Tobacco – A global agent of death

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ABSTRACT

The epidemic of tobacco use is one of the greatest threats to global health today. Tobacco use is a major preventable cause of premature death and of several general diseases. Tobacco has got long history. Today, many varieties of smoked and smokeless form of tobacco products are available which are making people to get addicted. It affects all the system of our body. Government along with different organizations and NGOs bringing up strict policies to combat this global agent of death. This paper reviews tobacco, its ill effects and preventive treatments as well as policies by government.

Key Words: Tobacco, Tobacco cessation, Cancer.

INTRODUCTION

The epidemic of tobacco use is one of the greatest threats to global health today. Tobacco use is a major preventable cause of premature death and of several general diseases. (World Health Organization, 2009; U.S. Department of Health and Human Services, 2012). Most oral consequences of tobacco use impair quality of life be they as simple as halitosis, as complex as oral birth defects, as common as periodontal disease or as troublesome as complications during wound healing.

History: On October 15, 1492, Christopher Columbus was offered dried tobacco leaves as a gift from the American Indians that he encountered. Soon after, sailors brought tobacco back to Europe, and the plant was being grown all over Europe. The major reason for tobacco's growing popularity in Europe was its supposed healing properties. They believed it could cure almost anything, from bad breath to cancer. First commercial plantation was in Virginia (USA) in 1612. During the 1600's, tobacco was so popular that it was frequently used as money and was literally "as good as gold!". In 1760, Pierre Lorillard establishes the first tobacco company in New York City to process tobacco, cigars, and snuff. Tobacco was first introduced in the kingdom of Adil Shahi, the capital city of Bijapur, presently in Karnataka in south India, along the trading route of the Portuguese. Emperor Akbar received a tobacco and a pipe, he took a few puffs out of curiosity and courtesy. His physician forbade him from inhaling the smoke and suggested that if the smoke was passed through water, it might become safer. Hence, the hookah was created and became a symbol of aristocracy. British East India Company began growing tobacco as a cash crop in India. India is 3rd largest exporter in the world after china and Brazil, 4th largest consumer of tobacco in the world. (Soben Peter, 1999; KS Reddy and PC Gupta, 2004)

Epidemiology of tobacco use: Presently, it has been estimated that tobacco usage causes more than five million deaths worldwide, which is expected to rise up to more than eight million per year by 2030. (Mathers and Loncar, 2006; WHO, 2009; WHO, 2011). Total consumption of tobacco products is increasing globally, though it is decreasing in some high-income and upper middle-income countries. Within countries the prevalence of tobacco use is highest amongst people of low educational background and among the poor and marginalized. In several developing countries there have been sharp increases in tobacco use especially among men. Rising prevalence rates in youth and women as the tobacco industry continues to target them. (Gauravi A. Mishra, 2009). As per the latest nationally representative Global Adult Tobacco Survey (GATS), India had 275 million current tobacco users in the year 2009-2010 (over 35 per cent of adults): majority of them used smokeless tobacco (164 million) and 42 million used both forms of tobacco. (K. R. Thankappan, 2014). 2-3% growth per annum of tobacco consumption in India and by 2020 it is predicted that it will account for 13% of all deaths in India. [Arora M, Reddy K S, 2005] World Bank has reported that nearly 82,000-99,000 children and adolescents all over the world begin smoking every day. If current trend continues, tobacco will kill nearly 250 million of today's children. (Warren CW and et al., 2000)

Tobacco products: Smoked tobacco and Smokeless tobacco. (Soben Peter, 1999; KS Reddy and PC Gupta, 2004)

Smoked tobacco products:

Cigarettes: consist of shredded or reconstituted tobacco processed with hundreds of chemicals. Often with a filter, they are manufactured by a machine, and are the predominant form of tobacco used worldwide.

Bidis: Consist of a small amount of tobacco, hand-wrapped in dried temburni leaf and tied with string. Despite their small size, their tar and carbon monoxide deliveries can be higher than manufactured cigarettes because of the need to puff harder to keep bidi's lit.

Cigars: are made of air-cured and fermented tobaccos with a tobacco wrapper, and come in many shapes and sizes, from cigarette sized cigarillos, double coronas, cheroots, stumpen, chuttas and dhumtis. In reverse chutta and dhumti smoking, the ignited end of the cigar is placed inside the mouth. There was a revival of cigar smoking at the end of the 20th century, among both men and women.

