibitions. Such practices need to be addressed to reduce the amount of gutkha consumption in India.

The price of gutkha is low, which further promotes consumption of gutkha due its easy availability. These are few of the factors that actually promote gutkha consumption in India. They need to be addressed at the grassroots level so that people become educated about the masked danger that they are exposing themselves to.

Gutka packets need to have strong textual and pictorial health warnings. They need to be graphic enough that they create vivid mental images in the user so that they are stuck there every time that the user consumes gutkha. These warnings should clearly impress upon them the dangers they are putting their lives into by continuing this habit. Preferably, pictures of patients with oral/lung cancer should be put on the packet so that the consumers know how bleak their future looks if they decide to continue this habit and such representations should motivate them enough to discontinue this habit

The public needs to be educated about the dangers of gutka, the most dangerous form of smokeless tobacco. It should be addressed at most basic level so that it can have the desired impact. The best practice to follow would be educating the children about the harmful effects of tobacco consumption and stress upon them the condition of patients suffering from oral and other forms of cancer and the reduced quality of life that they have to live because of the choices they made. As children are most impressionable, it will be extremely easy to target them at an early age to promote a healthy habit of not consuming tobacco in any form.

Tax evasion in the gutka industry is rampant in India. The people deal in death and themselves have no moral compass. Their products are masked as blessings but in reality they deal with cancer and death. Making profit off the people's misery isn't just enough for them, they actually go to any lengths to make any amount of profit out of the same. Not only that, they hide their ill-begotten gains to live a comfortable lavish lifestyle. The companies selling such products should be taxed at the manufacturing stage itself so as to reduce their profits due to a decrease in their production of tobacco products and also reduce the consumption of such products by the masses. Excise tax must be levied and compliance with the same must be monitored too to make sure that these companies don't build fortunes on the backs on these people.

Recently, Gutkha has been banned in many states of India by the Food Safety and Standards Authority of India (FSSAI). The basis for the ban has been that gutkha contains high level of a chemical additive magnesium carbonate that is regulated for food items. It is added to increase the shelf life of the product. Which is also a chemical used in fire extinguishers. Magnesium carbonate itself has very specific deleterious health effects but when it is added to gutkha and gutkha is consumed, it has far more serious health effects because then it is a carcinogen. It has lots of toxins and produces many fatal and non-fatal diseases in an individual.

To stop this menace, we must continue to advocate for a permanent product ban on gutka and similar products, enforce tobacco control laws: Advocate for pictorial warnings on gutka packages. End surrogate advertising (Paan masala ads for gutka) on Television and Radio and put an end to sponsorship of festivals by tobacco companies so that they cannot advertise their products. Also, sale of gutkha products to minors should be stopped effective immediately with no exceptions. Bring areca nut products into the ambit of tobacco control laws as it a major reason for addiction in users. Increase tobacco cessation facilities that help current users in quitting effectively.

Objectives of the Study

1. To identify the factors associated with the consumption of gutkha.
2. To assess the Knowledge, Attitude and Practices of gutkha chewers amongst the adolescent and young working male population of Belgaum city.

Materials and Methods

This was a cross sectional study conducted in Belgaum city. A self-prepared questionnaire was used. The targeted population was 352 adolescent males, who were either students or young adult males between the ages of 17 years and 40 years, all of whom were chewing gutkha. The questionnaire was administered methodically and responses collected.

The name and age of the participants and informed consent was taken. Information on dietary practices and occupation was also taken.

The questionnaire comprised totally of 32 questions out of which, 7 questions were pertaining to knowledge, 10 questions were pertaining to attitude and 15 questions were pertaining to practices.

Inclusion criteria

- Individuals chewing a minimum of 100 Gutkha sachets in the last one year were included.
- Readiness for participation.

Exclusion criteria

- Occasional chewers were not included.
- Users of smoking and smokeless i.e. chewing gutkha and smoking Bidis/Cigarettes were also not included.

The City of Belgaum was divided into Four Zones. College students and young working male population were taken from all the four zones, totaling 352; all of whom were gutkha chewers.

Results and Discussion

Results

The results pertaining to the questionnaire are presented as percentages as below.

