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COMMITTEE ON SUBORDINATE LEGISLATION

(TENTH LOK SABHA)

TWENTY-SECOND REPORT

[Rules/Regulations Framed under the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975]

[Presented on 22nd December, 1995]

LOK SABHA SECRETARIAT
NEW DELHI

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* Nominated w.e.f. 9.8.1995.

INTRODUCTION

I, the Chairman, Committee on Subordinate Legislation having been authorised by the Committee to submit the report on their behalf, present this Twentieth[9] Report on "Rules/Regulations framed under the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975".

2. The matters covered by this Report were considered by the Committee at their sittings held on 3 May, 24 May, 19 June, 17 July, 29 November and 5 December, 1995.

3. The Committee took oral evidence of the Ministry of Health and Family Welfare; The Indian Council for Medical Research; The Indian Cancer Institute; Ministry of Information and Broadcasting; Ministry of Human Resource Development; All India Bidi, Cigar and Tobacco Workers' Federation; The Godawari Tobacco Growers Association; National Council for Educational Research and Training; Ministry of Agriculture (Department of Agriculture and Cooperation) alongwith the Indian Council for Agricultural Research; Ministry of Commerce and Tobacco Board; Indian Tobacco Institute and Central Trade Unions to have an indepth study of the subject matter and to arrive at proper conclusions. Three Members of Parliament *viz.* S/Shri K.V.R. Choudhary, Lal Jan Basha and Dr. U. Venkateswarlu also appeared before the Committee on behalf of the tobacco growers and placed their view-point.

4. The Committee wish to express their thanks to the representatives of the Ministry of Health and Family Welfare; Indian Council for Medical Research; Indian Cancer Society; Ministry of Information and Broadcasting; Ministry of Human Resource Development; All India Bidi, Cigar and Tobacco Workers' Federation; The Godavari Tobacco Growers Association; National Council for Educational Research; Ministry of Agriculture (Department of Agriculture and Cooperation) along with Indian Council for Agricultural Research; Ministry of Commerce and Tobacco Board; Indian Tobacco Institute; Central Trade Unions and Members of Parliament who appeared before the Committee on behalf of the tobacco growers.

5. The Committee also wish to express their thanks to various governmental as well as non-governmental organisations (please see Appendix IV) who have furnished their valuable comments/suggestions to the Committee on the subject matter.

6. The views expressed by the aforesaid representatives of various Ministries/Departments of the Government of India and non-governmental organisations as well as comments/suggestions received from various experts/organisations are dealt with in the following paragraphs.

7. The Committee considered and adopted this Report at their sitting held on 5 December, 1995. The Minutes of the sittings relevant to this Report are appended to it.

8. For facility of reference and convenience, recommendations/observations of the Committee have been printed in thick type in the body of the Report and have also been reproduced in a consolidated form in Appendix I to the Report.

NEW DELHI;
December, 1995

AMAL DATTA,
Chairman,
Committee on Subordinate Legislation.

REPORT

I

STATUTORY WARNING ON TOBACCO PRODUCTS

Under Section 3 of the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975 a statutory warning is displayed on the cigarette packets namely, "Cigarett smoking is injurious to health". This statutory warning is intended to caution to people about the health hazard smoking. So the Committee wanted to find out whether thi warning has been effective in making the people aware of the serious health hazards of smoking also to exmaine the possibility of using more effective warning. In this contedt the warnings displayed on cigarette packets in a number of western countries were placed before the Committee. The committee was also informed that in some of these countries the warnings are rotated after a certain period to avoid the monotony of the same being repeated again and again as well as to ensure that different aspects of health hazards are brought out more fully and awareness of smokers increased. It was also brought before the Committee that in some of these countries apart from the written warnings, certain symbols are also used to convey the message to the public.

1.2 The Committee also examined the question whether the statutory warnings are being displayed in regional languages too, as required by the statute itself.

1.3 For this purpose the Committee invited comments/suggestions from various governmental as well as non-government organisations/experts engaged in this field. In addition, the Committee also heard the views of the representatives of various Ministries of the Government of India and also some non-governmental organisations engaged in this field.

1.4 The Committee received comments/suggestions from a number of experts/organisations* engaged in the control of tobacco use. The Committee found that all of them have agreed that the existing statutory warning 'Cigarette smoking is injurious to health' printed on the cigarette packets has not made any appreciable impact on the smoking habits of people atleast in the past because of lack of prominence of the workds constituting the warning which appear in extremely small letters whether on Cigarettee packets or on display advertisements. Most of them have advocated the use of strong rotating health warnings; pictorial depiction of health

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* Please *see* Appendix IV.

warnings; extention of health warnings to beedi and all tobacco products; health warnings in local alnguages; indication of nicotine and tar contents on the package; etc.

1.5 On 3 May, 1995, the representatives of the Ministry of Health and Family Welfare (Department of Health) and the Indian Council of Medical Research appeared before the Committee to give their views on the subject.

1.6 Shri I. Chaudhuri, Additional Secretary, Health Ministry admitted that the present health warning on cigarette packets has not proved effective. He suggested that a system of rotational warning prevalent in some countries like Iceland and Sweden where constantly new messages are given every month as health warnings, may be introduced in our country. The vitness agreed to the suggestion of the Committee that beedi should also be brought under the ambit of health warning requirement. The witnesses also reacted the view of the Committee that the health warnings on cigarette packets be written in English only and not in regional languages. As a result, the non-english knowing smokers cannot read them. In any case, illiterate smokers do not have any awareness of the health warning.

1.7 Dr. G.V. Satyawati, Director-General, Indian Council of Medical Research was of the view that in the advertisements, the warning is normally written in a corner and that too in such a way that the real message obscured. She however, stated that the size of the warning is not as much important as the main message carried by the health warning.

1.8 Shri K.K. Mehta, Vice-President, Indian Cancer Society (Delhi Branch) who appeared before the Committee on 24 May, 1995 to give his views on the subject, also agreed that the existing statutory warning has absolutely no effect on the smokers and is completely inadequate. According to him, the warning should be in simple vordings and prominently visible. He was of the opinion that the statutory warning should cover beedi also. He further stated that warning should be strong and direct such as 'it is poisonous or it is a killer' or that 'it may lead to cancer or death' to really put a fear in the minds of the people. He suggested that symbols/pictorial depicition may also be used for the purpose. He further expressed the view that warning should be prominently displayed in all the shops which are selling the cigarettes. Shri Mehta also suggested that nicotine/tar contents should also be indicated on the packets so that people become aware of the presence of these harmful substances.

1.9 After carefully considering the comments/suggestions received from various experts/organisations engaged in tobacco control and taking into account the views expressed by various officials/non-officials, the Committee come to the conclusion that the existing provisions regarding statutory warning on cigarette packets under the Cigarettes (Regulation of Produc-

tion, Supply and Distribution) Act*, 1975 have not proved effective in achieving the desired goal i.e. to make the smoking aware of the health hazards of smoking so that they would quit this habit. The Committee further observe that the existing health warning on cigarette packets is written in English and not in any other regional language. As a result the illiterate people or those who do not know know English just do not get this message. The Committee further observe that the existing warning has become too monotonous to catch the attention of the people. Further, the warning is written in too small letters to be conspicuous, and is displayed only on one side of the cigarette packet. The Committee also observe that the size of the letters of the warning are much smaller than that of brand name of the cigarettes.

1.10 The Committee also observe that in our country, a majority of population particularly in the rural areas smoke 'Beedis'. The Committee have been told by experts that beedi is more harmful than cigarettes. But beedi has been kept out of the purview of the Act and so there is no statutory requirement of a health warning on beedi packets to the effect that smoking beedis is a health hazard.

1.11 The Committee further observe that Cigarettes/Beedis contain tobacco which contains harmful substances like nicotine and tar but the smokers are not aware of the presence of these harmful substances as nothing is written or indicated on the packets of Cigarettes/Beedis to this effect. Further, no limit has been prescribed with regard to the quantity of nicotine and tar contents in the tobacco used in the Beedis and Cigarettes.

1.12 The Committee therefore recommend as follows:—

(1) The statutory warnings shold contain strong wordings like 'smoking kills you' or 'smoking causes lung cancer' etc. A variety of such warnings should be devised and should be rotated periodically (say every month) on the cigarette packets so that these are effectively able to catch the attention of the smokers, as is the practice being followed by countries like Sweden and Iceland (see Appendix-V). The Committee feel that such system of warnings would largely solve the problem of ineffectiveness of a single warning, which becomes too familiar and monotonous.

(2) Health warnings should be made furthe effective by using symbols and pictorial depictions. A variety of such effective symbols/pictures could be devised as in the case of Sweden. Such pictorial representations would also take care of illiterate smokers who at present are unable to read the health warning. Such pictures should be depicted as a supplement to the strongly worded rotating health warnings.

(3) The health warnings as suggested in the case of cigarettes should

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* *See* Appendix III.

be extended to cover 'beedi' also which is very popular in our country and particularly in the rural areas. This is essential because 'beedi' is even more harmful than the cigarettes due to the presence of higher content of the toxin like nicotine and tar. From the expert opinion* of the Indian Council of Medical Research on the harmful effects of Beedi smoking, it has been found that beedi smoking is more hazardous than Cigarette smoking due to the higher content of tar and nicotine which ranges from 44.9 to 51.4 mg. and 1.71 mg. respectively. It has also been found that carbon monoxide yield is higher in beedi than in cigarette smoke partly because the tendu leaf in which the tobacco is wrapped is less porous than paper. The warnings should also cover Cigars and Cheroots.

(4) Since tobacco consumption in any form is injurious to health, it should be made legally mandatory to carry health warnings on all tabacco products like Pan Masala, tooth paste, tooth powder, creamy snuff, Gutkha, cut tobacco, chewing tobacco, snuff of tobacco etc.

(5) The health warings should be printed in regional languages also in addition to the existing practice of being written in English only. In this manner, the persons not knowing English would also be able to get the message conveyed by such health warnings.

(6) The size of the health warnings should be as large as the brand name of the tabacco products and the warnings should be prominently displayed on both sides of the package.

(7) Printing the tar and nicotine levels on packets and cartons of all tobacco products and fixing the maximum permissible limits on the use of these toxins for cigarettes/beedi's and other harmful tobacco products should be made compulsory.

(8) A large number of smokers buy cigarettes in loose form. Single cigarette does not have any warning written on it thus the buyers of lose cigarette are not exposed to the health warning. This is a serious lacuna. The Committee feel that single cigarette should also contain the health warning either in the written form or by symbols like skull and cross bones or any other suitable symbol.

Similarly, health warnings hould be displayed prominently at every shop where cigarette, beedi or other tobacco products are sold. These warnings should be in the respective regional languages and their display should be made compulsory under the law.

(9) An important aspect of smoking or tobacco use/consumption in any form is that use of tobacco is habit forming and people should therefore be cautioned about it. Therefore, the health warning must include the message that "use of tobacco smoking is habit forming."

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* For details, please see Appendix-VI

(10) The Cigarettes and oter tobacco products imported in our country must be required to meet the statutory requirements regarding health warning in our country.

1.13 The Committee desire that the Government should bring suitable legislation at the earliest incorporating the aforesaid recommendations of the Committee.

II

BAN ON ADVERTISING

In terms of Section 5 of the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975, the provisions regarding Restrictions on Advertisements on Cigarettes are as under:—

"5. (1) No person shall advertise for distribution, sale or supply of cigarettes, and no person shall take part in the publication of any such advertisement, unless the specified warning is included in such advertisement.

(2) Every specified warning included in an advertisement shall be conspicuous, legible and prominent.

(3) No person shall, whether directly or indirectly, import, for the purpose of carrying on any trade on commerce in cigarettes, any document, article or thing, containing any advertisement which violates the provisions contained in sub-section (1) or sub-section (2)."

2.2 It is felt that the existing provision regarding restrictions on advertisements of cigarettes have proved ineffective and insufficient. Even though there is a complete ban on advertisement in the A.I.R. or the Doordarshan, it is however seen that video-films/Newspapers/magazines etc. are generally flooded with cigarette advertisements, and that too depicting smoking in a very glamorous manner. It is seen that such advertising associate cigarette smoking with youth, sports, newspapers, magazines, video-film beauty in nature and sex, which have the effect of creating an illusion that smoking is a pleasurable and sophisticated activity as well as helpful in achieving success in various fields. A tobacco promotion technique that is becoming increasingly useful to the industry is the sponsorship of sports and cultural events. These activities give the tobacco industry much high profile visibility. Numerous advertising and promotional activities are undertaken by the tobacco companies. The industry claims that the purpose of advertising is to maintain brand loyalty and to achieve brand switches among smokers, rather than to induce nonsmokers to start, or current smokers to increase consumption. However, it is a fact that advertisement has become one of the strongest inducement to smoking, especially for beginning it and therefore, a ban on advertising will be an important milestone in tobacco control. In the Committee's view the Industry's claim that advertising does not increase tobacco consumption and that they are only promoting particular brand among existing smokers, is wrong and grossly misleading.

2.3 In this connection, Committee wanted to know the views of the representatives of the Ministry of Health and Family Welfare, Indian Council of Medical Research, Indian Cancer Society, New Delhi, Ministry of Human Resource Development (Department of Education) and the Ministry of Information and Broadcasting regarding a ban on advertisements of cigarettes/Beedies and tobacco products.

2.4 Dr. G.V. Satyawati, Director-General, ICMR was of the view that the existing warning in advertisements in written in such a way that the real message takes a back stage and gets lost sight of as the advertisement is portrayed in a glamorous manner whereas the warning is written in a small letters in a corner. In this regard the ICMR sometime back had carried out a study several places regarding of profile of an individual who is likely to become an addict or who is likely to pick up the habit of smoking. The study at Goa specifically showed that a person who is likely to become a tobacco addict is a young illiterate adult or an illiterate adolescent. Adolescence is the period when a person gets easily influenced by the various types of advertisements on tobacco. The advertisements are so shown that the young people also start feeling like adults by smoking or chewing tabacco. Therefore, he picks up the habit. Dr. Satyawati was also of the view that the advertisements are planned by professionals in such a manner that they attract the attention of the propulation whether it is tobacco chewing or smoking or some other use. For the youth, the advertisements in the print media have now been further reinforced by those of the electronic media. In some films, a hero rescuing the heroine with a cigarette in his mouth is shown and he also feels tempted to smoke ina mood to emulate the hero.

2.5 Shri K.K. Mehta, Vice-President of the Indian Cancer Society (Delhi Branch) also strongly expressed himself against all such advertisements. He informed the Committee that the practice of sports events, being sponsored by cigarette companies should be discouraged any any cost because the after effect of accepting sponsorship from them by way of increase in smoking is more greater. Shri Mehta also stated that demand for cigarette is increasing and that the element of fashion is responsible for it which is created by advertisements and programmes of contest in which the actors and actresses are shown smoking cigarettes and comenting that smoking is good.

2.6 Another question considered by the Committee was whether there could ba complete ban on advertisement of smoking in films, videos etc. Shir Bhaskar Ghose, Secretary, Ministry of Information and Broadcasting stated before the Committee that standing instructions had been issued in

1991 not to show programmes depicting smoking on Doordarshan. He said that these instructions have been sent to all Kendras of Dooradarshan and are being reiterated. He informed the Committee that there is some problem with regard to cutting out the smoking scenes from old classical films which are shown by Doordarshan from time to time. In these films the main character are shown smoking which can't be avoided. The Secretary however, said thet the Ministry has decided to reduce the frequency of showing such films and show more films which do not contain smoking scenes. He further said that the Ministry is going to request the Central Board of films certification to provide in the guidelines that smoking scenes in films should be avoided. With regard to advertisements in video casettes for home viewing the Secretary, informed the Committee that they are being governed by the Cable Regulation Act, which prohibits advertisements of tobacco in video casettes and its violation will render the cable operators liable for prosecution. The said Act is being implemented in the States, and in order to enforce this Act effectively the State Government's machinery has to be activated, he said.

2.7 **The Committee take note of the fact that the law relating to the regulation of production, supply and distribution of Cigarettes was passed in 1975 but it has not been effectively enforced. The provision contained in section 5 of the Act specifyses the size and other main features of the statutory warning to be included inthe advertisement on smoking. But contrary to the statutory specification, the statutory warning is being printed in a very inconspicous manner. Thus there is a continuous violation of the main provisions of the law. The Committee regret to note that the Government has not shown enough will to enforce this law which was enacted by Parliament in order to make people aware of the health hazards involved in smoking so that they give up the habit of smoking. The Committee find that although the Ministry of Health and Family Welfare has made some efforts, there is not much co-orodination among various ministries which are concerned with this issue. As a result there is no clear-out policy with regard to banning advertisement on smoking. The Ministry of Information and Boradcasting, by its own admission, issued some guidelines only in 1991 about exhibiting smoking scenes in Programmes shown on T.V. It is very distressing to note that the Act was passed in 1975 and the Doordarshan took sixteen years to fomulate the policy and taken an elementary step in this regard. The Committee also note that the Central Board of Film Certification is yet to address itself on the question of banning smoking scenes in films, the Committee agree with the view of the exports from ICMR that glamorisation of smoking in cineme and othe visual programmes acts as a powerful inducement of youth of impressionable age to smoke.**

2.8 **It has been brought to the notice of the Committee that a lot of advertisements on cigarette are inserted in the video casettes and shown by the cable TV operators. The advertisements which are banned by**

Doordarshan find their place on the T.V. screens through these cassettes. The Committee has also been told that the Ministry of Information and Boradcasting has no control over it. It has been stated before the Committee by the representaive of the Ministry of Information and Broadcasting that the Cable Regualtion Act is in force now and the advertising guidelines framed under this Act apply to the cable operators, who can be prosecuted in case of violation of the guidelines. Under this Act, the State Governments are entrusted with the responsibility to enforce the regulations. The Committee find that the situation in this respect is indeed very bad. Further the Committee is of the view that the cable TV operators cannot be prosecuted for violation of guidelines merely in the absence of rules/ statutory provision.