Kreteks: are clove-flavoured cigarettes. They contain a wide range of exotic flavourings and eugenol, which has an anaesthetising effect, allowing for deeper smoke inhalation.

Pipes: are made of briar, slate, clay or other substance – tobacco is placed in the bowl and inhaled through the stem, sometimes through water.

Sticks: are made from sun-cured tobacco known as brus and wrapped in cigarette paper.

Hookahs: The water pipe, also known as shisha or hubbly bubbly, is commonly used in North Africa, the Mediterranean region and parts of Asia.

Smokeless tobacco products:

Chimos: Popular in Venezuela.Tobacco leaves are crushed and boiled for several hours, starch and fiber are discharged. The remaining portion becomes a concentrated product, 10 kilos of tobacco becomes one kilo of "Pasta". For maturation it is then placed in natural containers, or "taparas" (the dried fruit from Tapara tree), or wrapped in banana leaves. The matured paste is "seasoned" with other ingredients, listed above. Finally packaged in small tins or candy-like wrapped cylinders. Most factories are small.Tobacco leaf, sodium bicarbonate, brown sugar, ashes form mammon tree, vanilla and aniseed flavoring.

Nicotine lozenges: Consist of Tobacco, mint and eucalyptus

Loose leaves chew/chewing or spit tobacco: Commercially manufactured. Loose cigar tobacco leaves are air-cured, then stemmed, cut or granulated and loosely packed to form small strips of shredded tobacco. Most brands are sweetened and flavoured with liquorice. Typically sold in pouches weighing about 3 ounces. 1 Loose-leaf tobacco has high average sugar content (approximately 35%).

Moist plug: Commercially manufactured. Enriched tobacco leaves (Burley and bright tobacco or cigar tobacco) or fragments are wrapped in fine tobacco and pressed into bricks. Moist plug tobacco has at least 15% moisture. Most plug tobacco is flavoured and sweetened with liquorice. Plus tobacco is packaged as a compressed brick or flat block wrapped inside natural tobacco leaves. Typically weighs 7 to 13 ounces. Sugar content is approximately 24%.

Twist roll: Handmade by commercial manufacturers. Dark, air cured leaf tobacco is treated with a tar-like tobacco leaf extract and twisted into rope-like strands that are dried. Typically, no flavouring or sweetener is added. The final product is a pliable, but dry, rope. The product is sold by the piece in small (1 to 2 ounce) or larger sizes based on the number of leaves in the twist.

Gul: Contains tobacco powder, molasses, and other ingredients. Often used for cleaning teeth.

Gutkha: Commercially manufactured. Tobacco, betel nut and catechu are mixed together with several other ingredients, flavoured, and sweetened. Product is sold in small brightly-coloured packets, which appeal to children.

Iqmik: Fire-cured tobacco leaves are mixed with punk ash (ash generated by burning a woody fungus that grows on the bark of birch trees). The ingredients are available at grocery stores and retail outlets, but are generally combined by the user before use. It is believed that the punk ash in the mixture raises the pH level in the mouth, increasing the dose and enhancing the delivery of nicotine to the brain.

Khaini: Powdered tobacco and slaked lime paste are combined by the user in his/her palm and formed into a ball. Areca nut is sometimes added. Usually prepared by a user from basic ingredients at the time of use. Popular in Bihar

Qiwam: Tobacco leaves are processed by removing their stalks and stems, then boiled and soaked in water flavoured with spices and additives such as musk. The resulting pulp is mashed, strained, and dried into a paste.

Toombak: Tobacco leaves are harvested and left in a field for uniform drying. The leaves are then tied into bundles, sprinkled with water, and stored for a couple of

weeks at 30 to 45ºC to allow fermentation. The leaves are then ground up and aged for up to a year. After aging, toombak vendors (in toombak shops) place the product in bowls and gradually add sodium bicarbonate until the mixture is approximately 4 parts tobacco to 1 part sodium bicarbonate. The mixture is blended by hand and constantly tested with the tips of the fingers until it becomes moist and hardened. The toombak is then placed in an airtight container for about 2 hours prior to sale.

