Tobacco use and smoking is a leading preventable cause of death both in India and the World. It is not only tobacco related products alone, but also local Indian products like bidis, gutkas, pan masalas, which are the culprits. Bidis are Indian cigarettes, wrapped in tendu or temburini leaf and secured with a string at one end of the cigarette. This relatively small tobacco product provides a powerful dose of chemicals. Bidis contain more than three times the amount of nicotine and more than five times the amount of tar than regular cigarette smoke. Bidis come in flavored varieties such as strawberry, chocolate, and mango and are subject to complaints by those who believe makers of bidis are trying to appeal to a young audience.1

Nicotine is one of more than 4,000 chemicals found in tobacco smoke and is the primary component that acts on the brain. Smokeless tobacco products such as snuff and chewing tobacco also contain high levels of nicotine as well as other toxins. Nicotine is absorbed through the skin and mucosal lining of the mouth and nose or by inhalation into the lungs. Depending on how the tobacco is taken, nicotine can reach peak levels in the bloodstream and brain rapidly. Cigarette smoking, for example, results in rapid distribution of nicotine throughout the body, reaching the brain within 10 seconds of inhalation. Cigar and pipe smokers, on the other hand, typically do not inhale the smoke, so nicotine is absorbed more slowly through the mucosal membranes of their mouths, the same as for smokeless tobacco. 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 to the brain each day. These factors contribute considerably to nicotine's highly addictive nature.

Even smokeless tobacco is dangerous. The consequences of using smokeless tobacco include lung, larynx, esopghaeal, and mouth cancer. Smokeless tobacco products such as snuff and chewing tobacco are not more safe than cigarettes: they contain many toxins and high levels of nicotine that are readily absorbed through the skin and mucosal lining of the mouth.1 In a TIFR study from Mumbai, smokeless tobacco use during pregnancy increases stillbirth risk, with a risk at least as great as that associated with maternal cigarette smoking.2

The top five tobacco producers forecast for 2004 are China (2.01 million metric tones; 35.1%), Brazil (757 thousand metric tones; 13.2%), India (598 thousand metric tones; 10.4%), United States (358 thousand metric tones; 6.2%), and Malawi (138 thousand metric tones; 2.4%). Together, these five countries account for two-thirds of worldwide tobacco production. Tobacco farming presents several hazards to those who cultivate and harvest the plant. Although some of these hazards, such as pesticide exposure and musculoskeletal trauma, are faced by workers in other types of agricultural production, tobacco production presents some unique hazards, most notably acute nicotine poisoning, a condition also known as green tobacco sickness (GTS).3

With a population of more than one billion, India has been a major target of the multinational cigarette companies. India is a major player in the international tobacco market. It is the world’s third largest producer of tobacco and the eighth largest exporter, responsible for around 6% of the world trade in tobacco. In 1997, India cultivated over one million acres of tobacco, producing 604,500 metric tones, a 2% increase over 1995. Around 70% of this was used in the production of bidis and other non-cigarette tobacco products. Tobacco exports, meanwhile, have been booming in recent years, reaching 115,000 metric tones in 1997, a 48% increase from 1995. The bulk of these exports are going to the countries of the former Soviet Union where the multinational tobacco firms, engaged in a massive build-up there, have come to rely on India as a source of cheap "filler" tobacco.4

Cigarette smoking is responsible for more than 400,000 deaths each year, or one in every five deaths. Additionally, if current patterns of smoking persist, over 5 million people currently younger than 18 will die prematurely from a tobacco-related disease. Paralleling this enormous health toll is the economic burden of tobacco use: more than $75 billion in medical expenditures and another $80 billion in indirect costs.1

The bidi industry remains the largest manufacturer of tobacco products in India. Bidis are hand-rolled by

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more than 4 million poor people who work out of their homes. Child labour in the bidi industry is common. In recent years, a type of chewing tobacco called “pan masala” has also become extremely popular. This chew mixture contains tobacco, areca nut and flavored additives. It is sold in small packages that may costs less than a rupee, cheap enough for even school children to buy. Cigarette consumption currently represents less than 20% of tobacco consumption, but is expected to rise to around 33% in the next 10 years. Although bides and chewing tobacco remain popular among the poor due to their low cost, the cigarette companies have been engaged in an aggressive campaign to convert India’s 250 million tobacco users and entice the young to take up the habit.