2.9 The Committee take a serious view of the situation in regard to the enforcement of regulations in respect of statutory warning about smoking. The Committee express its unhappiness about the luck of seriousness on the part of the law enforcement authorities in enforcing the law which is in force since two decades. It has been brought to the notice of the Committee by representative of the Ministry of Health and Family Welfare that the Government proposes to bring before Parliament a comprehensive legislation to regulate the use of tobacco. While appreciating this move, the Committee desire that the Government should make provision in the proposed legislation for a total ban on all forms of advertisements on tobacco. The Committee also desire that the Government should make stringent penal provisions to effectively deal with violation of the law. The Committee is also of opinion that there should be a total ban on major sports events being sponsored by cigarette companies. The Committee desire that the Government should bring the proposed bill before Parliament before any further loss of time.

III

PROHIBITION OF TOBACCO SMOKING IN PUBLIC PLACES

There has been a widespread public demand that measures be taken to protect the interest of non-smoking people from the harmful effect of tobacco smoking by smokers close by. It was, therefore, felt that there is a need to safeguard the right of non-smokers by imposing a ban on smoking in public places.

3.2 The passive smoking or environmental tobacco smoke has now unequivocally been proved to be casuing lung cancer in non-smoking spouses, increased risk of breast cancer in women from the smoke of their spouse, increased respiratory illness in children. It is clear that risk of diseases due to inhalation of tobacco smoke is not limited to the individual who is smoking, but can extend to those also who passively inhale tobacco smoke emitted into the air.

3.3 It has been observed that in all the countries which have imposed restriction on smoking in public places, there has been a favourable response to the creation of non-smoking environment, reason being rights of non-smokers and behavioural responses to the climate of non-smoking. This has, therfore, been reflected in a widespread change in attitude as a result of which, a number of smokers have utlimately quit this habit of deference to the wishes of non-smokers.

3.4 The Committee, in its sitting heard the views of the governmental as well as non-governmental organisations on the question of how to protect the non-smokers from the hazards of passive smoking.

3.5 On being asked as to how could the right of non-smokers be protect opr ensured, Shri Choudhari, Additinal Secretary Secretary', Minsitry of Health and Family Welfare stated that "as of now" this is being done through administrative orders. However, a proposed comprehensive anti-tobacco legislation is being contemplated.

3.6 Dr. G.V, Satyawadi, Director General of the Indian Counci of Memdical Research stated that ban on use of tobacco has been proved successful only in a few sector like air-travel but so far there has been a total failure in other sectors like trains and buses.

3.7 Shri P.R. Dasgupta, OSD (Education) informed the Committee that in order to check tobacco smoking, the Department of Education had issued a circular to all the educatinal institutions to ban tobacco sale within 100 metres of the institutions. He further added that in addition, smoking within the premises either by vistor or by this effect has also been issued

by the Department of Kendriya Vidyalayas, Navodaya Vidyalayas and other institutions.

3.8 The Committee after considering the matter in detail feel that in order to protect the health interests of the non-smoking public from the hazards of passive smoking, there should be complete prohibition on smoking at least in all the public places where large number of people are expected to be present for long periods such as, hospitals, dispensaries and other health-care establishments, education institutions, Conference Halls, Cinema Halls, theatres, offices, all types of work places, waiting rooms in railway stations, etc. The Committee futher note that travellers face a lot of inconvenience besides being forced to inhale the smoke emitted by persons travelling in trains, buses and Air-flights. The Committee, therefore, recommend a complete ban on smoking in the public transport systems, the domestic air flights, government vehicles and public transport services.

3.9 The Committee desire that the Government should bring a suitable legislation in this regard to safeguard the interests of non-smokers. The Committee further desire that such legislation should also have proper penalty provisions to make the said legislation effective and purposeful. The Committee are of the view that once the smokers are stopped to smoke in public places, it may ultimately result in smokers quitting their smoking habit and there would be a considerable reduction in the number of smokers.

IV

(A) SOCIAL AWARENESS
(B) HEALTH EDUCATION
(C) ROLE OF ELECTRONIC MEDIA

There is a general impression that Smoking is becoming more popular amongst the younger generation. The two important factors that influence young people in acquiring the smoking habit are parental practices at home and 'peer habit' at school. It is, therefore, necessary to tackle the problem at these two level by parental and preceptor example and careful, well-studied and though provoking information at schools and colleges. There is a need for a coordinated, rational educational strategy to discourage the smoking habit in the youngsters at school as well as college level. The Committee therefore, in order to see whether the rules/regulations framed under the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975 were effective enough to make the smokers aware of the hazards of smoking, invited comments from various institutions like ICMR, WHO and also took oral evidence of the representatives of the Ministry of Health and Family Welfare, Ministry of Human Resources Development, Ministry of Information and Broadcasting, Indian Cancer Society, and Indian Council of Medical Research (ICMR) on the following aspects of the matter:—

A. PROMOTING SOCIAL AWARENESS

4.2 With regard to promoting social awareness about the hazards of Cigarette smoking, Dr. G.V. Satyawati Director-General ICMR stated that the ICMR in collaboration with All India Radio, carried out a programme called Radio-DATE on anti-smoking (Drug Alcohol Tobacco Education) which was broadcast by the All India Radio in 16 languages through 84 stations all over the country. This had proved effective. Similarly the Anti-tobacco community education was carried out at various places in the country. These were organised by school teachers, NGOs and Community volunteers. These campaigns resulted in significant reduction of tobacco users.

4.3 Shri K.K. Mehta, Vice-Chairman of the Indian Cancer Society (Delhi Branch) said that due to the campaigns creating awareness that tobacco smoking or tobacco chewing may cause lung cancer and oral cancer, many smokers and tobacco chewers have given up smoking and chewing tobacco in America. Such type of campaigns could also prove effective in this country too. Dr. C.R. Ramachandran, Senior Deputy Director General, ICMR stated that certain non-governmental

organisations are also working towards such mass awakening and have taken up the task of educating people about the harmful effects of tobacco in general. He also stated that ever since it had been pointed out that consumption of tobacco undoubtedly increases the possibility of lung cancer, educated people have stopped consuming tobacco.

4.4 On being asked whether there has been any education for children in schools and colleges or universities for promoting awareness on the ill-effects of smoking, Shri K.K. Mehta, Vice-President, Indian Cancer Society (Delhi Branch) said that they had been going to schools with children in the age group of 15 to 18 years as this is an impressionable age wherein to create awareness. If a peson starts smoking at this age he would continue it for years and if he does not inculcate this habit at that age he will never fall a victim to smoking. He futher added that video-films on the after-effects of smoking are being shown and that literature is being circulated in the schools and colleges. He also stated that the children have been asked to show this literature to their parents so as to make them aware of the serious health hazards of their smoking to their own family.

4.5 Shri Bhaskar Ghose, Secretary, Ministry of Information and Broadcasting informed the Committee that they had broadcast several anti-smoking programmes on radio as well as on television, both on the national network and through the regional kendras. He informed that as many as 1986 programmes had been broadcast on the All India Radio during 1993; 2150 in 1994 and 402 programmes till May, 1995. Programmes are also being shown on the Television. However, due to time constraint such programmes are of very short duration which very from 30 seconds to 2 minutes.

B. HEALTH EDUCATION

4.6 About the question of educating the younger generation, Dr. C.R. Ramachandran of ICMR stated that a tobacco addict is invariably, either a young illiterate adult or an illiterate adolescent who is easily influenced by glamorous advertisements in the electronic media, Dr. Satyawati of the ICMR further added that there is a need to supplement the health education with legislation for banning smoking. The teachers and the professors in the Medical colleges should ensure that atleast once a week or in a month some time hs to be devoted for anti-tobacco education.

4.7 The witnesses agreed with the suggestion of the Chairman that the people are to be educated and anti-tobacco education must start from the school itself and schools should be provided with publicity materials like posters, audio-visuals, video cassettes etc. for the purpose. Supplying

these materials to the colleges is important because generally at this level, students form the habit of smoking.

4.8 On being asked whether there is any kind of programme to educate teenagers in schools and colleges who easily fall prey to the evil of smoking, Shri P.R. Dasgupta, OSD (Education) of the Ministry of Human Resource Development stated that the bad effects of smoking, drug addiction and alcoholism have been included in the topics in the text-books brought out by National Council for Educational and Research and Training (NCERT). These also include chapters on the diseases related to smoking, drinking etc. and the effect of such habits on mental health and community health.

4.9 Shri P.R. Dasgupta, OSD (Education) stated that in order to check smoking, the Department of Education had issued a circular to all the educational Institutions to ban tobacco sale within 100 metres of these institutions and in addition smoking of tobacco and tobacco products within the premises either by visitors or by teachers or by anybody else has also been banned.

4.10 Dr. A.K. Sharma, Director, NCERT also stated that subjects on hazards of smoking have been included in the text books for students in the age group of 11 years to 18 years. These highlight the hazards of smoming like the dangerous effect of nicotine on the human body, and high blood pressure and heart diseases etc. caused due to smoking. References have also been made to other tobacco related diseases like lung cancer, mouth cancer, chronic bronchitis, emphysema, gastrict and duodenal ulcers and the danger of smoking as a pollutant of the indoor environment. Tobacco smoke contains carbon monoxide, polycyclic eromatic hydro carbon and tar. The carbon monoxide reduces the oxygen carrying capacity of the blood. It was also stated that smoking is dangerous for a pregnant woman, because of the nicotine content present in the cigarette which causes retardation of the growth of the foetus.

4.11 He further informed that teachers training programmes are based on the school curriculum followed in the class rooms which include hazards of smoking etc.

C. ROLE OF ELECTRONIC MEDIA

4.12 The Committee feel that though the various Governmental and non-governmental organisations are engaged in promoting awarencess among the masses on the hazards of smoking by going to rural and urban if area it is not possible to reach a large number of people. That could be done effectively only through the electronic media. It was, however, gathered from the Ministry of Health that due to lack of funds and also due to priority being given to other advertisements the messages in this area are not being given adequately or effective publicity through electronic media like T.V. and Radio.

4.13 In this context the Chairman observed that such a messages should

more properly be conveyed through small stories which could imprint the message effectively in the minds of the people.

4.14 The Committee therefore desire that there should be strict censoring the scenes which show consumption of tobacco in general and smoking in particular in all programmes, such as drama, movies etc. shown in the electronic media.

4.15 The Committee after considering the matters in all its aspects has made the following recommendations and also desire that the Government should bring out the necessary legislation:-

1. The Committee feel that it should be made clear to the people that not only the smokers but the passive smokers are affected by the cigarette smoking. The emphasis or rights of non-smokers should be enhanced and non-smokers objecting to smoking or other forms of tobacco use should have legal backing in the light of evidence of "passive smoking" as having causative role in certain disorders.
2. The Committee desire that since the poeple affected most are the young and adolescent, anti-tobacco education should be made compulsory in schools and colleges. For this purpose schools should be provided with papers, audio-visuals, video-cassettes etc.
3. The Committee feel that teachers can play a very vital role in keeping away the young students from smoking habit. It should be prescribed in the rules that teachers should not smoke within the school premises so that the young students may not feel encouraged to smoke or emulate smoking.
4. Health topics for anti-tobacco education should be included in school curriculum.
5. Sale of tobacco and tobacco products should be banned in the vicinity of schools and colleges. A provision should be made to punish the vendors for violation of the same.
6. The Committee feel that a minimum age restriction, that persons below a prescribed age (say 18 years) should not be sold cigarettes will control the growing habit of smoking among the teenagers effectively. It will also be very essential to have an effective enforcement of such legislation.
7. Social awarencess should be created through the electronic media like TV through short stories which may have a lasting effect on the minds of the public and also on Radio which is an important and powerful medium through which the message can reach the poor people and through print media like newspapers and magazines etc.
8. The Committee observe that the programmes shown on television leke films, plays advertisements etc. contain a number of scenes of long duration in which the hero or the other characters are seen

smoking cigarettes in a very obstrusive manner. The Committee feel that such scenes are also responsible to some extent in inducing the smoking habit amongst the youth. The Committee, threfore desire that as far as possible and until or unless absolutely necessary, such scenes should not be included in the programmes shown on the television.

9. The Committee desire that the Government should allocate adequate resources, and personnel to carry out effective anti-smoking education.

V

ALTERNATIVE CASH CROPS

Growing alternative crops in place of tobacco assumes great importance in the context of the need to curb the use of tobacco. Increasing the production of tobacco on the one hand and framing a comprehensive legislation to curb its use cannot go together. A policy decision by the Government to encourage the farmers by all means to switch over to other profitable crops is imperative and for such a policy to succeed it is necessary to demonstrate to the farmers that cultivation of other crops will bring them equal or higher income. Also the livelihood of millions of workers engaged in the manufacture of beedi and cigarettes will have to be seriously addressed to.

5.2 Keeping these parameters in mind the Committee examined the suggestions and views of various organisations, individual, ministries etc. The Committee also took oral evidence of the representative of the Ministry of Agriculture, the Indian Council of Agricultural Research and the Ministry of Commerce. The Committee also heard and views of the non-governmental organisations such as All India Beedi Cigar and Tobacco Workers Federation, Godavari District Tobacco Growers Association and the Tobacco Institute of India.

5.3 The main issue on which the Committee obtained the views of the Ministry of Agriculture and Commerce and the non-governmental organisations was whether it would possible for the tobacco growers to swith over to some alternative crops in place of tobacco without any loss of income. The Committee also wanted to know whether the Government has taken any concrete steps to persuade the tobacco without any loss of income. The Committee also wanted to know whether the Government has taken any concrete steps to persuade the tobacco growers to switch over to other crops and what policy, if any the Government has adopted in this regard.

5.4 Shri G. Balakrishnan, Secretary, Ministry of Agriculture placed before the Committee the production profile of tobacco in the country and informed that the four states namely, Andhra Pradesh, Gujarat, Karnataka and Uttar Pradesh altogether account for 90.3% of the total tobacco production. Shri R.S. Paroda, Director-General, ICAR, informed the Committee that out of the total production, 20% tobacco is used for cigarettes. He informed that 0.4 million hectare area is under tobacco cultivation and 550 million kilograms of tobacco is produced annually. He further informed that requirement in terms of labourers for tobacco

cultivation is to the extent of 20 million people and about six million farmers are engaged in tobacco cultivation. According to him, the area under tobacco cultivation is constant and not increasing like in the countries Brazil, Zimbabwe and China. Dealing with the cost of production, Shri G. Balakrishnan, stated that the cost in terms of rupees per hectares for tobacco is Rs. 20,160; for cotton Rs. 16000; for chillies Rs. 10,000 for groundnut Rs. 8000, for mustard Rs. 4400 and for gram is Rs. 5000/- harvesting time for tobacco crops is about three months which is relatively shorter than in the case of other crops.

5.5 With regard to the issued of switching over to alternative Crops, Shri Balakrishnan stated that Indian Council of Agricultural Research has conducted some research on this issue. They have identified mustard, sunflower, Soyabean, groundnut etc. as alternative cash crops *vis-a-vis* tobacco regarding the cost involved, return, employment potential etc. The tobacco crop has an average return of Rs. 9000 per hectare and the nearest crop is cotton which has an average return of Rs. 8900 per hectare.

5.6 Elaborating on the research activities being carried out Dr. Paroda, Director-General ICAR, informed that Central Institute for Tobacco Research, Rajamundary, which was established in 1947 has done a great deal of research and has evolved new varieties of tobacco to suit our agroclimatic conditions. Research is also being carried out to reduce tar and nicotine contents. The ICAR has been able to lower the tar contents from 37 mg to 18 mg. He further stated that WHO expects that by 1996 it would be further reduced to 12 mg. and by 1998 to 8 mg. According to him, the budget on tobacco research for 1993-94 has been approximately Rs. 6 crore. Research is also being done to find alternative uses of tobacco and also alternative crops. He stated that when compared to other crops, the tobacco crop is giving much higher returns.

5.7 Regarding alternative cash crops to replace tobacco, Dr. Paroda, director-General, ICAR stated that cotton and chillies are the next best crops. However, the farmers would not like to switch over to some other alternative crop as there are problem of the requirement of hybrid technology, generation of employment, especially for women, pesticides etc. He informed that tobacco Research Institute has a "Krishi Vigyan Kendra" through which they are convincing the farmers to switch over to alternative crops. He stated that as the tobacco has a low harvesting period of 3 months, the farmers grew other crops like green gram, black gram and short-duration rice during khariff season.