Creamy Snuff: The product constituents are tobacco, clove oil, glycerin, spearmint, menthol, camphor

Often used to clean teeth. The manufacturer recommends letting the paste linger in the mouth before rinsing.Primarily used by the women. Commercially manufactured. Sometimes marketed as a dentifrice.

Dry Snuff: Tobacco is fire-cured, then fermented and processed into a dry, powdered form. The moisture content of the finished product is less than 10%. It is packaged and sold in small metal or glass containers.

Moist snuff: The tobacco is either air- or fire-cured, then processed into fine particles ("fine cut") or strips ("long cut"). Tobacco stems and seeds are not removed. Moisture content of the final product is up to 50%. The tobacco is sold either loose (in such products as Skoal, Copenhagen and Kodiak), or packaged in small, ready-to-use pouches called packets or sachets (in such products as Skoal Bandits). Nicotine is released more rapidly from the fine cut form due to the greater surface area. Moist snuff is the most commonly used form of tobacco in the United States.

Snus: Finely ground dry tobacco is mixed with aromatic substances, salts, water, and humidifying agents. The product is kept cold to avoid fermentation. The final product has a moisture content of about 50% and has a damp consistency.

Pan Masala: Commercially prepared, vendor prepared or assembled at home. Areca nut is boiled, roasted, or sun-dried. Tobacco may be used raw, sun-dried, and roasted, then finely chopped, powdered and scented. Alternatively, the tobacco may be boiled, made into a paste and scented with rosewater or perfume. To assemble, slaked lime and catechu are smeared on a betel leaf. The betel leaf is folded into a funnel shape and tobacco, areca nut and any other ingredients are added. The top of the funnel is folded over, resulting in a quid, which is placed in the mouth for use.

Mishri (masheri, misheri): Applied to the teeth and gums,often for the purpose of cleaning the teeth. Users then tend to hold it in their mouths (due to the nicotine addiction).Predominantly women. More common in lower socio-economic groups.Tobacco is baked on a hot metal plate until toasted or partially burnt, then powdered.

Constitutent of a tobacco (soben peter, 1999; KS Reddy and PC Gupta, 2004):

- Principal constituent of tobacco leaves: Alkaloid nicotine.
- Of which they contain from 1 to 7, sometimes even 10 per cent.
- Also contain a crystalline substance, nicotianin, and small quantities of other alkaloids, viz., nicotinine, nicoteine, and nicoteline, together with traces of a volatile oil, etc.
- Tobacco smoke is estimated to contain over 4000 compounds, many of which are pharmacologically active, toxic, mutagenic and carcinogenic.
- Major components of tobacco smoke have been identified as most likely to cause disease are:

Nicotine: Among the most toxic of all poisons and acts with great speed. Average lethal dose for an adult human: 30 – 60 mg. Used as insecticides. Pharmacological agent in the tobacco smoke causing addiction among smokers. Immediate physiological effects: Increased heart rate and blood pressure, constriction of cutaneous blood vessels, and muscular, hormonal and metabolic effects. Prolonged exposure (in combination with carbon monoxide): Increased platelet stickiness and aggregation and damage to the lining of the blood vessels, suggesting a potential role in causing coronary disease. Nicotine does not appear to possess direct carcinogenic activity itself. It enables the formation of tobacco-specific nitrosamines, which are potent carcinogens.

Tar: Particulate matter inhaled when the smoker draws on a lighted cigarette. Each particle is composed of a large variety of organic and inorganic chemicals. In its condensate form, tar is a sticky brown substance which can stain smokers' fingers, teeth yellow brown and the lung tissue. Among the carcinogens or tumour initiators present in cigarettes smoke are the two major classes of tumor initiators:

1. Polycyclic aromatic hydrocarbons
2. Tobacco-specific nitrosamines (eg; benzopyrene)

Carbon monoxide (co): Colourless, odourless, poisonous gas. CO interferes with uptake of oxygen in the lungs and with its release from the blood to the

tissues that need it. It combines with the haemoglobin in the blood to form carboxyhaemoglobin. (Affinity for haemoglobin over 200 times greater than that of oxygen). Binds preferentially with haemoglobin, reducing the amount of oxygenated blood circulated to body organs and tissues, so impairment of oxygen transportation in the body. Oxygen levels may be reduced by as much as 15% in smokers. Strongly linked with the development of coronary heart diseases. Due to interference with myocardial oxygenation, increasing platelet stickiness, or promotion or atherosclerosis. CO also restricts the oxygen available to the foetus, contributing to the low weight of babies born to women who smoke. The baby in the womb cannot grow normally if deprived of oxygen.