79.2% of the population covered was the working adult male population and 20.8% was the student population. 80.7% of the population was of a mixed dietary practice and 19.3% was of a vegetarian diet. 44.3% of the sample had chewed Gutkha the first time between the ages of 16 and 20 years. 54.8 per cent had consumed Gutkha during all of the past 7 days. 51.7 per cent used to chew 1-5 pouches per day. 45.45 per cent chewed additional gutkha in the company of friends and during social get togethers. 50.57 per cent chewed Star brand of Gutkha. 43.75 per cent spent Rs. 1 to 10 on Gutkha on a daily basis. 83.23 per cent were using other forms of tobacco other than Gutkha as well. 55.96 per cent were chewing Gutkha at work place only. 14.77 per cent were chewing Gutkha as the first thing in the morning. 92.04 per cent of the participants' parents were not chewing Gutkha. 75.85 per cent of the participants' parents knew about the Gutkha chewing habit. 55.96 per cent of the participant's spouse knew about the chewing of Gutkha. 7.95 per cent of the participants expressed discomfort when eating hot and spicy food. 2.55 per cent of them had difficulty in complete mouth opening. 55.39 per cent said they will probably not be chewing gutkha during the next 12 months. 68.46 per cent of them were introduced into Gutkha chewing by friends. 3.12 per cent of them said that they were influenced by media to begin gutkha chewing. 97.44 per cent of them were aware of gutkha chewing being injurious to health. 55.96 per cent were aware of substitute products for gutkha. 93.46 per cent was aware that tobacco in gutkha causes cancer. 63.92 per cent of them have had discussions about the harmful effects of chewing gutkha. 37.21 per cent had received help or advice from a friend to stop chewing. 43.75 per cent said that they chewed to relieve stress.

8.8 per cent of them said that chewing gutkha enables easier socialization and making of friends. 90.05 per cent said they were chewing gutkha only for the last two years. 96.02 per cent of them were keen to stop the chewing of gutkha. 51.13 per cent of them had attempted to stop gutkha chewing. 82.95 per cent of them showed will power to stop chewing gutkha. 66.76 per cent of the participants expressed that the main reason for deciding to stop chewing gutkha was to improve one’s oral health and general health.

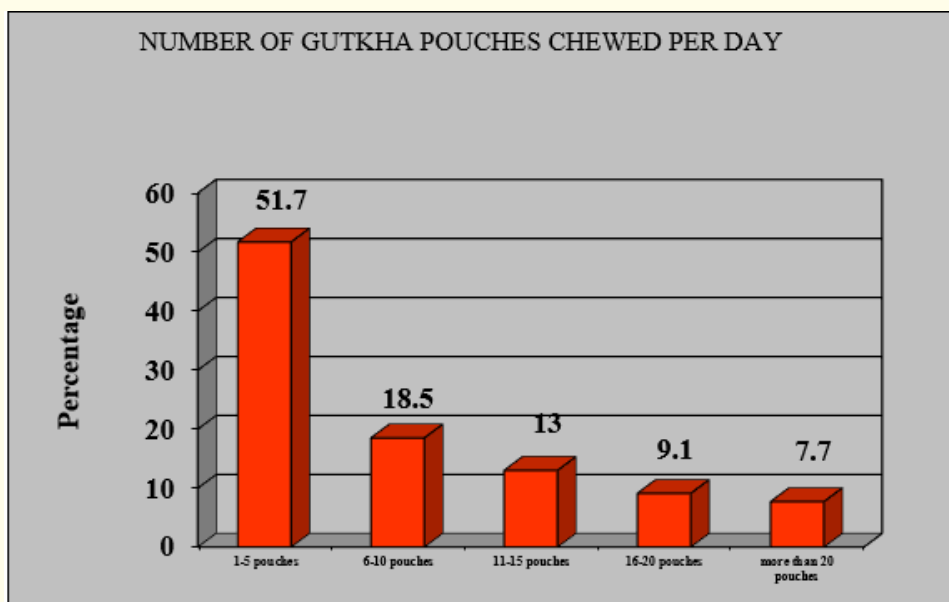


Figure 1: Depicting the number of Gutkha pouches chewed per day.