5.8. Regarding alternative uses of tobacco, Dr. Paroda, Director-General, ICAR stated that the tobacco leaves have a protein content of about 30% and it can be utilised as source of portein in future. Research is being carried out to use it as alternative source of protein. Dr. G. Balakrishnan, Agriculture secretary stated that tobacco is also used in

pesticides, paints and arishing, food and fodder and in other industrial purposes, but the percentage of use in relation to these purposes is very small compared to its harmful uses.

5.9. Explaining the role of Tobacco Board Shri Tejendra Khanna, Commerce Secretary, informed the Committee that they are concerned only with the Virginia Tobacco (FCV) which comes under the regulation of Tobacco Board. According to him, the beedi tobacco and other tobaccos which form about 70% of the total production do not come under their control. He stated that out of the 5,30,000 tonnes of total tobacco production, the FCV variety accounts for only 1,25,000 tonnes. Giving break-up of the total tobacco use, he stated that out of a total of 5,30,000 metric tonnes tobacco, 1,30,000 metric tonnes goes for cigrette production, 1,80,000 goes for beedi manufacture, and the rest of about 2,20,000 metric tonnes goes for chewing, manufacture of snuff and for making cigars etc.

5.10. On being asked about his assessment regarding decrease in tobacco production and export, he stated that about FCV tobacco for which the Commerce Ministry has the overall administrative and regulatory responsibility, for 1991-92, the overall area under FCV tobacco was 1,53,000 hectares and production was 1,67,000 metric tonnes; in 1992-93, the area was 1,41,000 hectares and production was 1,68,000 tonnes, in 1993-94, the area dropped to 1,23,000 hectares and production came down to 1,25,000 metric tonnes, and for 1994-95, according to the provisional figure received from Tobacco Board, the area has dropped to 1,10,000 hectares and the production to 1,07,000 metric tonnes.

5.11. Speaking about export of FCV tobacco, the Commerce Secretary stated that about half of it is exported and that mainly to Russia, East European countries and North African countries. However, of late, some countries have reduced level of purchasing from India, as they have started purchasing it from their neighbouring countries.

5.12. Regarding the impact on tobacco economy because of the initiative taken by the Health Ministry to curb tobacco use, the Commerce Secretary stated that there is still a strong demand for tobacco and any legislation cannot stop it overnight. He suggested that pragmatic approach should be followed to control the use of tobacco. People may be warned of the hazardous effect of the tobacco and there can be social awareness campaign by educating the people on this subject. He stated that farmers should be allowed to grow tobacco as long as there is demand and further it has a very high export potential also and people should have a reasonable opportunity to tap the market overseas. The Committee pointed out that as regards export, there is no objection, but the Government should not promote the use of tobacco with the country.

5.13 The representatives of the Indian Tobacco Institute expressed the view that the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975 has achieved its purpose regarding health warnings

etc. and there is no need for further legislation. They stated that the use of tobacco could be minimised by educating the people on the ill effects of tobacco. They also stated that there is discrimination in treating bidi and cigarettes differently regarding health warning. No laws have been made regarding health warnings for bidis, whereas the smoking in the form of bidi is much more prevalent when compared to cigarette.

5.14 The Committee also heard the views of the representatives i.e. trade union and the tobacco growers Shri R.K. Ratnaker representing All India Bidi, igar and Tobacco workers Federation apprehended that banning tobacco cultivation would render lacs of beedi workers unemployed besides causing a loss or revenue to the Government.

5.15 Shri Subramaniam representing the Godawari Tobacco Growers Association expressed serious apprehensions about the fate of the farmers and growers engaged in the tobacco cultivation. He stated that tobacco is a cash crop having an assured production and sale, and tobacco industry which has grown over a numer of years should not be ruined all of a sudden by enacting a legislation.

5.16 The Committee has carefully considered the views and suggestions of the representatives of the Government as well as non-gopvernmental organisations of the question of switch over to alternative crops in place of tobacco so as to eliminate the use of tobacco in the country. This question is essentially bound up with the viable option available to the farmers and the Government Policy towards curbing the use of tobacco and rehabilitating the workers engaged in tobacco industry.

5.17 The committee do not look at the question of curbing the use of tobacco and its impact merely in terms of the economic loss of one section of farmers or workers. The committee look at this problem in its totality. The serious health hazards caused to the millions by the use of tobacco and the insidious damage being done to the whole generation of youth cannot be ignored. At the same time the Committee is fully conscious of the need to protect the ecnomic interest of an estimated six million farmers and the livelihood of about 20 million workers partly or fully engaged in this Industry. All the representatives who appeared before the Committee were of the view that the farmers should be persuaded to switch over to other crops gradually and that the level of awarness in the society of the serious health hazards involved in the use of tobacco should be raised through proper education. The Committee is fully in agreement with this view.

The Committee wish to point out in this context that on both counts, namely switching over to alternative crops and heighting the level of awareness of the health hazards no integrated policy is in evidence. The attempt being made by the different departments in this connection are both sporadic and desultory and therefore have not created any visible impact on the production or use of tobacco. This becomes clear on an analysis of the view points placed before the Committee by various departments of the

Government. The Committee therefore, feel that the Government should formulate an integrated policy which should fully reflect the concerns of the society about the insidious damage tobacco is doing to the health of the people and also take care of the interest of the farmers and workers.

5.18 In this connection the Committee make the following recommendations:

(1) *Replacing tobacco by some alternative cash crop:*—The Committee note that on this aspect research work is already being carried out by the Indian Council of Agricultural Research and they have identified Cotton, chillies, mustard, sunflower, soyabean, groundnut etc. as the possible alternative cash crops. The Committee are of the view that initiatives should be taken by the Ministry of Agriculture to persuade the farmers to switch over to these alternative crops which are almost equally profitable. It should be done on experimental basis at first on selected farmers and the result should be properly publicised so that the farmer gets convinced about the viability of cultivating other crops. The farmers should also be educated on the health hazards of tobacco, to create a awareness in them which would in turn convince them of the need to switch over to the other crops. The Government may also think of providing monitory help to the farmers for changing over from tobacco cultivation to alternative crops.

(2) The Committee note that a large amount of money is being spent in the research work in evolving new varieties of tobacco. While evolving new less harmful varieties is necessary for competing in the international market, the Committee feel that the ICAR should also concentrate on research for developing new technology, high yielding varieties, fertilisers etc. for the alternative cash crops, which will help the farmers to maintain their level of profit while switching over to these alternative crops.

(3) It has been stated before the Committee that the tobacco can be used for a variety of useful purposes. In this connection, the Committee has been told that tobacco leaves have a protein content of about 30% which is very high. The Committee desire that adequate research must be done in this field to use tobacco leaves as an alternative source of protein. The Committee further note that tobacco is also used in pesticides, paints and varnishing, food and fodder and for other industrial purposes but the percentage of use in relation to these purposes is very small when compared to its harmful uses. The Committee desire that vigorous research should be continued in these fields as well as efforts to promote such alternative uses of tobacco which will shift its use from the harmful areas.

(4) The Committee further note that the tobacco has tremendous export potential. The Committee do not have any objection to the production of tobacco for export purposes. The Committee are,

however, of the view that the Tobacco Board should not promote the use of tobacco consumption internally.

(5) The Committee is aware of the enormity of the problem of rehabilitation of an estimated twenty million workers fully or partly engaged in various operations in the tobacco industry. The Committee do not suggest that Production of tobacco be banned. The Committee recommend that a gradual approach be adopted in this regard and efforts be made to phase out cultivation of tobacco for human consumption over a period of time. The Committee desire that the Government should at once conduct a study about the resources required for rehabilitating the workers and the area where they could be absorbed and formulate concrete proposal in this regard.

NEW DELHI;
November, 1995

AMAL DATTA,
Chairman,
Committee on Subordinate Legislation.

APPENDICES

APPENDIX-I

(*Vide* para 8 of the Introduction of the Report)

Summary of Recommendations Made in the Twenty-Second Report of the Committee on Subordinate Legislation (Tenth Lok Sabha)

Sl. No.	Reference to para No. in the Report	Summary of Recommendations
1	2	3
1.	1.9 to 1.13	*Statutory Warning on Tobacco Products* After carefully considering the comments/ suggestions received from various experts/ organisations engged in tobacco control and taking into account the views expressed by various officials/ non-officials, the Committee come to the conclusion that the existing provisions regarding statutory warning on cigarette packets under the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975 have not proved effective in achieving the desired goal *i.e.* to make the smokers aware of the health hazards of smoking so that they would quit this habit. The Committee further observe that the existing health warning on cigarette packets is written in English and not in any other regional language. As a result the illiterate people or those who do not know English just do not get this message. The Committee further observe that the existing warning has become too monotonous to catch the attention of the people. Further, the warning is written in too small letters to be conspicuous, and is displayed only on one side of the cigarette packet. The Committee also observe that the size of the letters of the warning are much smaller than that of brand name of cigarettes. The Committee also observe that in our country, a majority of population particularly in the rural areas

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		smoke 'Beedis'. The Committee have been told by experts that beedi is more harmful than cigarettes. But beedi has been kept out of the purview of the Act and so there is no statutory requirement of a health warning on beedi packets to the effect that smoking beedis is a health hazard. The Committee further observe that cigarettes/ beedis contain tobacco which contains harmful substances as nothing is written or indicated on the packets of cigarettes/beedis to his effect. Further, no limit has been prescribed with regard to the quantity of nicotine and tar contents in the tobacco used in the beedis and cigarettes. The Committee therefore recommend as follows:— (1) The statutory warnings should contain strong wordings like 'smoking kills you' or 'smoking causes lung cancer' etc. a variety of such warnings should be devised and should be rotated periodically (say every month) on the cigarette packets so that these are effectively, able to catch the attention of the smokers, as is the practice being followed by countries like Sweden and Iceland (see Appendix-V). The Committee feel that such system of warnings would largely solve the problem of ineffectiveness of a single warning, which becomes too familiar and monotonous. (2) Health warnings should be made further effective by using symbols and pictorial depictions, variety of such effective symbols/pictures could be devised as in the case of Sweden. Such pictorial representations would also take care of illiterate smokers who at present are unable to read the health warning. Such pictures should be depicted as a supplement to the strongly worded rotating health warnings. (3) The health warnings as suggested in the case of cigarettes should be extended to cover 'beedi' also which is very popular in our country and

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		particularly in the rural areas. This is essential because 'beedi' is even more harmful than the cigarettes due to the presence of higher content of the toxic like nicotine and tar. From the expert opinion of the Indian Council of Medical Research on the harmful ettects of beedi smoking, it has been found that beedi smoking is more hazardous than cigarette smoking due to the higher content of tar and nicotine which ranges from 44.9 to 51.4 mg. and 1.71 mg. respectively. It has also been found that carbon monoxide yield is higher is beedi than in cigarette smoke partly because the tendu leaf in which the tobacco is wrapped the tobacco is warpped is less porous than paper. The warnings should also cover Cigars and Cheroots. (4) Since tobacco consumption in any form is injurious to health, it should be made legally mandatory to carry health warnings on all tobacco products like Pan Masala, tooth paste, tooth power' creamy snuff, Gutkha, cut tobacco, chewing tobacco, snuff of tobacco etc. (5) The health warnings should be printed in regional languages also in addition to the existing practice of being written in English only. In this manner, the persons not knowing English would also be able to get the message conveyed by such health warnings. (6) The size of the health warnings should be as large as the brand name of the tobacco products and the warning should be prominently displayed on both sides of the package. (7) Printing the tar and nicotine levels on packets and cartons of all tobacco products and fixing the maximum permissible limits on the use of these toxics for cigarettes/beedis and other harmful tobacco products should be made compulsory. (8) A large number of smokers buy cigarettes in loose from. Single cigarette does not have any

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		warning written on it thus the buyers of loose cigarette are not exposed to the health warning. This is a serious lacuna. The Committee feel that single cigarette should also contain the health warning either in the written form or by symbols like skull and cross bones or any other suitable symbol. Similarly, health warning should be displayed prominently at every shop where cigarette, beedi or other tobacco products are sold. These warnings should be in the respective regional languages and their display should be made compulsory under the law. (9) An important aspect of smoking or tobacco use/consumption in any form is that use of tobacco is habit forming and people should therefore be cautioned about it. Therefore, the health warning must include the message that "use of tobacco smoking is habit forming." (10) The cigarettes and other tobacco products imported in our country must be required to meet the statutory requirements regarding health warning in our country. The Committee desire that the Government should bring suitable legislation at the earliest incorporating the aforesaid recommendations of the Committee.
2.	2.2 to 2.9	*Banon Adverstising* The Committee take note of the fact that the Law relating to the regulation of production, supply and distribution of cigarettes was passed in 1975 but it has not been effectively enforced. The provision contained in section 5 of the Act specifiyses the size and other main features of the statutory warning to be included in the advertisement on smoking. But contrary to the statutory specification, the statutory warning is being printed in a very inconspicuous manner. Thus there is a continuous violation of the man provisions of the law. The Committee regret to note that the Government has not shown enough will to enforce this law which was enacted by Parliament

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		in order to make people aware of the health hazards involved in smoking so that they give up the habit of smoking. The Committee find that although the Ministry of Health and Family Welfare had made some efforts, there is not much coordination among various Ministries which are concerned with this issue. As a result there is no clearcut policy with regard to banning advertisement on smoking. The Ministry of Information and Broadcasting, by its own admission, issue some guidelines only in 1991 about exhibiting smoking scenes in Programmes shown on TV. It is very distressing to note that the Act was passed in 1975 and the Doordarshan took sixteen years to formulate the policy and take an elementary step in this regard. The Committee also note that the Central Board of Film Certification is yet to address itself on the question of banning smoking scenes in films. The Committee agree with the view of the experts from ICMR that glamorisation of smoking in cinema and other visual programmes acts as a powerful inducement to youths of impressionable age to smoke. It has been brought to the notice of the Committee that a lot of advertisements on cigarette are inserted in the video casettes and shown by the cable TV operators. The advertisements which are banned by Doordarshan find their place on the TV screens through these cassettes. The Committee has also been told that the Ministry of Information and Broadcasting has not control over it. It has been stated before the Committee by the representative of the Ministry of Information and Broadcasting that the Cable Regulation Act is in force now and the advertising guidelines framed under this Act, apply to the cable operators, who can be prosecuted in case of violation of the guidelines. Under this Act, the State Governments are entrusted with the responsibility to enforce the regulations. The Committee find that the situation in this respect is indeed very bad. Further the Committee is of the view that the cable TV operators cannot be prosecuted for violation of guidelines merely in the absence of rules/statutory provision.

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		The Committee take a serious view of the situation in regard to the enforcement of regulations in respect of statutory warning about smoking. The Committee express its unhappiness about the lack of seriousness on the part of the law enforcement authorities in enforcing the law which is in force since two decades. It has been brought to the notice of the committee by the representatives of the Ministry of Health and Family Welfare that the Government proposes to bring before Parliament a comprehensive legislation to regulate the use of tobacco. While appreciating this move, the Committee desire that the Government should make provision in the proposed legislation for a total ban on all forms of advertisements on tabacco. The Committee also desire that the Government should make stringent penal provisions to effectively deal with violation of the law. The Committee is also of opinion that there should be a total ban on major sports events being sponsored by cigarette companies. The Committee desire that the Government should bring the proposed bill before Parliament before any further loss of time.
30.	3.8 to 3.9	*Prohibition of Tobacco smoking in Public Places* The Committee after considering the matter in detail feel that in order to protect the health interests of the non-smoking, public from the hazards of passive . smoking, there should be complete prohibition on smoking at least in all the public places where large number of people are expected to be present for long periods such as, hospitals, dispensaries and other health care establishments, education institutions, Conference Halls, Cinema Halls, theatres, offices, all types of work places, waiting rooms in railway stations, etc. The Committee further note that travellers face a lot of inconvenience basides being forced to inhale the smoke emitted by persons travelling in trains, buses and Air-flights. The Committee, therefore, recommend a complete ban on smoking in the public transport systems, the domestic air flight, Government vehicles and public transport services.

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		The Committee desire that the Government should bring a suitable legislation in this regard to safeguard the interests of non-smokers. The Committee further desire that such legislation should also have proper penalty provisions to make the said legislation effective and purposeful. The Committee are of the view that once the smokers are stopped to smoke in public places, it may ultimately result in smokers quitting their smoking habit and there would be a considerable reduction in the number of smokers.
4.	4.15	*(a) Social Awareness* *(b) Health Education* *(c) Role of Electronic media* The Committee after considering the matters in all its aspects has made the following recommendations and also desire that the Government should bring out the necessary legislation:— 1. The Committee feel that is should be made clear to the people that not only the smokers but the passive smokers are affected by the cigarette smoking. The emphasis on rights of non-smokers should be enhanced and non smokers objecting to smoking or other forms of tabacco use should have legal backing in the light of evidence of "passive smoking" as having a causative role in certain disorders. 2. The Committee desire that since the people affected most are the young and adolescent, anti-tobacco education should be made compulsory in schools and colleges. For this purpose schools should be provided with posters, audio-visuals, video-cassettes, etc. 3. The Committee feel that teachers can play a very vital role in keeping away the young students from smoking habit. It should be prescribed in the rules that teachers should not smoke within the school premises so that the young students may not feel encouraged to smoke or emulate smoking. 4. Health topics for anti-tobacco education should be included in school curriculum.