Nitrogen oxides: Present in relatively high levels. Causes lung

Hydrogen cyanide and other ciliatoxic agents: Direct, deleterious effect on the cilia (part of the natural lung clearance mechanism in humans). Interference with this cleaning system, accumulation of toxic agents in the lungs, increasing the likelihood of developing disease.

Other toxic agents in cigarette smoke affecting the cilia: Acrolein, ammonia, nitrogen dioxide and formaldehyde.

Metals: 30 metals detected in tobacco smoke. Arsenic, chromium and their compounds are associated with cancer in humans. Nickel, cadmium and their compounds are probably carcinogenic.

Radioactive compounds: They are well established as carcinogens. Polonium-210 and potassium-40 (highest concentration). Others include radium-226, radium-228 and thorium-228.

TOBACCO – AN ADDICTION.HOW IT AFFECTS THE BRAIN? A typical smoker will take 10 puffs on a cigarette over a period of 5 minutes that the cigarette is lit. Thus, a person who smokes about 1 1/2 packs (30 cigarettes) daily gets 300 “hits” of nicotine each day. (Drug Facts, 2014).

Tobacco product is chewed, inhaled, or smoked .Nicotine enter the bloodstream. (Drug Facts, 2014)

1. Immediately stimulates the adrenal glands to release the hormone epinephrine (adrenaline).

Stimulation of the central nervous system increases blood pressure, respiration, and heart rate.

2. Glucose is released into the blood and it also suppresses insulin output from the pancreas → smokers have chronically elevated blood sugar levels.

3. Like cocaine, heroin, and marijuana, Nicotine - increases levels of the neurotransmitter dopamine, which affects the brain pathways that control reward and pleasure →addiction.

When an addicted user tries to quit, he or she experiences withdrawal symptoms including irritability, attention difficulties, sleep disturbances, increased appetite, and powerful cravings for tobacco.

ILL EFFECTS OF TOBACCO (ASH Briefing Report, 2014; KS Reddy, PC Gupta, 2004; Maxillofacial Center 2014; World Health Organization, 2014)

Cardiovascular diseases: Coronary heart disease (e.g.Heart attacks), Sudden cardiac death, Atherosclerosis - arteries of the legs -peripheral vascular disease-leg pain, difficulty in walking- gangrene-loss of limb. Aortic aneurysm and High cholesterol (LDL)

Cancers: Leukemias, Lungs, Oral cavity, Pharynx, Larynx, Esophagus, Pancreas, Kidney and Urinary bladder

Respiratory problems: Chronic obstructive pulmonary disease (COPD), Chronic bronchitis, Emphysema, Pneumonia, Influenza (the "flu") and common cold

Effects in pregnancy: low birth weight babies, stillbirth-Sudden Infant Death Syndrome (SIDS), greater risk of miscarriages, Nursing mothers can pass along harmful chemicals from cigarettes to their babies in breast milk and congenital defects such as cleft lip and palate in children

Gastrointestinal effects: Peptic ulcers heal less rapidly in smokers and are more likely to recur and chronic bowel disease (Crohn's disease).

Bones and joints: osteoporosis - exceptionally high risk for developing, rheumatoid arthritis, degenerative disorders and injuries in the spine.

Green tobacco sickness. (GTS): an occupational illness among workers engaged in tobacco cultivation

Other effects: Sleep disturbance, Cataracts, Thyroid disease (graves' disease), Macular degeneration, an age-related eye disorder. Pale and unhealthy skin: due to restricted blood vessels - decreases oxygen and nutrients, Greater risk of injury and slower healing time- due to decrease in the body's ability to produce collagen .On average, adults who smoke die 14 years earlier than non-smokers.