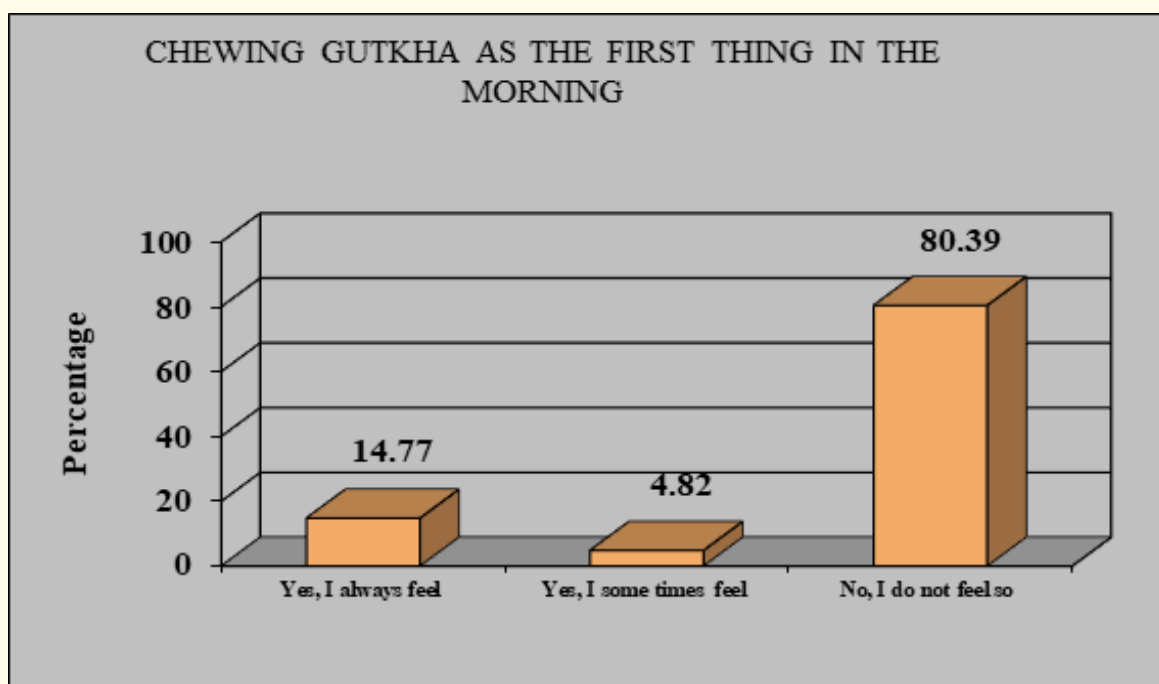


Figure 2: Depiction of chewing Gutkha as the first thing in the morning.