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		5. Sale of tobacco and tobacco products should be banned in the vicinity of schools and colleges. A provision should be made to punish the vendors for violation of the same. 6. The Committee feel that a minimum age restriction, that persons below a prescribed age (say 18 years) should not be sold cigarettes, will control the growing habit of smoking among the teenagers effectively. It will also be very essential to have an effective enforcement of such legislation. 7. Social awareness should be created through the electronic media like TV through short stories which may have a lasting effect on the minds of the public and also on Radio which is an important and powerful medium through which the message can reach the poor people and through print media like newspapers and magazines etc. 8. The Committee observe that the programmes shown on television like films, plays, advertisements etc. contain a number of scenes of long duration in which the hero or the other characters are seen smoking cigarettes in a very obstrusive manner. The Committee feel that such scenes are also responsible to some extent in inducing the smoking habit amongst the youth. The Committee, therefore, desire that as far as possible and until or unless absolutely necessary, such scenes should not be included in the programmes shown on the television. 9. The Committee desire that the Government should allocate adequate resources, and personnel to carry out effective anti-smoking education
5.	5.16 to 5.18	*Alternative cash crops* The Committee has carefully considered the views and suggestions of the representatives of the Government as well as non-governmental organisations on the question of switch over to alternative crops in place of tobacco so as to eliminate the use of tobacco in the country. This

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		question is essentially bound up with the viable option available to the farmers and the Government Policy towards curbing the use of tobacco and rehabilitating the workers engaged in tobacco industry.
		The Committee do not look at the question of curbing the use of tobacco and its impact merely in terms of the economic loss of one section of farmers or workers. The Committee look at this problem in its totality. The serious health hazards caused to the millions by the use of tobacco and the insidious damage being done to the whole generation of youth cannot be ignored. At the same time the Committee is fully conscious of the need to protect the economic interest of an estimated six million farmers and the livelihood of about 20 million workers partly or fully engaged in this Industry. All the representatives show appeared before the Committee were of the view that the farmers should be persuaded to switch over to other crops gradually and that the level of awareness in the society of the serious health hazards involved in the use of tobacco should be raised through proper education. The Committee is fully in agreement with this view.
		The Committee wish to point out in this context that on both counts, namely switching over to alternative crops and heighting the level of awareness of the health hazards no integrated policy is in evidence. The attempt being made by the different departments in this connection are both sporadic and desultory and therefore have not created any visible impact on the production or use of tobacco. This becomes clear on an analysis of the view points placed before the committee by various departments of the Government. The Committee therefore, feel that the Government should formulate an integrated policy which should fully reflect the concerns of the society about the insidious damage tobacco is doing to the health of the people and also take care of the interest of the farmers and workers.

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		In this connection the Committee make the following recommendations:—
		(1) *Replacing tobacco by some alternative cash crops:* The Committee note that on this aspect research work is already being carried out by the Indian Council of Agricultural Research and they have identified cotton, chillies, mustard, sunflower, soyabean, groundnut etc. as the possible alternative cash crops. The Committee are of the view that initiatives should be taken by the Ministry of Agriculture to persuade the farmers to switch over to these alternative crops which are almost equally profitable. It should be done on experimental basis at first on select farmers and the result should be properly publicised so that the farmer gets covinced about the viability of cultivating other crops. The farmers should also be educated on the health hazards of tobacco, to create awareness in them which would in turn convince them of the need to switch over to the other crops. The Government may also think of providing monetary help to the farmers for changing over from tobacco cultivation to alternative crops.
		(2) The Committee note that a large amount of money is being spent in the research work in evolving new varieties of tobacco. While evolving new less harmful varieties is necessary for competing in the international market, the Committee feel that the ICAR should also concentrate on research for developing new technology, high yielding varieties, fertilisers etc. for the alternative cash crops, which will help the farmers to maintain their level of profit while switching over to these alternative corps.
		(3) It has been stated before the Committee that the tobacco can be used for a variety of useful purpose. In this connection, the Committee, has been told that tobacco leaves have a protein content of about 30% which is very high. The Committee desire that adequate research must be done in this field to use tobacco leaves as an alternative source of protein. The Committee further note that tobacco is also used

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		in pesticides, paints and varnishing, food and fodder and for other industrial purposes but the percentage of use in relation to these purpose is very small when compared to its harmful uses. The Committee desire that vigorous research should be continued in these fields as well as efforts to promote such alternative use of tobacco which will shift its use from the harmful areas. (4) The Committee further note that the tobacco has tremendous export potential. The Committee do not have any objection to the production of tobacco for export purposes. The Committee are, however, of the view that the Tabacco Board should not promote the use of tabacco consumption internally. (5) The Committee is aware of the enormity of the problem of rehabilitation of an estimated twenty million workers fully or partly engaged in various operations in the tobacco industry. The Committee do not suggest that production of tobacco be banned. The Committee recommend that a gradual approach be adopted in this regard and efforts be made to phase out cultivation of tobacco for human consumption over a period of time. The Committee desire that the Government should at once conduct a study about the resources required for rehabilitating the workers and the area where they could be absorbed and formulate concrete proposal in this regard.

MINUTES

APPENDIX-II

(*Vide* para 7 of the Introduction of the Report)

MINUTES OF THE FIFTY-FIFTH SITTING OF THE COMMITTEE ON SUBORDINATE LEGISLATION

The Committee met on Wednesday, 3 May, 1995 from 15.00 hours to 16.30 hours.

PRESENT

Shri Amal Datta—*Chairman*

MEMBERS

2. Shri V. Dhananjaya Kumar
3. Shri Rajendra Kumar Sharma
4. Shri Pratap Singh
5. Shri Umrao Singh

SECRETARIAT

1. Shri S. N. Mishra — *Additional Secretary*
2. Smt. Roli Srivastava — *Joint Secretary*
3. Shri P.D.T. Achary — *Director*
4. Shri Ram Auttar Ram — *Deputy Secretary*

Representatives of the Ministry of Health and Family Welfare

1. Shri I. Chaudhuri —Additional Secretary
2. Dr. P.C. Roy —Additional Director General, Health Services
3. Shri L. Prasad —Director

Representatives of the Indian Council of Medical Research

1. Dr. G.V. Satyawati —Director General
2. Dr. C.R. Ramachandran —Senior Deputy Director General
3. Dr. Kishore Chaudhary —Assistant Director General

2. The Committee took oral evidence of the representatives of the Ministry of Health and Family Welfare and the representatives of the Indian Council of Medical Research regarding rules/regulations framed under the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975 with a view to seeing whether these rules were effective enough to make the smokers aware of the hazards of smoking and what other steps could be taken towards this end.

3. At the outset, the Chairman desired to know the purpose of the

aforesaid Act and what it sought to accomplish and what its achievement are till now.

4. Shri Choudhuri, Additional Secretary, Ministry of Health admitted that the Act was not proved effective enough in discouraging smoking. He informed that the make the anit-tobacco campaign more effective, the matter had been discussed during the Conference of the Central Council of Health and Family Welfare where, besides drawing the attention of all the State Governments on the anit-tobacco campaign, it was also decided that the statutory warning should be extended to all the tobacco products like Pan Masala, Gutka, Tobacco powder etc. It was also proposed that warning should be in the regional languages as well and the ban should be extended to 'beedi' too. Shri Choudhury stated that to achieve this, the Ministry is bringing a comprehensive anti-tobacco legislation which would provided for (i) complete ban on all forms of advertisement for tobacco products; (ii) the display of Nicotine contents on all tobacco products; (iii) statutory warning on all cigarettes with a rotational system; (iv) ban on sale of tobacco produts around schools, educational institutes, hospitals, public places etc. He said that the proposed bill will also be extended to cover beedi.

5. The Committee expressed its concern that specific warning on cigarette packets is written only in English and not in other regional languages and suggested that the size of the warning should be the same as that of the size of the name of the cigarettes printed on the packet. The Committee also suggested that until the proposed legislation is passed, till such time, the warning should be written in bold letters and a variety of warnings can be thought of as in the case of Sweden. Dr. G.V. Satyawati, Director General, ICMR was of the view that existing warning is written in such a way that the real message is totally contradictory to that warning as the advertisement is portraped in a glamerous manner whereas the statutory warning is written in a corner.

6. Regarding creating a social awareness in the minds of the public towards hazards of cigarette smoking, it was pointed out to the representatives that the consumption and production of tobacco is on increase in the country which indicate that the campaign in this regard has not proved effective enough. Dr. G.V. Satyawati, Director General, ICMR stated that in 1990, the ICMR in collaboration with All India Radio did a programme called Radio DATE (Drug Alcohal Tobacco Education) in this direction. The programme was broadcasted by All India Radio in sixteen languages through 84 stations all over the country. A survey carried thereafter indicated that as an effect, 6% people left smoking, 35% had reduced smoking and 40% people started thinking of quitting this habit.

Shri I Choudhuri, Additional Secretary, Ministry of Health stated that anti-tobacco campaign has a definite impact in reducing the tobacco related afflictions. The Committee also wanted to ascertain whether there is any Organisation which propagate the statutory warning; whether any survey has been conducted to find out whether the number of smokers is increasing or decreasing; and whether the habit of smoking amongst the younger generation is growing or declining. Dr. C.R. Ramachandran, Senior Deputy Director General, ICMR stated that there are certain non-governmental organisations which work for such mass awakening and which have taken up the task of educating people about the harmful effects of tobacco in general. As per a study conducted by ICMR, it was found that a person who is most likely to become a tobacco addict is a young illiterate adult or an illiterate adolescent. Particularly, the glamourous advertisements induce the young and adolescents into this habit. On being asked what kind of advertisements are more responsible in inducing the young people into this habit, Dr. G.V. Satyawati, Director General ICMR stated that advertisments through electronic media are most responsible.

7. Regarding Health education on anti-tobacco habits Dr. satyawati was of the view that alongwith the legislation for banning smoking, the anti-tabacco education should also be compulsorily imparted in schools and colleges. The Committee suggested that schools should be provided with posters, audio-visuals, video-casettes etc. for the purpose. Shri Choudhuri agreed to take up the matter with the Ministry of Human Resource Development who are concerned with education. The Committee also desired that health topics for anti-tobacco education should be included in school curriculum.

8. Regarding difficulties in imposing a ban on production and sale of tobacco, Shri Choudhuri stated that it may result in unemployment problem to six to seven million people engaged in tobacco cultivation and as such labour department and agriculture departmens may have some problems. The Committee suggested that while enforcing a ban, simultaneously steps should be taken for re-employment and rehabilitation of such farmers. On being asked whether any study has been made as to what kind of alternative could be suggested or given to these people, Shri Choudhury stated that tobacco is a cash crop and its yield is better than other crops. Therefore, it is the Agriculture Ministry who has to pay attention and see that the tobacco farmers earn a lot more while being diverted to some other field. Further, the export potential of tobacco is so high that a determination has to be made by the government to reduce its production or to introduce chage croping patterns.

9. On being asked whether there is any provision in the existing Act which authories the Government to prohibit smoking in particular areas or places and whether such provision is enforceable, Shri Choudhuri stated that as on now, this is being done through administrative orders. However, the same is being contemplated in the proposed comprehensive legislation

on anti-tobacco. The Committee suggested that it may be advocated amongst the people that not only those who are smoking but also those who are inhaling the cigarette smoke are even more affected. The Committee desired the witnesses to formulate some more suggestions in this regard.

The witnesses then withdrew.

MINUTES OF THE FIFTY-SIXTH SITTING OF THE COMMITTEE ON SUBORDINATE LEGISLATION

The Committee met on Wednesday, 24 May, 1995 from 15.00 to 17.30 hours.

PRESENT

Shri Amal Datta — *Chairman*

MEMBERS

2. Shri Prithviraj D. Chavan
3. Shrimati Bhavna Chikhalia
4. Shri Rajendra Kumar Sharma
5. Shri K. G. Shivappa
6. Prof. K. V. Thomas
7. Shri Umrao Singh

SECRETARIATE

1. Shri S. N. Mishra — *Additional Secretary*
2. Shri Roli Srivastava — *Joint Secretary*
3. Shri P.D.T. Achary — *Director*
4. Shri Ram Autar Ram — *Deputy Secretary*

Representatives of the Indian Cancer society, Delhi

1. Shri K. K. Mehta —*Vice President*
2. Shri V. P. Mehta — *Hony. Secretary*
3. Dr. Y.P. Bhatia — *Director*

2. The Committees took oral evidence of the representatices of the Indian Cancer Society, Delhi regarding rules/regulations framed under the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975 with a view to see whether these rules were effective enough to make the smokers aware of the hazards of smoking and what other steps could be taken towards this end.

3. In his opening statement Shri K. K. Mehta, Vice-Chairman of the Indian Cancer society said that the most important aspect of the fight against cancer is to educate the people against the dangers of smoking. He stated that as per the opinion of WHO, about 2.5 million people have cancer at any given point of time. Timely help will enable people to get rid of this disease. According to him thirty percent of the cancer cases are oral cancer caused by tobacco chewing, smoking etc. He informed the

Committee that due to the campaign for creating awareness, the incidence of lung cancer has come down by thirty percent in America.

4. The Chairman wanted to know whether there has been any efforts to educate the children in schools and colleges about the hazards of smoking and if so, the result thereof. Shri Mehta state that his organisation has been going to schools and colleges spreading awareness among them through pictures, video-films etc.

5. On the question of the effectiveness of the statutory warning, the witness said that it has absolutely no effect. He suggested that some other wordings such as the cigarette smoking is poisonous symbols should be given. He further suggested that bold symbols should be displayed and also the warning should be printed in regional languages as well. These warnings should be displayed in all the shops selling cigarettes.

6. On the question from the Chairman as to whether the rotation of advertisements as is done in Sweeden etc. is suitable to our country, the witness answered in the affirmative.

7. Commenting on the importance of electronic media is educating people about the health hazards of smoking, the Chairman said that the Committee wanted to understand the strategic point where we can hit a person with the visual advertisment so that he would remember the message. In this context he emphasised the importance of radio also particularly in view of the need for curbing the smoking of beedi. The beedi smokers are poor people who can be reached through radio.

8. The Chairman asked the witness to give suggestion in writing as to what message should be imparted and how. The Chairman himself was of the opinion that a small story in visual form would have a lasting effect on the minds.

9. Shri V.P. Mehta, another witness, quoted a suggestion given by WHO that since tobacco used in cigarettes contain nicotine and tar it should be treated as a drug and should be sold only under license. The Chairman suggested that the nicotine and tar content should be printed on the pack. Dr. Y.P. Bhatia, another witness, said that in developed countries cigarettes are sold with it content of nicotine duly printed so that the user knows how much damage he is subjecting himself to before smoking. There are light and superlight cigarettes and people can shift to lighter varities before giving up smoking altogether. He further said that smoke as well as nicotine both have harmful effects.

10. On being asked about the advertisements on cigarettes in newspapers, magazines, video films etc., Shri K.K. Mehta said that he was

strongly against all such advertisements. He also said that the practice of sports events etc. being sponsored by cigarette companies like ITC etc. should be discouraged.

11. On the question whether the demand for cigarette is increasing, the witness said that it is increasing and that the element of fashion is responsible for it which again is created by advertisements and programme of contest in which the actors and Actresses are shown smoking cigarettes and commenting that smoking is good and so on. The Chairman observed that a ban on advertisements will take care of it.

12. On the Question of loss of revenue, the witness said that loss of revenue is much less compared to loss of life. Similarly, regarding the loss of livelihood of people engaged on the cultivation and the trade, Shri V.P. Mehta referred to a booklet issued by WHO which contains an article entitled 'Crops subsistence—A success story in Bangladesh' and said that this problem has been tackled successfully there.

13. The Chairman, sought the help of the Indian Cancer Society in suggesting the content of syllabus in schools and colleges in regard to the hazards of smoking and Shri K.K. Mehta promised all help.

14. The Committee thereafter decided to undertake the study-tour of the Committee to Calcutta, Visakhapatnam and Madras from 26 June to 1 July, 1995.

The witness then withdrew.

The Committee then adjourned.

MINUTES OF THE FIFTY-SEVENTH SITTING OF THE COMMITTEE ON SUBORDINATE LEGISLATION

The Committee met on Monday, 19 June, 1995 from 14.00 hours to 16.30 hours.

PRESENT

Shri Amal Datta—*Chairman*

MEMBERS

2. Shri Prithviraj D. Chavan
3. Shri V. Dhananjaya Kumar
4. Shri M.V.V.S. Murthy
5. Shri D. Pandian
6. Shri Rajendra Kumar Sharma
7. Shri K.G. Shivappa
8. Prof. K.V. Thomas
9. Shri Umrao Singh

SECRETARIAT

1. Shri S.N. Mishra — *Additional Secretary*
2. Smt. Roli Srivastava — *Joint Secretary*
3. Shri P.D.T. Achary — *Director*
4. Shri Ram Autar Ram — *Deputy Secretary*

I. *Representatives of the Ministry of Information and Broadcasting*

1. Shri Bhaskar Ghose, Secretary, I&B
2. Shri S.K. Kapoor, Director-General, All India Radio
3. Shri R. Basu, Director-General, Doordarshan

II. *Representatives of the Ministry of Human Resource Development and NCERT*

1. Shri P.R. Dasgupta, OSD, (Education)
2. Dr. K.J.S. Chatrath, Joint Secretary (Secondary Education)
3. Dr. A.K. Sharma, Director, NCERT
4. Shri Inderjit Khanna, Secretary, UGC.