Effects of Second hand smoke (Environmental tobacco smoke, ETS) [World Health Organization, 2008]

- Risk of developing heart disease by 25 to 30 percent and lung cancer by 20 to 30 percent.
- Respiratory problems, reduced lung function and respiratory infections, including pneumonia and bronchitis, in both adults and children.
- Children exposed to ETS are at an increased risk, ear problems, and severe asthma.
- Furthermore, children who grow up with parents who smoke are more likely to become smokers, thus placing themselves (and their future families) at risk for the same health problems as their parents when they become adults.

Oral effects of tobacco abuse (ASH Briefing report, 2014; Maxillofacial Center, 2014; World Health Organization, 2014):

1. Precancerous lesions: Leukoplakia. Erythroplakia, Nicotine palatinus (stomatitis), Smokeless tobacco keratosis, Smoker's melanosis

2. Precancerous conditions: Submucous fibrosis, Oral lichen planus

3. Oral cancer: Squamous cell carcinoma, Verrucous carcinoma

5. Gingival & Alveolar Bone Damage: Gingivitis, Periodontitis, Acute necrotizing ulcerative gingivitis (ANUG), Delayed alveolar wound healing.

6. Teeth damage: Dental caries, Attrition, Erosion and extrinsic stains

7. Alteration of local physiology & microbiology: Diminished blood flow, Poor periodontal attachment, Increased salivary flow, Reduces the overall concentration of bacteria in the mouth,

8. Others: Candidiasis, median rhomboid glossitis, Sinusitis, Altered taste and Halitosis.

Aetiopathogenesis: (ASH Briefing report, 2014; Maxillofacial Center, 2014): When combined with heavy alcohol consumption has been identified as the primary risk factor for approximately 80% of oral malignancies. After giving up tobacco for a decade or so the risk of oral cancer of a past smoker drops significantly to levels almost comparable to never smokers. Smoking patients show reduction of inflammatory clinical signs associated with local vasoconstriction from nicotine, influence on vasculature and cellular metabolism. Pathogenesis of periodontitis in smokers could be linked to defects in neutrophil function, impaired serum antibody responses to periodontal pathogens and potentially diminished gingival fibroblast function suggesting altered host response and susceptibility and Reduced oxygen in the periodontal tissues Among smokers, more patients remain culture positive for periodontal pathogens after therapy. This may contribute to the often observed unfavorable treatment results among non-compliant smokers.

DIAGNOSIS

Detection of tobacco consumption is mostly based on:

Social History: Questions on type of tobacco habit, daily frequency and duration of use and age of commencement. Current smokers could be regular or occasional smokers, regular being daily smokers.

Tobacco handling can usually be seen on heavily Smoking Patient's:

- Fingers
- Oral mucosa, teeth and dorsal tongue.
- Bad breath can also highlight a smoker.

Validation of Smoking:

- carbon monoxide breath test
- by measuring salivary, urine or serum nicotinine (metabolite of nicotine)

Level of Dependence to Tobacco: Assessed using the Fagerström test [Lim KH et al., 2012]

Level of dependence	Description
High	Use tobacco within 30 mins of waking up or uses 25 or more times per day
Moderate	Use tobacco more than 30 mins of waking up or less than 25 times per day.
Low	No use tobacco before 30 mins of waking up and less 25 or more times per day

Types of smokers: (Lim KH et al., 2012)

- **Chain smoker** – non-stop smoker who lights his next cigarette with what the cigarette he is presently smoking (quantity estimated is more than 3 packs per day)
- **Heavy Smoker** –who can consume about 2-3 packs per day
- **Moderate Smoker** -smokes between 1-2 packs per day
- **Light Smoker** - smokes 1/2 to 1 pack per day
- **Casual Smoker** – smokes only to socialize with friends

TREATMENT AND INTERVENTIONS [Soben Peter, 1999; World Health Organization, 2014]

The "5 A's" Model for counseling intervention:

1. **Ask** about tobacco use - every patient/every visit
2. **Assess** willingness to make a quit attempt
3. **Advice** (those willing) to quit tobacco use. Those unwilling will need motivation to return to the topic at a later time
4. **Assist** in quit attempt - set a quit date, emphasize total abstinence, prompt support seeking, provide supplementary material and recommend pharmacotherapy
5. **Arrange** follow up and refer to a specialist clinic if the quit attempt has failed.