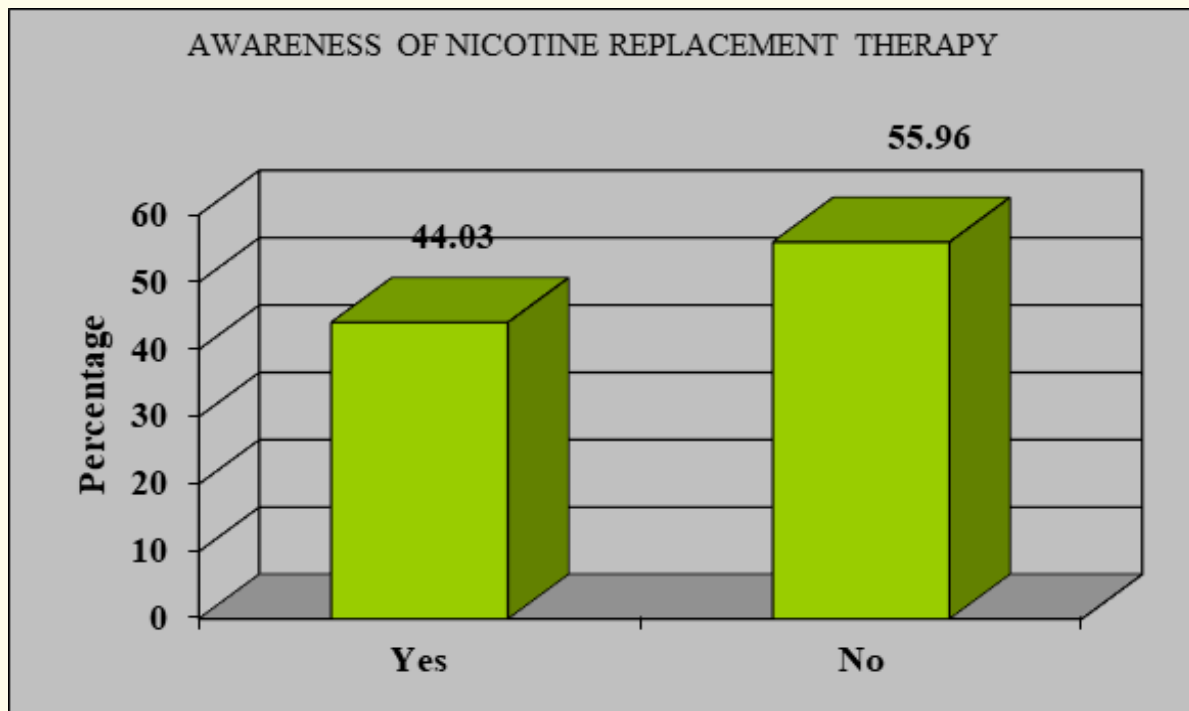


Figure 3: Depicting the awareness of Nicotine Replacement Therapy.

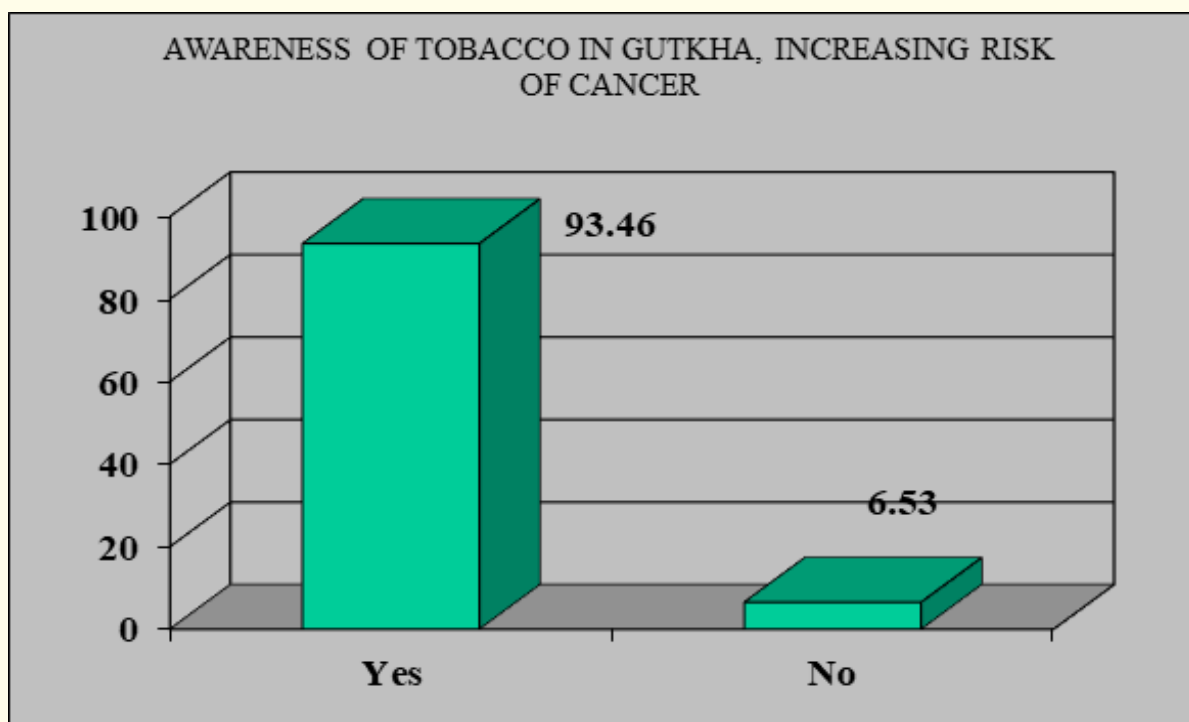


Figure 4: Depicting the awareness of tobacco in Gutkha increasing the risk of cancer.