III. *All India Bidi, Cigar and Tobacco Workers Federation (Maharashtra)*

Shri R.K. Ratnakar, General Secretary

IV. *The Godavari Tobacco Growers Association*

1. Shri Subramaniam

2. Shri Venkat Reddy

2. The Committee took oral evidence. of the representatives of the Ministry of Information and Broadcasting and Ministry of Human Resources Development regarding rules/regulations framed under the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975 with a view to see whether these rules were adequate or needed any modification to achieve the objective of making the smokers aware of the hazards of smoking and what other steps could be taken towards tobacco control mesures.

3. At the outset, the Chairman desired to know about the role being played by the two Ministries to promote awareness amongst the youth about the hazards of smoking *viz.*, by putting out effective advertisements on anti-smoking; propogating knowledge on the ill-effects of smoking from school level itself etc. The Chairman desired to know the future course of action which is proposed to be taken by them for the dissemination of information.

4. Shri Bhaskar Ghose, Secretary, Ministry of Information and Broadcasting informed the Committee that they had broadcast several programmes against anti-smoking on radio as well as on television and that too on both the national network and the regional Kendras. For instance in 1993, the AIR broadcast 986 programmes, 2150 in 1994 and as regards 1995, 402 programmes have already been broadcast till May. These programmes included talks, interviews, jingles, slogans, dramas etc. As regards Doordarshan programmes, the Secretary stated that anti-smoking programmes are shown on television also, but due to time constraint, such programmes are of very short duration which vary from 30 seconds to 2 minutes. According to him, the time is also to be devoted to other serious health hazards like cancer, AIDS and health related programmes like family welfare. The Secretary further informed that all the Doordarshan Kendras have been instructed to ban films/programmes which depict scenes on gambling, drinking, smoking etc.

5. On being asked about banning the cigarette advertisement normally recorded in the video casettes which are meant for home viewing and also being used by Cable Operators, the Secretary informed that they do not have any control over this. He, however, stated that the Cable Regulation Act is in force which prohibits Cable Operators to show such cassettes and its violation will render the cable operator liable for prosecution. The said Act is also being implemented in the States.

6. On being pointed out to the representative that the majority of the big sports events telecast on television are being sponsored by big and

powerful Tobacco companies which in a way promotes smoking, the representative stated that this issue comes under the Department of Youth Affairs and Sports who arrange such sports events. The role of Doordarshan is to just cover that event.

7. The Committee stressed that the ill-effects of cigarette smoking should be conveyed to the people by telecasting special skits and some serials which can prove to be more effective.

8. The Committee expressed its concern that specific warning "cigarette smoking is injurious to health" on the cigarette packet is practically not noticeable and also desired that stricter warnings projecting the ill-effects caused by smoking should be marked on the cigarette packets as in other Western countries.

9. The Committee suggested that it should also be emphasised that cigarette smoking is not only injurious to the smoker himself but is much more harmful to non-smokers who are around him. The Committee also stressed that smoking should be banned in public places.

10. The Committee also heard the views of the representatives of All India Bidi, Cigar and Tobacco Workers Federation (Maharashtra) and the Godavari Tobacco Growers Association. These representatives expressed serious apprehension that by banning cultivation of tobacco, millions of people who are engaged in this field are liable to be rendered unemployed. The Committee informed the representative that the matter will be taken up with the Ministry of Agriculture to suggest some alterhate cash crop in place of tobacco and the matter will be dealt with the depth before recommending any ban on the production and sale of tobacco and tobacco products.

11. The Committee then heard the views of the representatives of the Ministry of Human Resources Development (Department of Education) and the National Council for Educational Research and Training on the aspect of promoting awareness by way of education among young students. Shri P.R. Dasgupta, OSD. (Education) stated that the bad-effects of smoking, drug addiction, alcoholism have been included in the topics in the text-books brought out by NCERT. It also includes a chapter on the diseases related to smoking, drinking etc. as well as on mental health and community health which promote awareness of the ill-effects of such habits.

12. Shri Dasgupta also informed the Committee that in 1992 a Committee of the Secretaries of the Government of India had considered the issue to check tobacco use and based on their decision, the Department of Education had issued a circular not only to its own institutions but also to the Education Secretaries of all the State Governments to ban sale tobacco and tobacco products within 100 metres of an educational institution. This was issued as an advice. He further stated that apart from banning sale of tobacco and tobacco products in the

vicinity of education institutions, smoking of tobacco and tobacco products within the premises either by visitors or by teachers or by anybody else be also banned. A circular of this effect has also been issued by the Department of Education to Kendriya Vidyalayas, Navodaya Vidyalayas and other institutions.

13. The Committee suggested that a provision should be made to incude chapters on anti-smoking in the college curriculum apart from giving lectures on the subject.

14. Dr. A.K. Sharma, Director, NCERT stated that subjects on hazards of smoking have been included in school curriculum for students of the age group of 11 years to 18 years where in aspects of addiction to tobacco smoking and the dangerous effect of nicotine on the human body, have been discussed. He further narrated in detail the hazards of smoking like high blood pressure, heart diseases etc. According to him references in the text books have also been made to tobacco related diseases like lung cancer, mouth cancer, chronic bronchitis, emphysema, gastric and duodenal ulcers and the danger of smoking as a pollutant of the indoor environment. Dr. Sharma also informed that teachers training programmes are based on the school curriculum followed in the class rooms. During such training programmes, the issues such as the hazards of smoking etc. are also discussed so that such ideas could be emphasized by the teachers in the class rooms. The Committee suggested that schools and colleges have to be declared as smoke free zones after creating a supportive-environment for it.

The Committee desired to know the steps the Department of Education are contemplating.

The witness then withdrew.

The Committee then adjourned.

MINUTES OF THE FIFTY-EIGHTH SITTING OF THE COMMITTEE ON SUBORDINATE LEGISLATION (TENTH LOK SABHA) (1995-96)

The Committee met on Monday, 17 July, 1995 from 15.00 to 17.45 hours.

PRESENT

Shri Amal Datta—*Chairman*

MEMBERS

2. Shrimati Bhavna Chikhalia
3. Shri V. Dhananjaya Kumar
4. Shri M.V.V.S. Murthi
5. Shri Rajendra Kumar Sharma
6. Shri Umrao Singh
7. Shri Ram Sharan Yadav

SECRETARIAT

Shri Ram Autar Ram—*Deputy Secretary*

I. Representatives of the Ministry of Agriculture (Department of Agriculture and Cooperation)

1. Shri G. Balakrishnan, Secretary
2. Shri B.K. Taimini, Additional Secretary
3. Dr. P.K. Dixit, Additional Commr. (Crops)
4. Shri S.K. Malhotra, Joint Secretary

II. Representatives of the Ministry of Agriculture (Department of Agricultural Research and Education)

1. Dr. R.S. Paroda, Director General of Indian Council of Agricultural Research and Secretary
2. Dr. E.A. Siddiq, Deputy Director General, Crop Sciences, Indian Council of Agricultural Research
3. Dr. M.S. Chari, Director, Central Tobacco Research Institute, Rajamundry (A.P.)

III. Representatives of the Ministry of Commerce

1. Shri Tejendra Khanna, Secretary
2. Shri Asutosh Mishra, Executive Director, Tobacco Board

IV. Representatives of the Tobacco Institute of India

1. Shri R.A. Poddar, Chairman
2. Shri A.C. Sarkar, Director
3. Shri S. Mishra, Director
4. Shri R. Sujan, Director

5. Shri S. Thirumalai, Director
6. Dr. P.P. Singh, Scientist

2. The Committee took oral evidence of the aforesaid representatives of the Ministry of Agriculture and Ministry of Commerce with a view to ascertain as to how to control and ultimately reduce the production of tobacco in the country. The Committee also wanted to ascertain what research has been carried out to find/develop some alternative cash crops which could effectively substitute tobacco keeping in view the interest of the farmer engaged in the tobacco cultivation.

3. Shri G. Balakrishnan, Secretary, Agriculture Ministry, speaking about production of tobacco in the country informed that the four States namely. Andhra Pradesh, Gujarat, Karnataka and Uttar Pradesh altogether account for 90.3% of the total tobacco production. Shri R.S. Paroda, Director-Geneal, ICAR, informed that out of total production, 20% tobacco is used for cigarettes. He informed that 0.4 million hectare area is under tobacco cultivation and 550 million Kilograms of tobacco is produced annualy. He further informed that requirement in terms of labourers for tobacco cultivation is to the extent of 20 million people and about six million farmers are engaged in tobacco cultivation. According to him, the area under tobacco cultivation is constant and not increasing in the countries like Brazil, Zimbabwe and China.

4. Shri Tejendra Khanna, Commerce Secretary, informed the Committee that they are concerned only with the Virginia Tobacco (FCV) which comes under the regulation of Tobacco Board. According to him, the beedi tobacco and other tobaccos which form about 70% of the total production do not come under their control. He stated that out of 5,30,000 tonnes of total tobacco production, the FCV variety accounts for only 1,25,000 tonnes. Giving break-up of the total tobacco use, he stated that out of a total of 5,30,000 metric tonnes tobacco, 1,30,000 metric tonnes goes for cigarette production, 1,80,000 goes for beedi manufacture, and the rest of about 2,20,000 metric tonnes goes for chewing, manufacture of snuff and for making cigars etc.

5. On being asked about his assessment regarding decrease in tobacco production and export, he stated that in respect of FCV tobacco for which the Commerce Ministry has the overall administrative and regulatory responsibility, for 1991-92, the overall area under cultivation was 1,53,000 hectares and the production was 1,67,000 metric tonnes, in 1992-93, the area under cultivation was 1,41,000 hectares and the production 1,68,000 metric tonnes, in 1993-94, the area dropped to 1,23,000 hectares and production came down to 1,25,000 metric tonnes, and for 1994-95, according to the provisional figure received from Tobacco Board, the area has dropped to 1,10,000 hectares and the production to 1,07,000 metric tonnes.

6. Speaking about export of FCV tobacco, the Commerce Secretary stated that about half of it is exported and that is mainly to Russia, East

European countries and North African countries. However, of late, some countries have reduced the level of Purchasing from India, as they have started purchasing it from their neighbouring countries.

7. Regarding the impact on tobacco economy because of the initiative taken by the Health Ministry to curb tobacco use, the Commerce Secretary stated that there is still a strong demand for tobacco and any legislation cannot stop it overnight. He suggested that a Pragmatic approach should be followed to control the tobacco usage. People may be warned of the hazardous effect of the tobacco and there can be a social awareness campaign by educating the people on this subject. He said that farmers should be allowed to grow tobacco as long as demand is there and further it has a very high export potential also and people should have reasonable opportunity to tap that kind of market overseas. The Committee pointed out that as regards export, there is no objection, but the Government should not promote the use of tobacco internally.

8. Regarding the alternative use of tobacco, Shri Balakrishnan, Agriculture Secretary said that tobacco is being used in pesticides, paints and varnishing, food and fodder etc. so, it would be desirable to encourage the use of tobacco for such purposes and discourage is use for harmful purposes like smoking. Regarding cost of production, Shri G. Balakrishnan, Agriculture Secretary stated that the cost in terms of rupees per hectares for tobacco is Rs. 20,160; for cotton Rs. 16,000; for chillies Rs. 10,000; for groundnut Rs. 8,000, for mustard Rs. 4,400 and for gram is Rs. 5,000/-. The harvesting time for tobacco crops is about three months which is relatively shorter than the other crops.

9. Regarding research done in respect of replacing tobacco by some other cash crops, Shri Balakrishnan, Agricultural Secretary stated that Indian Council of Agricultural Research has conducted some research in this area. They have identified mustard, sunflower, soyabean, groundnut etc. as alternative cash crops vis-a-vis tobacco. He also said that the tobacco crop has an average return of Rs. 9,000 per hectare and the nearest crop is cotton which has an average return of Rs. 8,900 per hectare.

10. Speaking on the subject, Dr. Paroda, Director-General, ICAR, informed that Central Institute for Tobacco Research, Rajamundary, was established in 1947 and this Institution is mainly concerned with tobacco research and evolving new varieties of tobacco to suit our agro-climatic conditions. Research is also being carried out to reduce the tar and nicotine contents. According to him, the budget on tobacco research for 1993-94 has been approximately Rs. 6 crore. The research is also being done to find alternative uses of tobacco and also for alternative crops. He stated that compared to other crops, the tobacco crop is more assured than the crop like cotton and the farmer is able to dispose of this crop.

11. Regarding alternative cash crop to replace tobacco, Dr. Paroda,

Director-General, ICAR stated that cotton and chillies are the next best crops. However, the farmers would not like to switch over to some other alternative crops as there are problems of the requirement of hybrid technology, generation of employment, especially for women, pesticides etc. He informed that tobacco Research Institute has a "Krishi Vigyan Kendra" through which they are convincing the farmers to switch over to alternative crops. He stated that the tobacco has a low harvesting period of 3 months, the farmers grew other crops like green gram, black gram and short-duration rice during khariff season.

12. Regarding alternative uses of tobacco, Dr. Paroda, Director-General, ICAR stated that the tobacco leaves have a protein content of about 30% and it can be utilised as a source of protein in future. Research is being carried out to use it as an alternative source or protein. Dr. G. Balakrishnan, Agriculture Secretary stated that tobacco is also used in pesticides, paints and varnishing, food and fodder and in other industrial purposes, but the percentage of use in relation to these purposes is very small compared to its harmful uses.

13. As regards role of the Commerce Ministry, Shri Tejendra Khanna stated that they have no function as far as public awareness on the hazards of smoking is concerned. He stated that their role is confined only to the growth of FCV tobacco to see that there is no over-supply or under-supply situation and the demand and supply position is reasonably well maintained. He further stated that a mechanism of minimum support price for FCV tobacco is also maintained as recommended by the Agricultural Costs and Prices Commission, to take care of the situation when there are no buyers and prices collapse. However, the ruling market prices are generally significantly above the prevailing support prices.

(The representatives of the Ministry of Commerce and the Ministry of Agriculture then withdrew)

14. The Committee then heard the views of the representatives of Indian Tobacco Institute, New Delhi.

15. The representatives of the Indian Tobacco Institute stated that the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975 has achieved its purpose regarding health warnings etc. and there is no need for further legislation. They stated that the use of tobacco could be minimised by educating the people on the ill effects of tobacco. They also stated that there is a discrimination by the government in treating bidi and cigarettes regarding health warnings. No laws have been made regarding health warnings for bidis, whereas the smoking in the form of bidi is much more prevelant as compared to cigarette.

The witnesses then withdrew.

The Committee then adjourned.

MINUTES OF THE SIXTY-FOURTH SITTING OF THE COMMITTEE ON SUBORDINATE LEGISLATION (TENTH LOK SABHA) 1995-96

The Committee met on Wednesday, 29 November, 1995 from 15.00 to 16.45 hours.

PRESENT

Shri Amal Datta—*Chairman*

MEMBERS

2. Shri V. Dhananjay Kumar
3. Shri M.V.V.S. Murthy
4. Shri D. Pandian
5. Shri K.G. Shivappa
6. Shri Pratap Singh
7. Prof. K.V. Thomas
8. Shri Umrao Singh
9. Shri Ram Sharan Yadav

SECRETARIAT

1. Smt. Roli Srivastava — *Joint Secretary*
2. Shri P.D.T. Achary — *Director*
3. Shri Ram Autar Ram — *Deputy Secretary*
4. Shri B.D. Swan — *Assistant Secretary*

Representatives of the Centre of Indian Trade Unions

1. Shri P.K. Ganguly, Secretary, CITU
2. Shri S.N. Rao, General Secretary, AITUC
3. Dr. Rao, Tobacco Growers Association
4. Shri Subramaniam, Tobacco Growers Association
5. Shri R. Venugopal
6. Shri R.A. Mittal
7. Smt. Amarjeet Kaur
8. Shri S.M. Lal Jan Basha, M.P.
9. Dr. K.V.R. Chowdhary, M.P.
10. Dr. U. Venkateswarlu, M.P.

2. The Committee heard the views of the Central Trade Union Leaders

on rules/regulations framed under the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975.

3. At the outset the Chairman apprised the representatives about the fears expressed by the Central Trade Unions that the Tobacco Growers and those who are working in the tobacco industries would be adversely affected by the recommendations made by the Committee in their Report were baseless. The Chairman informed them that the Committee, by way of its recommendations, wanted to convince the Government about the need to take certain measures to implement the intention of the Act which was passed twenty years ago i.e. to warn the people of the possible dangers of smoking. In order to do away with the apprehensions expressed by the Central Trade Union Leaders, the Chairman gave them a brief account of the recommendations proposed by the Committee in their draft Report.