Behavioral Strategies (Avoiding Stimuli that Trigger Smoking) (Drug Facts, 2014):

Stress: Anticipate future challenges and develop substitutes for tobacco.

Alcohol: Limit or abstain during early stages of quitting.

Other tobacco users

- Stay away
- Ask for cooperation from family and friends.

Oral gratification needs:

- Use substitutes: water, sugar-free chewing gum or hard candies.
- Automatic smoking routines.
- Anticipate routines and develop alternative plans, e.g., with morning coffee.
- Weight gain after cessation.
- Anticipate; use gum or bupropion
- exercise
- Cravings
- Distractive thinking; change activities

Nicotine withdrawal: the 4 'D's [Drug Facts, 2014]:

- Delay acting on the urge to smoke
- Drink water slowly
- Deep breath
- Do something else (eg. exercise)

Pharmacotherapy: Nicotine replacement therapies: (Drug Facts 2014; Stead LF et al., 2012):

- Nicotine patches
- Nicotine gum
- Nicotine lozenge
- Nicotine inhaler
- Nicotine nasal spray

NicVax – vaccination for tobacco cessation. [Drug Facts, 2014]

Mechanism of action: Targets nicotine in the bloodstream, blocking its access to the brain and thereby preventing its reinforcing effects. It is now being evaluated in Phase III clinical trials.

Potential Health Benefits of Smoking Cessation: [World Health Organization, 2014; Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India, 2005]

20 min-Blood Pressure, Heart Rate, Peripheral circulation improve

24 hrs-Carbon monoxide levels drop

48 hrs- Nicotine eliminated; taste and smell improve

2-12 wks-Lung function can improve up to 30%

3-9 months - Coughing decrease

1 yr-Risk of Myocardial Infarction (MI) reduced to 50%

10 yrs-Risk of lung cancer reduced to 50%

15 yrs-Risk of MI and stroke reduce to level of nonsmoker

Counseling for those unwilling to quit: 5 'R's **[World Health Organization, 2014]:**

- Relevance of quitting
- Risk of continuing tobacco use
- Rewards of quitting
- Roadblocks of quitting
- Repeat these at each visit

Centre of Disease Control [CDC] also promotes MPOWER, a package of six proven strategies identified by the World Health Organization that can help reduce tobacco use and tobacco-related illness and death.

(MPOWER World Health Organization Report, 2008, Centre of Disease Control 2011)

- ✓ **M**onitor tobacco use and prevention policies.
- ✓ **P**rotect people from tobacco smoke.
- ✓ **O**ffer help to quit tobacco use.
- ✓ **W**arn about the dangers of tobacco.
- ✓ **E**nforce bans on tobacco advertising, promotion, and sponsorship.
- ✓ **R**aise taxes on tobacco.

Global initiatives for tobacco control:

- ➢ WHO Framework convention on tobacco control.
- ➢ WHO Tobacco free initiatives.
- ➢ Bloomberg initiative to reduce tobacco use.
- ➢ The create declaration on oral cancer prevention 2005

Role of oral health professionals:

- Especially concerned about the adverse effects in the oropharyngeal area of the body that are caused by tobacco practices.
- Access to children, youths and their caregivers, thus providing opportunities to influence individuals to avoid completely, postpone initiation or quit using tobacco before they become strongly dependent.
- More time with patients than many other clinicians, providing opportunities to integrate education and intervention methods into practice.
- Often treat women of childbearing age, thus are able to inform such patients about the potential harm to their babies from tobacco use.
- They are as effective as other clinicians in helping tobacco users quit and results are improved when more than one discipline assists individuals during the quitting process.
- They can build their patient's interest in discontinuing tobacco use by showing actual tobacco effects in the mouth.

At community level (Murthy P, Saddichha S, 2010**)**

Public education:

- Display of educational materials on anti-tobacco
- Dental organizations can recommend policies to government..
- Link up with government and NGO's to promote awareness in schools, colleges etc
- Keep them informed through professional publications on the latest scientific information.

Media advocacy:

- Write articles in newspaper and magazines.
- Participate in talk shows on television and radio.
- Bring in limelight success stories of tobacco cessation

At state level and national level (Murthy P, Saddichha S, 2010**):**

Making the professions and dental facilities tobacco-free.