Discussion

Some of the findings of this present study are similar to some of the findings of other earlier studies that have been conducted in India. A study by Mukherjee K, Hadaye RS has shown that the average number of gutkha pouches consumed per day was 3 in their study. 51.70% of the participants in this study were chewing 1 - 5 packets a day. In a study by Sinha and Gupta, it was observed that tobacco usage (used even once) was reported at 71.8% and 48.9% reported tobacco usage at 10 years of age or even earlier. Current use of smokeless tobacco products was reported by 55.6%, with gutkha being the most popular (84%) [12]. Similar findings were presented in this study.

Friends consumption of gutkha, stress, academic grading and peer pressure were significantly associated ($p < 0.001$) with gutkha consumption in their study. In this study, 68.46% of the participants said that they had been introduced to gutkha chewing by friends.

Further, in this study, 45.45% of the participants said that they chewed more gutkha in the company of friends. So, this underlines the role of friends and peer pressure, in the aspect of gutkha chewing.

In another study on gutkha and tobacco consumption and awareness of their health hazards among school and college students in Gujarat by Parwal AB, Mukherjee S, more than half of the students were aware of the close association between gutkha and oral cancer [13]. In this study 93.46% of the participants were aware of the fact that tobacco can cause cancer. More than 2/3rd of the college students in their study had expressed a willingness to quit gutkha. In this study 96.02% of the participants wanted to stop chewing gutkha.

Limitations of the Study

1. There were limited funds available and so the study could not be extended to the entire district.
2. There are variations in Gutkha consumption patterns and types across the district in its 11 talukas and this fact could not be explored in detail.
3. Though there is enough proof in the form of literature about women chewing gutkha, it was observed during the study that it was a rarity and difficult to find women with the gutkha chewing habit.

Conclusion

The role of friends, peer pressure and stress needs to be addressed for successful intervention among this young male population becoming a victim to this dangerous habit. When the data on occupation was assessed, it was found that 21% (59) of the unskilled and semiskilled working males who were facing more stress on a daily basis, due to more manual work (Autodrivers, Drivers of Vans, Buses, Lorries, etc. and some industrial workers) were chewing more gutkha (Crossing 25 pouches a day) to beat stress daily. So, an intervention programme especially for them, in collaboration with the Drivers Unions, Industrial workers Unions and Pharmaceutical companies, will be extremely beneficial. Self-examination of the oral cavity needs to be promoted. Another interesting point linking Non Vegetarian Diet and gutkha chewing has opened up which needs further exploration and documentation. Banning only one tobacco product, namely gutkha will not solve the problem. Legal measures should be supported by Public awareness campaigns and its effective implementation. Motivating the gutkha chewers effectively, to staying away from gutkha will be crucial. A larger funded study will enable to find a suitable solution to the problem as well as wean the victims from this habit. Tobacco Cessation Services and a dedicated District Tobacco Cessation Cell will be very helpful in this population to improve community oral health outcomes contributing to an enhanced Quality of Life.

Smokeless tobacco is promoted extensively in India; Gutkha is the most advertised smokeless tobacco product and is promoted through all media and also has an impact on the public. For stronger tobacco control it needs to be enforced with vigilance. There is a scarcity of communication material on the effects of smokeless tobacco. Keeping in mind the high quality of tobacco advertising that commands the attention of the public, skilled media professionals should work with health professionals and health authorities in preparing attractive communication material, in simple language with unequivocal meaning, incorporating messages about all forms of smokeless tobacco and smoking. Anti-tobacco education must be imparted through schools, hospital outreach programs, existing government health programs

such as maternal and child health programs and routine home visits, using suitable materials. Suitable programmes and activities should be developed targeting rural people, in particular the women who use the smokeless tobacco products most [14]. In the foreign countries the tobacco industry through advertisement has managed to make smoking by women more acceptable by making it seem as a sign of social liberation and emancipation of women. The data from the study by Sinha., *et al.* seems to indicate that India is suffering from a similarly designed masterplan strategically being implemented by the Gutkha industry. Gutkha use is being portrayed as fashionable and as a sign of equality and social liberation and such portrayal seems to increase current smokeless tobacco amongst adolescent men and well as women [15]. These practices need to be addressed and nipped in the bud to explain to the people that chewing gutkha should not turn into a social norm and it shouldn't be encouraged as well.