4. The Central Trade Union Leaders expressed the fear that recommending a ban on the production of sale of tobacco or tobacco products may result in the unemployment problems to millions of workers engaged in that field. He suggested that the solution to the rehabilitation of those workers and also their livelihood should be thought of. While agreeing that consumption of tobacco was undoubtedly injurious to health, they stressed that other socio-economic aspects should also be taken into consideration while curbing the production or sale of tobacco.

5. Regarding bringing beedi within the purview of the Act, the representatives expressed their views that it would only help the multinational companies which are trying to capture the beedi market as they would replace bidi with mini cigarettes. The Committee however, out that they have treated bidi and cigarettes on equal footing as injurious to health and further as per the expert medical opinion bidi is even more harmful than cigarettes. The Committee pointed out that people are just not aware of the health hazards of smoking and they should be made aware of it.

The witnesses then withdrew.

The Committee then adjourned.

MINUTES OF THE SIXTY-FIFTH SITTING OF THE COMMITTEE ON SUBORDINATE LEGISLATION

The Committee met on Tuesday, 5 December, 1995 from 15.00 to 17.00 hours.

PRESENT

Shri Amal Datta — *Chairman*

MEMBERS

2. Shri Prithviraj D. Chavan
3. Shrimati Bhavna Chikhalia
4. Shri Rajendra Kumar Sharma
5. Shri Pratap Singh
6. Shri Ram Sharan Yadav

SECRETARIAT

1. Smt. Roli Srivastava — *Joint Secretary*
2. Shri P.D.T. Achary — *Director*
3 Shri Ram Autar Ram — *Deputy Secretary*
4. Shri B.D. Swan — *Assistant Secretary*

2 to 12. ** ** **

13. The Committee thereafter considered and adopted their draft Twenty-first and draft Twenty-second Reports for being presented to the House during the ensuing session of the Parliament.

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** Omitted portions of the Minutes are not covered in this Report.

APPENDIX III

[*Vide* para 1.9 of the Report]

Bill No. 34-F of 1975

THE CIGARETTES (REGULATION OF PRODUCTION, SUPPLY AND DISTRIBUTION) ACT, 1975

An Act to provide for certain restrictions in relation to trade and commerce in, and production, supply and distribution of, cigarettes and for matters connected therewith or incidental thereto.

BE it enacted by Parliament in the Twenty-sixth Year of the Republic of India as follows:—

Short title, extent and commencement.

1. *(1)* This Act may be called the Cigarettes (Regulation of Production, Supply and Distribution) Act, 1975.

(2) It extends to the whole of India.

(3) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint.

Definitions.

2. In this Act, unless the context otherwise requires,—

(a) "advertisement" includes any notice, circular and other document and also includes any visible representation made by means of any light, sound smoke or gas;

(b) "cigarette" includes,—

(i) any roll of tobacco wrapped in paper or in any other substance not containing tobacco,

(ii) any roll of tobacco wrapped in any substance containing tobacco, which, by reason of its appearance, the type of Tobacco used in the filer, or its packaging and labelling is likely to be offered to, or purchased by, consumers as cigarette,

but does not include beedi, cheroot and cigar;

(*c*) "distribution" includes distribution by way of samples, whether free or otherwise;

(*d*) "export", with is grammatical variations and cognate expressions, means taking out of India to a place outside India;

(*e*) "foreign language" means a language which is neither an Indian language nor the English language;

(*f*) "import", with its grammatical variations and cognate expressions, means bringing into India from a place outside India;

(*g*) "Indian language" means a language specified in the Eighth Schedule to the Constitution, and includes any dialect of such language;

(*h*) "label" means any wirtten, marked, stamped, printed or graphic matter, affixed to, or appearing upon, any package;

(*i*) "package" includes a box, carton, tin or other container;

(*j*) "prescribed" means prescribed by rules made under this Act;

(*k*) "production", with its grammatical variations and cognate expressions, includes—

(*i*) packing labelling, re-labelling, of containers,

(*ii*) re-packing from bulk packages to retail packages, and

(*iii*) the adoption of any other method to render the product marketable;

(*l*) "sale", with its grammatical variations and cognate expressions, means any transfer of property in goods by one person to another, whether for cash or on credit, or by way of exchange, and whether wholesale or retail, and includes an agreement for safe, an offer for sale and exposure for sale;

(*m*) "specified warning" means the following warning, namely, "Cigarette smoking is injurious to health."

Restrictions on trade and commerce in, and production, supply and distribution of, cigarettes.

3. (*1*) No person shall, directly or indirectly, produce, supply or distribute cigarettes unless every package of cigarettes produced, supplied or distributed by him bears thereon, or on its label, the specified warning.

(*2*) No person shall carry on trade or commerce in cigarettes unless every package of cigarettes distributed, sold or supplied by him bears thereon, or on its label, the specified warning.

(*3*) No person shall import cigarettes for distribution or supply for a valuable consideration or for sale unless every package of cigarettes so imported by him bears thereon, or on its label, the specified warning.

(*4*) The specified warning shall appear on not less than one of the largest panels of the package in which cigarettes have been packed for distribution, sale or supply for a valuable consideration.

Manner in which specified warning shall be made.

4. (*1*) The specified warning on a package of cigarette shall be

(*a*) legible and prominent;

(*b*) conspicuous as to size and colour;

(*c*) in such style or type of lettering as to be boldly and clearly presented in distinct contrast to the other type, lettering or graphic material used on the package or its label and shall be printed painted or inscribed on the package in a colour which contrasts conspicuously with the background of the package or its label.

(*2*) Every package containing cigarettes shall be so packed as to ensure that the specified warning appearing thereon, or on its label, is, before the package is opened, visible to the consumer.

Restrictions on advertisements of cigarettes.

5. (*1*) No person shall advertise for the distribution, sale or supply of cigarettes, and no person shall take part in the publication of any such advertisement, unless the specified warning is included in such advertisement.

(*2*) Every specified warning included in an advertisement shall be conspicuous, legible and prominent.

(*3*) No person shall, whether directly or indirectly, import, for the purpose of carrying on any trade or commerce in cigarettes, any document, article or thing, containing any advertisement which violate the provision contained in sub-section (*1*) or sub-section (*2*).

Language in which the specified warning shall be expressed.

6. (*1*) Where the language used on a package containing cigarettes or on its label or in any advertisement relating to such package is—

(*a*) English, the specified warning shall be expressed in the English language;

(*b*) any Indian language or languages, the specified warning shall be expressed in such Indian language or languages;

(*c*) both English and one or more Indian languages, the specified warning shall be expressed in English as well as in such Indian language or languages;

(*d*) partly English and partly and Indian language or languages, the specified warning shall be expressed in the English language as well as in such Indian language or languages;

(*e*) any foreign language, the specified warning shall be expressed in the English language;

(*f*) partly any foreign language and partly English or any Indian language of languages, the specified warning shall be expressed in the English language as well as in such Indian language or languages.

(2) No package of cigarettes or its label or any adverstisement relating thereto shall contain any matter or statement which is inconsistent with, or detracts from, the specified warning.

Size of letters.

7. No warning shall be deemed to be in accordance with the provisions of this Act if the height of each letter used in such warning is less than three millimetres.

Power of entry and search.

8. (1) Any police officer, not below the rank of a sub-inspector, may, if he has any reason to suspect that any provision of this Act has been, or is being, contravened, enter and search, at any reasonable time, any factory, building, business premises or any other place where any trade or commerce in cigarettes is carried on or cigarettes are produced, suplied or distributed.

(2) The provisions of the Code of Criminal Procedure, 1973, shall apply to every search and seizure made under this Act.

Power to seize.

9. (1) If any police officer, not below the rank of a sub-inspector, has any reason to believe that, in respect of any package of cigarettes, the provisions of this Act have been, or are being, contravened, he may seize such package.

(2) No package of cigarettes seized under sub-section (1) shall be retained by any police officer for a period exceeding ninety days from the date of the seizure unless the approval of the District Judge, within the local limits of whose jurisdiction such seizure has been made, has been obtained for such retention.

Confiscation of packages.

10. Any package of cigarettes, in respect of which any provision of this Act has been or is being contravened, shall be liable to confiscation:

Provided that, where it is established to the satisfaction of the court adjudging the confiscation that the person in whose possession, power or control any such package of cigarettes is found is not responsible for the contravention of the provisions of this Act, the court may, instead of making an order for the confiscation of such package, make such other order authorised by this Act against the person guilty of the breach of the provisions of this Act as it may think fit.

Power to give option to pay costs in lieu of confiscation.

11. (1) Whenever any confiscation is authorised by this Act, the court adjudging it may, subject to such conditions as may be specified in the order adjudging the confiscation, give to the owner thereof an option to pay, in lieu of confiscation, such costs, not exceeding the value of the package in respect of which confiscation is authorised, as the court thinks fit.

(2) On payment of the costs ordered by the court, the seized packages shall be retruned to the person from whom they were seized on condition that such person shall before making any distribution, sale or supply of such packages, get the specified warning incorporated on each such package or on its label.

Liability to penalty.

12. Any person who carries on any trade or commerce in, or who produces, supplies or distributes, cigarettes, shall, if any package of such cigarettes does not contain the specified warning, be liable to pay a penalty not exceeding five times the value of the package of cigarettes or one thousand rupees, whichever is more, whether or not such package of cigarettes has been confiscated or is available for confiscation.

Confiscation or penalty not to interfere with other punishments.

13. No confiscation made, costs ordered to be paid or penalty imposed under this Act shall prevent the infliction of any punishment to which the person affected thereby is liable under the provisions of this Act or under any other law.

Adjudication.

14. Any confiscation may be adjudged, costs may be ordered to be paid or penalty may be imposed,—

(a) without any limit, by the principal civil court of original jurisdiction within the local limits of whose jurisdiction such confiscation has been made, costs have been ordered to be paid, or penalty has been imposed, as the case may be;

(b) subject to such limits as may be specified by the Central Government in this behalf, by such other court, not below a civil court having pecuniary jurisdiction exceeding rupees five thousand, as the Central Government may, by notification in the Official Gazette, authorise in this behalf.

Giving of opportunity to the owner of seized packages.

15. (1) No order adjudging confiscation or directing payment of costs or imposing penalty shall be made unless the owner of the package of cigarettes has been given a notice in writing informing him of the grounds on which it is proposed to confiscate such package, and giving him a reasonable opportunity of making a representation in writing within such reasonable time as may be specified in the notice against the confiscation or imposition of penalty mentioned therein, and, if he so desires, of being heard in the matter:

Provided that, where no such notice is given within a period of ninety days from the date of the seizure of the package of cigarettes, such package shall be returned, after the expiry of that period, to the person from whose possession it was seized.

(2) Save as otherwise provided in sub-section (1), the provisions of the Code of Civil Procedure, 1908, shall, as far as may be, apply to every procedding referred to in sub-section (1).

5 of 1908

Appeal.

16. *(1)* Any person, aggrieved by any decision of the court adjudging a confiscation, ordering the payment of costs or imposing a penalty, may prefer an appeal to the court to which an appeal lies from the decision of such court.

(2) The appellate court may, after giving to the appellant an opprotunity of being heard, pass such order as it thinks fit confirming, modifying or reversing the dicision or order appealed against or may send back the case with such directions as it may think fit for a fresh decision or adjudication, as the case may be, after taking additional evidence, if necessary:

Provided that an order enhancing any penalty or fine in lieu of confiscation or confiscating goods of greater value shall not be made under this section unless the appellant has had an opportunity of making a representation and, if he so desires, of being heard in his defence.

(3) No further appeal shall lie against the order of the court of appeal.

Penalty.

17. Any Person who,—

(a) sells, or distributes or supplies in the course of any trade or commerce, any package of cigarettes which does not contain, either on the package or on its label, the specified warning,

(b) produces, or supplies or distributes in the course of any trade or commerce, any package of cigarettes which does not contain, either on the package or on its label, the specified warning,

(c) advertises, or takes part in the advertisement of, cigarettes if such advertisement does not include the specified warning,

shall be punishable with imprisonment for a term which may extend to three years, or with fine which may extend to five thousand rupees, or with both.

Offences by companies.

18. *(1)* Where an offence under this Act has been committed by a company, every person, who, at the time the offence was committed, was in charge of, and was responsible to, the company for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly:

Provided that nothing contained in this sub-section shall render any such person liable to any punishment, if he proves that the offence was committed without his knowledge or that he had exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in sub-section *(1)*, where any offence under this Act has been committed by a company and it is proved that the offence has been committed with the consent or connivance of, or is attributable to any neglect on the part of, any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall be proceeded against and punished accordingly.

Explanation.—for the purposes of this section,—

(a) "company" means any body corporate and includes a firm or other association of individuals; and

(b) "director", in relation to a firm, means a partner in the firm.

Offences to be cognizable and bailable.

19. *(1)* Notwithstanding anything contained in the Code of Criminal Proeedure, 1973, an offence punishable under this Act shall be bailable.

(2) for the avoidance of doubts, it is hereby declared that every offence punishable under this Act shall be cognizable.

Protection of action taken in good faith.

20. No suit, prosecution or other legal proceeding shall lie against the Central Government or any State Government or any officer of the Central Government or any State Government for anything which is in good faith done or intended to be done under this Act.

Power to make rules.

21. *(1)* The Central Government may, by notification in the Official Gazette, make rules to carry out the provisions of this Act.

(2) In particular, and without prejudice to the genrality of the foregoing power, such rules may provide for all or any of the following matters, namely:—

(a) the manner in which the seizure of any package of cigarettes shall be made and the manner in which seizure list shall be prepared and delivered to the person from whose custody any package of cigarettes has been seized;

(b) procedure for the refund of any penalty imposed under this Act;

(c) any other matter which is required to be, or may be, prescribed.

(3) Every rule made under this Act shall be laid, as soon as may be after it is made, before each House of Parliament, while it is in session, for a total period of thirty days which may be comprised in one session or in two or more successive sessions, and if, before the expiry of the session immediately following the session or the successive sessions aforesaid, both Houses agree in making any modification in the rule of both Houses agree that the rule should not be made, the rule shall thereafter have effect only in such modified form or be of no effect, as the case may be; so, however, that any such modification or annulment shall be without prejudice to the validity of anything previously done under that rule.

Act not to apply to cigarettes which are exported.

22. Nothing contained in this Act shall apply to any cigarette or package of cigarettes which is exported:

Provided that nothing in this section shall be deemed to authorise the export of any package of cigarettes, not containing the specified warning to any country if the law in force in that country requires that the same or similar warning shall be specified on each package of cigarettes.

Explanation.—For the purposes of this section, any cigarette or package of cigarettes shall be deemed to be exported, if the necessary steps for export have already been taken notwithstanding that the actual export has not taken place.

APPENDIX IV

(*Vide* para 1.4 of the Report)

The comments/suggestions were received from the following Experts/ Organisations:

1. Ministry of Health and Family Welfare (Department of Health), New Delhi.
2. Indian Council of Medical Research (ICMR), New Delhi.
3. World Health Organisation.
4. Indian Cancer Society, New Delhi.
5. Dr. S.G. Vaidya, Goa Cancer Society, Goa.
6. The Tobacco Institute of India, New Delhi.
7. Sitaram Bhartia Institute of Science and Research, New Delhi.
8. Dr. G. K. Rath, All India Institute of Medical Sciences.
9. Dr. R. P. Sapru, Post Graduate Institute of Education and Research, Chandigarh.
10. Dr. S. Krishnamurthi, Cancer Institute, Madras.
11. Ministry of Human Resource Development (Department of Education), New Delhi.
12. Maruti Sewa Samiti, Udaipur.
13. Upbhokta Seva Sangh, Bihar.
14. Indian Institute of Consumer Studies, Bangalore.
15. Dr. V. Raman Kutty, Health Action by people, Trivandrum.
16. Consumer Education and Research Centre.
17. The Indian Tobacco Institute, New Delhi.
18. The Indian Tobacco Association, Guntur.
19. The Kalinga Beedi Workers Forum.
20. The Andhra Farmers Forum, Rajamundry.
21. The Indian National Trade Union Congress, New Delhi.
22. East Godavari District Tobacco Growers and Farmers Association, Andhra Pradesh.
23. All India Beedi, Cigar and Tobacco Workers Federation, Maharashtra.

APPENDIX V

(*Vide* para 1.12 of the Report)

The following health warnings were suggested by various Experts/ Organisations:—

New rotating health warnings on Cigarettes in Sweden

—Do not expose your colleagues to tobacco smoke. It is harmful and irritating.

—Tobacco smoke contains many carcinogeus.

—Tobacco smoke lowers resistence to infections, including those of respiratory tract.

—Do not smoke when children are present. Smoke irritates their respiratory tract.

—If you are pregnant or breast-feeding, do not smoke; both you and your child may be harmed.

—Smoke causes lung cancer.

—Smoking kills you.

—If is practically only smokers who have aheart attack before they are 50.

New rotating health warnings on Cigarettes in Finland

(1) Smoking is dangerous to your health.

(2) Tobacco is dangerous to your health.

(3) You will breathe easier if your do not smoke.

Ratating health warning in Ireland

—Smokers die younger.

—Cigarette can cause cancer.