The Indian government has banned smoking in hospitals, government offices, schools and on some domestic transport, and requires health warnings on all cigarette packages. They have launched a media campaign that “Smoking Kills”. Because of the high incidence of oral cancer, the government is currently discussing a ban on chewing tobacco after some recent surveys among school children in Bombay showed that 12-18% of high school students were addicted to pan masala. In some states like Maharashtra, it is already banned. Manufacturers on the other hand contend that this is merely a ruse being pushed by the multinational tobacco companies wishing to capture the Indian market.

The epidemic of tobacco use is shifting from developed countries, including India, where increased use is expected to result in a large disease burden in the future. Changes in prevalence of tobacco use in adolescents are important to monitor, since increased use by young people might be a precursor to increased rates of smoking in the population.

A 10-city survey of over 9,000 students between the ages of 13 and 17 showed that after seeing the Wills World cup Cricket Series, 13% felt a desire to smoke. The survey also showed that 72% thought that there was at least one smoker on the Indian Cricket Team which played in the 1996 World Cup. A previous study published in the British Medical Journal, showed similar results. It concluded that cigarette company sponsorship of the India-New Zealand cricket series in 1995 had a significant impact on kids who watched it on television. The advertising created the impression among the 1,948 children aged 13-16 years who participated in the survey that “smoking gives more strength, improves batting and fielding and ultimately increases the chance of winning”.

In the MYRTI project in Delhi and Chennai urban Indian 6th graders may be using more tobacco than urban Indian 8th graders. Almost all psychosocial factors were significantly related to tobacco use, for students in both grades. Some of the strongest correlates included social susceptibility to and social norms about use. Exposure to tobacco advertising was a strong correlate of tobacco use for 6th graders, but not for 8th graders. The “risk profile” of 6th graders suggests they would be vulnerable to use and to begin using tobacco, as well as to outside influences that may encourage use.

The habit of tobacco use is typically related to peer pressure and adolescent age. In developed countries, the habit usually starts in the early teens in both boys and girls and stabilizes to adult levels by the late teens. Center for Disease Control and Prevention (CDC) in the United States (USA) has reported that there is a significant increase in the percentage of high school students that reported current cigarette smoking from 27.5% in the year 1991 to 34.8% in 1999. The Global Tobacco Youth Study (GTYS) reported that smoking is the predominant form of tobacco use among adolescent children in developed countries while smoking as well as use of smokeless tobacco is equally prevalent among the youth in developing countries. The GTYS included data from 12 countries and 17 sites in Asia: (China, Fiji, Jordan, Sri Lanka), Africa (South Africa, Zimbabwe), Europe (Poland, Russian Federation, Ukraine) and Central (Costa Rica, Barbados) and South America (Venezuela). The current tobacco use varied from a low of 8.6% in Shandong, China to 35.1% in Moscow and smoking prevalence varied from a low of 2.4% in Shandong to 33.9% in Kiev, Ukraine.

The prevalence of smoking and tobacco use in India has been reported in the last decade. Gajalakshmi et al summarised the Indian data and reported a variable prevalence of tobacco use in the country depending upon local customs and religion. In adults aged ≥15 years prevalence was reported as 21% for cigarette smoking and 21% for bidi. In Rajasthan, Gupta et al reported prevalence of smoking or tobacco use of 51% in rural men, 5% in rural women, 39% in urban men and 19% in urban women while Venkat Narayan et al reported smoking prevalence of 45% in men and 7% in women in Delhi. In Mumbai, Gupta et al reported current tobacco use in 69% men (smokers 23.6%) and 57% women.

In the current issue from Jaipur schools Singh and Gupta report a low prevalence of smoking and tobacco use. However in urban cities like Mumbai and Delhi the figure could be much more different. It is also heartening to know that harmful effects of tobacco are well known to them. Vaidya et al reported tobacco use in 13.4% boys and 9.5% girls among school children in Goa. Jayant et al conducted a study in 1278 boys and 353 girls studying in different types of schools in Bombay and reported tobacco use in 22.5% children in private English-medium schools, 6.9% in private Indian language schools and 13.8% in municipal schools. George et al reported the habit in 146 children in a poor coastal community in Kerala and reported tobacco-chewing in
In children the main influences in smoking initiation are environmental factors and personal characteristics. The study reported by Gupta and Singh in this issue of JAPI showed that tobacco use is significantly more in children when its use is present in a family member. Exposure to advertisements was very high in these children and most of them remembered seeing a tobacco advertisement in a newspaper or a magazine. This can have both a negative and positive effect. More studies are required to exactly determine both positive and negative determinants of smoking and tobacco use among the children in India and other developing countries. It is time to wake up and save an vulnerable children from the ravages of tobacco and smoking.

REFERENCES


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