All previous policies aimed at regulating smokeless tobacco are yet to produce the results we desire. According to National Survey Reports we can observe that there has been steep increase in the usage of smokeless tobacco in the past few decades. This is extremely disappointing to see despite all the efforts put in by the people advocating against the usage of gutkha. Strong steps need to be taken in order to battle this rising epidemic and only with a collaborative effort will we be able to not let it seep into every corner of the society we live in.

Stressing upon the prohibition of tobacco and nicotine usage in any food or food product, as conferred a complete ban on the production, supply, and distribution of gutkha should be imposed and needs to be facilitated by stern public health agencies. With the help of national agencies, we must make sure that no smuggling of products between the States takes place and also no one fools the Law by selling pan masala and tobacco powder separately. Only when we work in complete harmony and cohesion can we manage to stop the rising tide of gutkha consumption [16].

Acknowledgements

Sincere acknowledgements to all the participants of the study for their support and enthusiasm and Health Sciences Library, Manipal, MAHE for all logistic support.

Source of Funding

Self-funded.

Conflict of Interest

None.

Bibliography

1. Reddy K Srinath and Prakash C Gupta. "Tobacco control in India". New Delhi: Ministry of Health and Family Welfare, Government of India (2004): 43-47
2. Bhonsle RB., *et al.* "Tobacco habits in India". Control of tobacco-related cancers and other diseases (1992): 25-46.
3. Bala DV., *et al.* "Epidemiological determinants of tobacco use in Gujarat state, India". *Indian Journal of Community Medicine* 31.3 (2006): 173-176.
4. Joshi Prathamesh Satish., *et al.* "Gutkha Addiction: Nicotine Dependence or a Conditioned Reflex?" *Journal of International Oral Health: JIOH* 7.2 (2015): 45-47.
5. Winstock A. "Areca nut-abuse liability, dependence and public health". *Addiction Biology* 7.1 (2002): 133-138.
6. Gupta Prakash C and Cecily S Ray. "Smokeless tobacco and health in India and South Asia". *Respirology* 8.4 (2003): 419-431.
7. Foulds Jonathan., *et al.* "Effect of smokeless tobacco (snus) on smoking and public health in Sweden". *Tobacco Control* 12.4 (2003): 349-359.

8. Gupta Prakash Chandra and Sreevidya Subramoney. "Smokeless tobacco use and risk of stillbirth: a cohort study in Mumbai, India". *Epidemiology* 17.1 (2006): 47-51.
9. Bathi Renuka J., *et al.* "The role of gutka chewing in oral submucous fibrosis: A case-control study". *Quintessence International* 40.6 (2009): e19-e25.
10. Gupta PC. "Mouth cancer in India: a new epidemic?" *Journal of the Indian Medical Association* 97.9 (1999): 370-373.
11. Mukherjee K and Hadaye RS. "Gutkha consumption and its determinants among Secondary Male students". *Indian Journal of Community Medicine* 31.3 (2006): 177.
12. Parwal AB and Mukherjee S. "Gutkha and Tobacco consumption and awareness of their health hazards among school and college students in Gujarat". *Indian Journal of Community Medicine* (2005).
13. Sinha Dharendra N., *et al.* "Tobacco use among students in Bihar (India)". *Indian Journal of Public Health* 48.3 (2004): 111-117.
14. Dobe Madhumita., *et al.* "Smokeless tobacco use and its implications in WHO South East Asia Region". *Indian Journal of Public Health* 50.2 (2006): 70-75.
15. Sinha DN. "Gutkha advertisement and smokeless tobacco use by adolescents in Sikkim, India". *Indian Journal of Community Medicine* 30.1 (2005).
16. Arora M and R Madhu. "Banning smokeless tobacco in India: policy analysis". *Indian Journal of Cancer* 49.4 (2012): 336-341.

Volume 17 Issue 12 December 2018

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