Rotating health warnings in United Kingdom

—Cigarettes can seriously damage your health.

—Smoking may cost you more than money.

—The more you smoke, the more you risk your health.

Health warnings suggested by various Organisations

—Smoking is addictive and kills.

—Your tobacco smoke harms others.

—Cigarettes cause death from lung disease.

—Cigarettes cause permanent lung damage.

—Cigarettes cause lung cancer.

—Cigarettes cause mouth and throat cancer.

—Cigarettes reduce your life span.

—Cigarettes cause heart attacks.

—Smoking in Pregnancy harms the unborn child.

—Tobacco seriously damages your health.

—Smoking can cause loss of legs by gangrene.

—Smoking shorten your life.

—Smoking in dangerous.

—Smoking reduces your fitness.

—Smoking cause Emphysema.

—Smoking is a major cause of stroke.

—Smoking causes peripheral vascular disease.

—Most Smokers develop permanent lung damage.

—Stopping smoking reduces your risk of serious illness.

Some Slogans suggested by Indian Cancer Society

—Are you smoking?
Stub out the habit
Before it stubs you out

—Non-smoker's protest
"You smoke, I choke"

—Give smoking a kick in the butt
With every puff your health could be going up in smoke

APPENDIX VI

(*Vide* para 1.11 of the Report)

Expert opinion received from the Indian Council of Medical Research on the harmful effects of bidi smoking

Research on tobacco as a health hazard gained impetus from 1900 onward. In 1900 an increase in cancer of the lung was noted in Western countries particularly by Vital Statisticians. These data were taken as the starting point for studies on the possible relationship of smoking and other uses of tobacco to cancer of the lung and of cetain other organs like lip, oral cavity and pharynx. Similarly its relationship to coronary heart disease (CHD) and lower respiratory tract especially chronic obstructive lung disease (COLD) was also noted. The next important phase of work for starting comparison of available data was in 1930, when definite trends in mortality and disease incidence became more conspicuous. Since then a great variety of investigations have been carried out. Many of the chemical compounds in tobacco and in tobacco smoke have been isolated and tested. Numerous experimental models in lower animals have been worked out by exposing them to smoke, tars, gases and various constituents in tobacco and tobacco smoke. In human beings, the main evidence of effects of smoking and tobacco use upon the health has been made available through clinical and epidemiological studies supported by pathological observations.

India's major tobacco related cancers are of the lip, oral cavity and pharynx, oesophagus, larynx and lung. Tobacco use is believed to cause half of all cancers in men and about a quarter of all cancers in women. There is growing evidence that cancer of the cervix, the most prevalent of all female cancers in India, is also related to tobacco use.

Oral use of tobacco is wide spread in both sexes, with tobacco being chewed, applied to the gums as snuff. Tobacco is chewed with pan (betel leaf). It is even used in a tobacco paste knows as "creamy snuf." Tobacco is thought by many to have medicinal proporties and there is widespread ignorance of its risks.

Smoking habits include traditional hookah, which filters the smoke through water, manufactured cigarettes, and bidis, cheroots-short conical tubes of tobacco wrapped in tendu leaf which are even more popular than cigarettes. In some areas reverse (Chutta) smoking is customary, with the cheroot or bidi being placed with the lighted end inside the mouth.

Chemical Analysis of Bidi and Cigarette

Bidis are the common man's smoke in India, one packet consisting of ten bidis costing about one rupee. Each bidi contains about 0.2-0.3 g. Sun dried tobacco. The bidi smoker takes at least two puffs per minute compared with a cigarette smoker who only takes one. Chemical analysis of bidi smoke (2 puffs/min.) shows that the tar content ranges from 44.9 to 51.4 mg. and nicotine 1.71 mg., considerably higher per gram of tobacco than the toxic yields of U.S. cigarettes (1 puff/min.), tar content ranges 27.9 to 31.5 and nicotine 1.78 mg. Carbon monoxide yield is higher in bidi than in cigarette smoke partly because the tendu leaf in which the tobacco is wrapped is less porous than paper (Hoffman, Sanghvi & Wynder, 1974).

Epidemiological Evidence

(1) In an epidemiological population-based study carried out in Mainpuri District of Uttar Pradesh in India. (Wahi 1968), where all the cases of oral cancer were proved histologically, it was found that the annual incidence of oral and oropharyngeal cancers was 214 per one million population. The incidence rate of oral cancer in Mainpuri District was considerably higher when compared with any other registry figures of the world, which vary from 5 to 20 in one million population. In this study, the risk was found to be significantly higher among bidi smokers (period prevalence rate 3.60 per 1000 population) than cigarette smokers (period prevalence rate 0.95 per 1000 population) (Table 1.)

TABLE 1

Prevalence rate of oral cancer in relation to type of smoking

Type of smoking	Estimated Population	Number of Cases	Period Prevalence per 1000
Bidi	30400	109	3.60 (+ +)
Cigarette	1050	1	0.95
Hookah	5410	10	1.85
Cigar	80	2	25.00 (+ +)
Chilum	72110	55	0.76
Bidi & Cigarette	920	0	—
Bidi & Chilum	3490	2	0.57
Hookah & Chilum	11190	32	2.86 (+ +)

Type of smoking	Estimated Population	Number of Cases	Period Prevalence per 1000
Bidi, Hokah & Chilum	0	5	—
unknown	210790	126	0.60
Total	349710	346	0.99

+ + indicate actual rate was significantly higher than the expected rate by more than 3 standard error.

(2) In a retrospective study of cancer at high risk sites in the region of the head and neck was under taken at the Bombay cancer registry (Jussawalla & Deshpande, 1968) to evaluate the effects of tobacco when chewed or smoked. There is sufficient evidence available today to indict chewing and smoking of tobacco as factors of great importance in the etiology of oral, pharyngeal, laryngeal and oesophageal cancers the most common sites affected by the disease in Greater Bombay. The relative risk of developing oral pharyngeal, laryngeal, and oesophageal cancers from smoking bidi, cigarette, and a combination of both show higher relative risk for bidi smokers (Table 2).

TABLE 2

Relative risk of developing oral, pharyngeal, laryngeal and oesophageal cancers from smoking bidi, cigarette and a combination of both (Assuming risk among non-smokers to be unity).

Bidi smokers

Site Group	Cancer cases		Control Group		Relative Risk	Chi-Square
	Non-Smokers	Bidi Smokers	Non-Smokers	Bidi Smokers		
Cancer Group	800	979	1446	310	5.7	531.3 ***
oral cavity	249	120	1446	310	2.3	40.8 ***
oropharynx	140	424	1446	310	14.1	650.1 ***
nasopharynx	8	8	1446	310	4.7	9.2 ***
hypoparynx	36	30	1446	310	3.9	30.6 ***
larynx	197	291	1446	310	6.9	341.0 ***
oesophagus	170	106	1446	310	2.9	61.8 ***

Cigarette smokers

Site Group	Cancer cases		Control Group			
	Non-Smokers	Cigarette Smokers	Non-Smokers	Bidi Smokers	Relative Risk	Chi-Square
Cancer Group	800	129	1446	201	1.2	1.4 NS
oral cavity	249	22	1446	201	0.6	3.4 NS
oropharynx	140	45	1446	201	2.3	20.0***
nasopharynx	8	1	1446	201	0.9	0.2 NS
hypopharynx	36	2	1446	201	0.4	1.1 NS
larynx	197	36	1446	201	1.3	1.7 NS
oesophagus	170	23	1446	201	1.0	<0.01 NS

Bidi (B) + Cigarette (C) Smokers

Site Group	Cancer cases		Control Group			
	Non-Smokers	B + C Smokers	Non-Smokers	B + C Smokers	Relative Risk	Chi-Square
Cancer Group	800	94	1446	29	3.4	28.6****
oral cavity	249	11	1446	29	2.2	4.1 *
oropharynx	140	17	1446	29	6.1	6.1***
nasopharynx	8	—	1446	29	—	—
hypopharynx	36	1	1446	29	1.4	0.1 NS
larynx	197	22	1446	29	5.6	39.9 ***
oesophagus	170	3	1446	29	0.9	<0.01 NS

*significant at $P < 0.05$, ** significant at $P < 0.01$ and *** significant at < 0.001 level of significance. NS—not significant at $P < 0.05$ level of significance.

(3) In a retrospective study, 792 males with lung cancer (42.6% of 1861 male cancer patients) for whom detailed smoking history was available, were matched for age and community with randomly selected controls, obtained from the voters list of the Greater Bombay Corporation, and significant statistical association was found between tobacco smoking and lung cancer. All smokers appear to be at high risk (16.8) compared with non-smokers. The relative risk in bidi smokers was however 19.3 even higher than in cigarette smokers (8.6). Hindu, Muslim and Christian smokers are apparently at identical risk. A dose-response relationship was found in bidi and cigarette smokers (Jussawalla and Jain, 1979).

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TOBACCO
AND
HEALTH

The Indian Scene

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Tobacco Related Cancers

L.D. Sanghvi

Tobacco related cancers in India can be broadly classified on the basis of major risks of different tobacco habits. Tobacco chewing has a major risk for oral cancer; bidi smoking, for cancers of the pharynx and larynx and cigarette smoking, for lung cancer. Historically, tobacco chewing and hookah smoking were common habits in early part of the century. They have been gradually replaced by bidi smoking. Cigarette smoking which is a late comer on the Indian scene is also gaining momentum. On the basis of the data collected under the National Cancer Registry Project, is is estimated that almost one-third of all new cancer cases i.e. 190,000 cancer cases are related to tobacco habits. On the basis of these estimates, there will be at any given time about 500,000 cancer cases related to tobacco habits, leading to more than 100,000 deaths every years. Trends of different tobacco habits during the last two decades suggest that in the coming decades, cancer related to bidi and cigarette smoking will be increasing very rapidly.

Introduction

India ranks third in the world tobacco production. Of the 280 million kg. of tobacco cleared for home consumption per year (average for 1980-83), 86% was smoked, 13% was chewed and about 1% was used as powdered snuff. Among the smoking habits, bidi takes the leading position followed by cigarette. Other smoking habits include hookah (water pipe); chutta (a kind of cigar) and chilum (clay pipe) which are on their way out. Among the chewing habits, use of tobacco with pan (betel quid) or with time are the common ones.

Several epidemiogical studies carried out in the country have confirmed the high risk of tobacco habits for cancers of the upper alimentary and respiratory tracts. These cancers account for almost a third of all cancers in India. Risks of indigenous tabacco habits have also been identified for some other cancers (such as stomach and uterine cervix) which are in need of confirmation. Studies on chemical analysis of chewed tobacco, bidi and local cigarette have been carried out. They have revealed high levels of carcinogenic and toxic chemicals supplementing the epidemiogical evidence. There is a changing pattern of tobacco habits in the country. Tobacco chewing and hookah smoking which were common habits prior to Second World War are being replaced by bidi and cigarette smoking.

These changes will have major impact on cancer incidence and pattern in the coming decades. All these aspects will be briefly reviewed in this paper.

Epidemiology

India has a long tradition of research in the field of cancer epidemiology. Earliest observations were made on the role of tabacco chewing habit in the actiology of oral cancer which was very common in south India (1). Subsequent studies have confirmed its role not only in oral cancer but also in the cancers of the pharynx, larynx and oesophagus. Bidi smoking habit was already common during the Second World War. Its role in the actiology of cancer was brought out in a case-control study carried out at the Tata Memorial Hospital in the early fifties (2). The study showed that bidi smoking had a significant role in the cancers of the oral cavity, pharynx and oesophagus like tobacco chewing habit, but its major effect was on cancers of the oropharynx. The study also showed that highest relative risks for all these sites were found in those persons who smoked bidi as well as chewed tobacco. Independent studies carried out in the country have confirmed these observations (3).

for graph

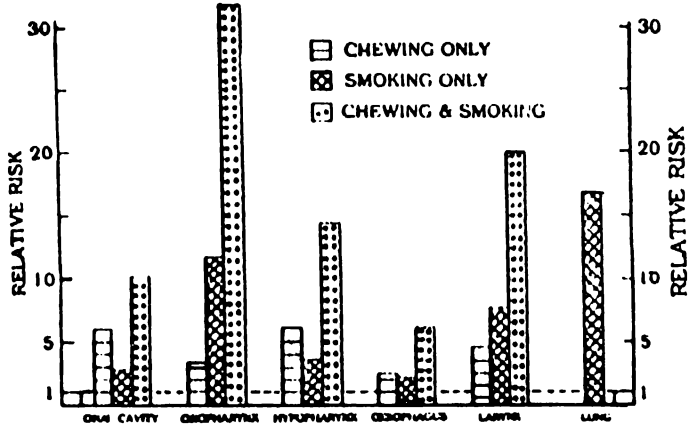


Fig. 1. Relative risk of developing cancers of the upper alimentary and respiratory tracts among persons addicted to chewing and smoking habits.

Cigarette smoking habit has been a late comer on the Indian scene. Lung cancer became a visible problem in the Indian hospitals in the sixties and seventies. A study carried out in early seventies showed that risk of bidi smokers was equally high if not higher as cigarette smokers for developing cancer of the lung, with a dose-response relationship (4). This was confirmed in a subsequent study (5).

Latest available values of relative risks of different tobacco habits for cancers of the upper alimentary and respiratory tracts are shown in Figure 1.

Toxic chemicals in tobacco products

Evidence given above on epidemiology of tobacco related cancers has been supplemented by experimental and laboratory work on tobacco products. A brief summary of this work is given below (6—8):

Chewing tobacco: Work carried on the two species of tobacco viz. *N. Tabacum and N. rustica* has provided definite evidence of the presence of several N. nitroso compounds which are potent carcinogens. *N. rustica* a tobacco species which is used mainly in chewing and smoking of hookah, has higher levels of tobacco specific nitrosamines compared to *N. tabacum.*

Bidi: In view of the high risk for cancers of the upper alimentary and respiratory tracts, chemical analysis of bidi smoke was carried out with the help of a U.S. laboratory in 1974. The results were very striking and showed that bidi delivered large amount of tar, nicotine and other toxic chemicals. Subsequent studies carried out in India confirmed these findings. It showed that a regular bidi (60 mm) delivers about 25 mg of tar and 2 mg of nicotine. A long bidi (75—80 mm) delivers 40 mg of tar and 2.5 mg of nicotine. Carbon monoxide level in bidi smoke is much higher than in cigarette smoke as tendu leaf used as a wrapper for bidi is much less porous than cigarette paper.

Cigaretee: Indian cigarettes which have also been studied by us have revealed high levels of tar (19—28 mg) and nicotine (1.0—1.8mg) compared to current levels in the West. The actual delivery of these toxic chemicals in the lung is much higher in India when it is taken into account that an Indian smoker takes 2 puffs per minute compared to 1 puff in the West. Filters used in Indian cigarettes are about half in Lengh of those used in the West and their filtration efficiency is very low.

Burden of tobacco related cancer

National Cancer Registry Project of the Indian Council of Medical Research has provided estimates of the burden of tobacco related cancer in India (9). These estimates, which are given in Table 1, are based on the material for 1982 and 1983 from the three population based registries in Bangalore, Bombay and Madras, and three hospital registries in Chandigarh, Dibrugarh and Trivandrum.