- Prepare a 'code of practice on tobacco control for dentist and promote tobacco-free profession.
- Emphasize the need of tobacco related info in UG and PG curriculum.
- Tobacco free conference and events organized by dental professionals
- Avoid sponsorship from tobacco companies.
- Anti-tobacco slogans on item of stationeries used in healthcare facilities.
- Raise issues of litigation against tobacco industry.

Advocacy with state and national governments. **[**Murthy P, Saddichha S, 2010**]**

Advocate for the inclusion of tobacco cessation in National Rural Health Misson, National cancer control program and DOTS programme.

- Join hands with civil society to develop a state and national plan on tobacco cessation.
- Lobby with govt. to set up community based tobacco cessation programmes.
- Request government to appoint nodal officers at district/state level for tobacco control
- Bringing both pharmacotherapy and counseling under the national health insurance umbrella

Battle for tobacco control—the India experience Legislation and enforcement (Kaur J, Jain DC, 2011):

- **1975** - Government of India enacted the Cigarettes Act.
- Mandatory to display a statutory health warning on all packages and advertisements of cigarettes.
- **1980s and 1990s**- the Central and State Governments imposed further restrictions on tobacco trade through Prevention of Food Adulteration Act (PFA) 1990 and Drug and Cosmetic Act 1940.

- **April 2003**- The Indian Parliament passed the 'Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Bill, 2003.
- **2nd October 2008** - Revised Smoke-free -Rules came into effect.
- **31st May 2009** - Pictorial warnings on tobacco products packages was implemented.

Who framework convention on tobacco control (FCTC) and its implications for india (r.c. jiloha, 2010):

Framework for National Action:

- Comprehensive ban on advertising
- Protection against second-hand smoke
- Prohibition of youth access
- Prominent health warnings
- Testing and regulation of contents
- Increase in tobacco taxes
- Cessation programmes
- Alternative crops
- Surveillance

Framework for International Cooperation

- Ban on cross-border advertising
- Prevention of illicit trade
- Scientific and legal cooperation
- Technical assistance
- Financial support for FCTC implementation (bilateral and multilateral channels)
- Monitoring

Litigations at state level

- In 1996, **Delhi** Prohibition of Smoking and Non-Smokers Health Protection Act was passed. This act prohibited sale of cigarettes 100 meters from the school building and to minors. The offender was fined a sum of rupees 100.
- **Kerala** High Court in1999, prohibited smoking in public places, including parks and highways.
- **Goa** banned smoking in public places through anti-tobacco legislation.
- For the past three years, **Tamil Nadu and Andhra Pradesh** have banned the marketing and sales of gutkha.

Civil society's initiatives: An important role in tobacco control

- Advocate for regulating tobacco products,
- Raise awareness among the masses,
- Demand regulation and litigate against other issues related to tobacco.

Some of NGO'S in India are:

- **Action Council against Tobacco (ACT).**
- **Green motherland,**
- **Health Related Information Dissemination Amongst Youth-Students Health Action**
- **Network (HRIDAY-SHAN),**
- **Voluntary health Association of India (VHAI)**

Cessation centres in India:(Murthy P, Saddichha S, 2010**)** Nineteen (19) Tobacco Cessation Centres (TCCs) in different states eg: Maharashtra, Assam, Andhra Pradesh, Chandigarh. Function under the District Tobacco Control Cell and comprise cancer treatment centres, psychiatric centres, medical colleges and NGOs.

WORLD NO TOBACCO DAY - 31ST MAY

- World Health Assembly created World No Tobacco Day in 1987.
- To draw global attention to the tobacco epidemic and its lethal effects.
- It provides an opportunity to highlight specific tobacco control messages.

CONCLUSION

Humans have used tobacco for 1000 years. Tobacco, in its various forms has provided powerful and immediate satisfaction to its users. These gratifications are pharmacological, psychological, emotional and social in nature. Once introduced, its use seldom has been eliminated even by legal or religious prescription. The use of tobacco kills millions of people and ruins the health of millions more. Clearly, preventing the use of tobacco in various forms as well as treating nicotine addiction is the major concerns of dentists and physicians. Today, we the members of the health profession along with policy makers should help in achievement of a smoke-free society so that we can protect the health of the coming generations.

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