Table 1. Burden of tobacco related cancer in India, Estimates for 1986

	Male	Females	Total
Total population (millions)	390	370	760
Crude rate/100,000	70	80	75
No. of new cancer cases per year	273,000	296,000	569,000

	Male	Females	Total
New cases related to tobacco habits:			
Mouth	30,888	24,642	55,530
Pharynx Larynx	42,159	9,435	51,594
Oesophagus	20,280	14,874	35,154
Lung	23,673	4,477	28,150
Others	13,000	6,572	19,572
Total	130,000	60,000	190,000
	(48%)	(20%)	(33%)

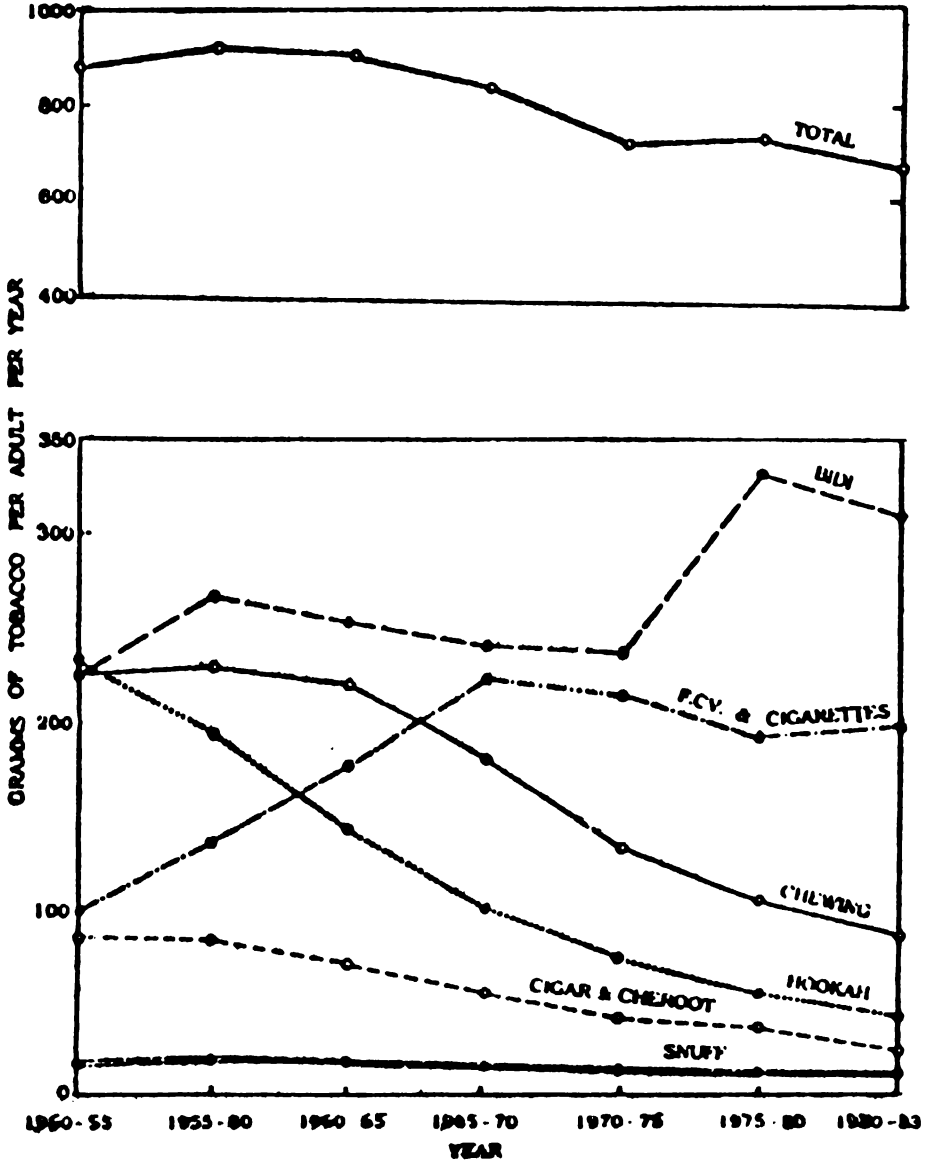
Estimates are shown separately for males and females for commonly affected sites namely, mouth, pharynx and larynx, oesophagus and lung. Some other sites related to smoking habits known from the experience of the West such as bladder, pancreas etc. are taken as others. Stomach cancer for which one study has provided strong evidence of high risk of bidi smoking is not taken into account. Cancer of the uterine cervix for which cigarette smoking has been shown to have definite risk is also not included. It is likely that tobacco chewing and bidi smoking may show risks for cancers not studied so far. From these considerations, the present estimate of tobacco related cancers is a conservative one.

It is interesting to make a comparison of the burden of tobacco related cancers in India and in U.S.A. (10). In U.S.A. cancer mortality atteributed to tobacco is 43% in men and 15% in women; overall mortality in the two sexes is 30%. In India, cancer morbidity related to tobacco is 48% in men and 20% in women with an overall estimate of 33% for the two sexes. Thus there is a general comparability of the burden of tobacco related cancers in the two countries. There is, however, a major difference in the cancer sites affected in the two countries. Whereas in U.S.A. 68% of tobacco caused cancer deths were due to lung cancer. In India, 75% cancers related to tobacco were found in mouth, pharynx and larynx and oesphagus, lung cancer accounted for only 15% of cases.

Trends in tobacco consumption

Directorate of Tobacco Development, Ministry of Agriculture, Govt. of India provides annual figures of tobacco released for different purposes for home consumption (11). Figures available since 1950 have been used here to calculate tobacco consumption per adult (aged 15 years and above) per year and are summarised in Figure 2.

Fig. 2. Tobacco consumption in grammes per adult per year in India from 1950-1955 to 1980-1983.



It will be seen from the figure that during the period of three decades, tobacco consumption has declined from an average of 900g during 1950-55 to about 700g during 1980-83. There is also a major change in the consumption pattern during this period. Consumption for bidi and cigarette has gone up whereas consumption for chewing, hookah and for other purposes has declined.

Very little reliable information is available about the tobacco habit patterns in the population in recent years. On the basis of some careful surveys carried out in the past (12), the figures of tobacco consumption given above can be used to compute habit patterns in the population. Table 2 gives this type of reconstruction based on the following assumptions; bidi and cigarette smokers, somke on an average 10 pieces per day, and chewers consume 3g of tobacco per day. A cigarette on an average has 1g of tobacco whereas bidi contains only 0.25g. Thus a cigarette smoker smokes 3.65kg, a bidi smoker 0.91kg. and a chewer consumes 1.1kg of tobacco per year.

Table 2. Estimated number of adults (in millions) aged 15 years and over in India with different tobacco habits.

from 1950—55 to 1980—83

Tobacco habit	1950—55	1965—70	1980—83
Cigarette smoker	6	18	22
Bidi smoker	58	79	136
Tobacco chewer	47	49	31
Total population	230	300	400

Table 2 gives the estimated number of adults (in millions) aged 15 years and above with bidi, cigarette and tobacco chewing habits. Other tobacco habits which have declined in recent years have not been taken into account. No attempt has been made to separate the habits of males and females, although it is known that they are very different. Most of the bidi and cigarette smokers are males whereas almost an equal number of males and females chew a large proportion of tobacco. Among the males, 10—15% have both the habits *i.e.* they smoke bidis as well as chew tobacco.

There is a lag period of about three decades before the prevalence of tobacco habits gets translated as effect on the occurrence of cancer. Current estimates of tobacco related cancers given in the previous section have to be seen in the light of tobacco habits prevalent during 1950—55. Changing trends of tobacco habits during the subsequent periods suggest that with a decline of chewing habit, cancers of the oral cavity are likely to decline. On the other hand, cancers related to bidi and cigarette smoking namely, pharynx, larynx and lung will be increasing very repidly. These cancers are more difficult to detect and to cure than oral cancer.

Smoking and Cardiovascular Disease

(With special reference to Cigarette vs. Bidi Smoking)

S.P. Gupta

Cigarette smoking has come to be universally recognised as a formidable factor in the morbidilly and mortality of coronary heart disease (CHD). The few epidemological studies available from this country reveal that both its prevalence and incidence may not be too different from that in the Western countries, at any rate, in large cities.

The pattern of smoking in India is quite different from that prevalent in the West, but precise data is meagre on the type and extent of smoking in different age groups, in men and women and in various communities, urban and rural. Further, only preliminary information is available regarding differences in biological effects of cigarette and bidi tobacco. Our studies so far indicate that cigarette and bidi smoke have similar effect on platelet aggregation and blood sugar. Alterations of a somewhat lesser magnitude have been observed in both free fatty acid and left ventricular performance following smoking of bidi as compared to cigarettes.

Obviously there are wide gaps in our knowledge, and more work is needed to resolve the various issues in the association of indigenous tobacco habits and CHD.

Introduction

Smoking is universally recognized as one of the worst health hazards. In the successive annual reports of the U.S. Surgeon General since 1964, cigarette smoking has been identified as the single most importance source of preventable morbidity and premature mortality. It has been estimated that an average of 5½ minutes of life is lost for each cigarette smoked in cigarette smokers of 5-8 years duration (1).

Smoking has been linked with a number of diseases. During the first half of this century hazards of smoking chiefly centered round respiratory disorders viz., chronic obstructive airway disease (chronic bronchitis, emphysema), and lung cancer. However, while this association continues to hold true, the focus of attention during the past three decades has shifted to noxious effects of smoking on cardiovascular system, specially coronary heart disease (CHD).

Cigarette smoking and coronary heart disease—How strong is the association?

Cardiovascular diseases are currently regarded as the number one killer of mankind, and it is estimated that in the U.S. 30 to 40% of all deaths from CHD are attributable to cigarette smoking (2). The 1983 Surgeon General's report (2) states that "Cigarette smoking should be considered the most important of the known modifiable risk factors for CHD in the United State". The pooled data from five large studies showed that men 40—59 years of age who were smoking a pack or more of cigarettes per day had a risk for a first major coronary event that was 2.5 times as high as that for non-smokers, with a strong dose-response relationship (3).

According to these reports, cigarette smoking confers approximately the same average increase in the risk of CHD as do hypertension and hypercholesterolaemia, but additionally, acts synergistically with these other risk factors on mortality from the discase. Further women whose smoking patterns are similar to those of men have a similar increased risk of mortality and morbidity from CHD as compared with non-smokers. Following cessation of smoking, the risk of CHD attributable to smoking decreases by about 50% after one year, though it approaches that of a persons who has never smoked only after a decade or more (2).

What is the data available from India?

Compared to the wealth of information on smoking and cardivascular disease available from Western countries, very little is known about the prevalence or incidence of CHD in our population at large, and even less about the extent of smoking in our communities and its relationship with CHD. Gupta and Malhotra (4) reported the disease to be more than twice as common in urban area as in rural population in both men (45.3 and 17.2/1000) and women (28.1 and 12.6/1000). Table 1 gives the prevalence of CHD as reported in some of the Indian (4.5) and Western (6—8) studies and Table 2 shows the Incidence of acute my ocardial infarction based on a total population study in Rohtak city reported by us (9) (5.7/1000 for men and 2.3/1000 for women). This is an approximate estimate.

Table 1. Prevalence of coronary heart disease

Prevalence rate per-thousand in	Rohtak India (Gupta) 1975	Chandigarh, India (Servothem) 1968	Framing-ham. U.S.A. (Kannel) 1976	Tecumseh, U.S.A. (Epstien) 1965	Busclton, Australia (Welbourn) 1969
Men	45.3	65.4	96.0	66.0	60.9
Women	28.1	47.8	38.0	47.0	58.0

Table 2. Incidence of acute myocardial infarction (Rohtak, Haryana)

Age group years	Men		Women	
	Population	Incidence per 1000	Population	Incidence per 1000
30—34	3722	0	3347	0
35—39	3371	0.8	3126	0.6
40—44	3646	1.3	2952	0.6
45—49	2338	6.4	1944	3.0
50—54	2137	9.3	1995	3.5
55—59	1714	10.5	833	2.4
60—64	1362	13.2	857	3.5
65—69	1033	13.6	750	4.0
70 & above	1342	18.6	1220	12.3
Total	20.665	5.7	17.024	2.3

of the disease incidence in small cities. The incidence in larger cosmopolitan cities would be higher, as in Chandigarh series (5), but even at this rate about 10,000 fresh cases of myocardial infarction can be expected annually (between 40—69 years of age) in the city of Delhi.

Pattern of smoking in India

Tobacco smoking amongst men is perhaps as widely prevalent in India as in Western countries, but the pattern of smoking is quite different. Tobacco is smoked by nearly all of the rural population as also the lower socio-economic groups in urban areas in the form of bidis, and by the middle and upper urban classes as cigarettes. Less common types of smoking include 'hukkah', 'chilum' and 'chutta' amongst the rural population, and cigar and pipe by the urban elite. Precise figures on the relative frequency of each of these types of smoking are available for only certain pockets of our population.

Relative risk of cigarette and bidi smoking

An average Indian bidi has about 330 mg of tobacco compared to 1 g in each cigarette. The effects of tobacco smoking on cardiovascular system

are mediated through nicotine and carbon monoxide. Cigarettes and bidis marketed in India have a high nicotine yield (1.0-1.8 mg per cigarette and 1.7-2.0 mg per bidi) (10-11). Nicotine content of samples of tobacco used in our studies has been reported by Central Tobacco Research Institute, Rajahmundry to be higher in bidi tobacco compared to cigarette tobacco. Nicotine operates through increased levels of catccholamines which elevate heart rate and systolic pressure (thus increasing myocardial oxygen consumption), enhance platelet aggregation, and increase circulating levels of free fatty acids and blood sugar. We studied the effect of smoking equivalent amount of cigarette and bidi tobacco and lettuce leaves (1 g each) wrapped in identical paper in a single blind manner on these parameters known to be involved in the pathogenesis of CHD. The results show that:

(a) Platelet aggregation and blood sugar increase significantly (especially the former) after both cigarette and bidi smoking, but there was no difference between two types of smoke.

(b) Free fatty acids (FFA) also increased after both cigarette and bidi smoking. The increase was slightly more in cigarette smokers than bidi smokers and both were much higher than in control (lettuce) smokers.

(c) No appreciable increase occurred in serum cholesterol after either cigarette or bidi smoking.

One of the factors which would adversely affect platelet aggregation but not FFA is carbon monoxide in the tobacco smoke. Our preliminary work suggests that higher levels of carboxyhaemoglobin (COHb) result following smoking of bidi tobacco than an equal amount of cigarette tobacco, and this may account for the observed lack of difference in platelet aggregation, following cigarette and bidi smoking. However, Jindal *et. al.* (12) have reported higher levels of COHb in cigarette smokers. Obviously, more work needs to be done in this direction.

Precise data regarding the relative risk of cigarette and bidi smoking on CHD is not available from this country. In our urban-rural total population studies already referred to, no appreciable difference was seen in prevalence of CHD amongst smokers and non-smokers either in rural or urban group. A more recent case-control study from Bombay (13) has estimated a slightly greater risk for bidi smokers than cigarette smokers to develop CHD (bidi smokers : 3-fold, cigarette smokers : 2-fold) and myocardial infarction (bidi smokers: 4-fold, cigarette smokers: 3-fold) compared to non-smokers.

Acute effect of cigarette and bidi smoking on myocardial performance

How do these (and possible many other) effects of smoking alter left ventricular functions. This was studied by us (14) on the basis of systolic time intervals (STI) in acute experiements, in both coronary and non-coronary subjects. The results show that:

(a) PEP/LVET ratio decreased ($P < 0.001$) in normal subjects (i.e. left ventricular performance improved), but lengthened in coronary patients ($P < 0.001$) after both types of smoke.

(b) The alteration in PEP/LVET ratio (and therefore, in myocardial functions) was less with bidi smoking in both groups of patients.

Effect of wrapping material

The wrapping material used in cigarettes and bidis is entirely different. Does this affect the quality of mainstream smoke which is in inhaled? This was studied (15) by comparing the effects of smoking 1 g bidi tobacco divided and wrapped in three cigarette papers with that of smoking three marketed bidis. No difference was observed in either FFA levels or platelet aggregation. COHb levels were appreciably higher after smoking marketed bidis, but the difference fell short of statistical significance. Thus the nature of the wrapping material does not appear to influence the quality of tobacco smoke.

Conclusions

Cigarette smoking has come to be universally recognized as a formidable factor in the morbidity and mortality of CHD. The few epidemiogical studies available from this country reveal that both its prevalence and incidence may not be much different from that in the Western countries, at any rate, in large cities.

The pattern of smoking in India is quite dfferent from that prevalent in the West, but precise data is meagre on the type and extent of smoking in different age-groups, in men and women, and in various communities, urban and rural. Further, only preliminary information is available regarding differences in biological effects of cigarette and bidi tobacco. Our studies so far Indicate that while cigarette and bidi smoke resemble in respect of their effect on platelet aggregation and blood sugar, there are differences in some other parameters. Alterations of a somewhat lesser magnitude have been observed in both FA and left ventricular performance following smoking of bidis as compared to cigarettes. More work is needed to resolve these issues.

Obviously, there are wide gaps in our knowledge, and research is required to obtain precise data on the various aspects of smoking mentioned above and its relationship with CHD and other cardiovascular diseases in this country. Keeping in view the urgency and complexities of the whole problem, a programme of Health Operational Research should

be mounted starting from formulation of project(s), through collection and analysis of relevant data by a suitable sample, to testing and implementation of the solution. Ideally, such a programme should also include measures to help tobacco addicts quit smoking by conventional as well as non-conventional measures such as acupunture, jogging (and possibly yoga), which can increase plasma beta endorphin levels, since smoking addiction may be due to increased endorphin release.

Studies on Coronary Heart Disease in Relation to Smoking

Perin N. Notani

Cigarette smoking as a major risk factor for coronary heart disease (CHD) has been well documented in several studies undertaken in the western countries. In India, the predominant form of smoking is bidis. Bidi smoke has been demonstrated to deliver higher levels of tar, nicotine and carbon monoxide than western cigarettes. In view of these observations. It becomes very pertinent to study the health hazards due to bidi smoking. A cohort study undertaken in two socio-economic groups showed that bidi smokers belonging to the blue collar group carried more than 3 fold risk of developing CHD and in particular myocardial infact, as compared to the group without any tobacco habit. Similar, but slightly lower, risks for cigarette smokers were observed in this group.

Besides the epidemological observations, there is also experimental evidence, reported in literature, to show that bidi smoke has equally deleterious effect as cigarette smoke on some of the parameters (pulse rate, blood pressure, platelet aggregation time and serum free-fatty acid levels), known to be related to the pathogenesis of this disease.

In addition to smoking, hypertension and elevated serum cholesterol levels are established risk factors. But in view of the reported low cholesterol levels in the Indian population, smoking assumes the status of being the most important modifiable risk factor, which if eliminated from the population can result in prevention of almost 30%—50% of the new cases of coronary heart disease from occurring (in males in the age group 40 to 59 years).

Introduction

Several studies carried out in the western countries have implicated cigarette smoking as a risk factor for cardiovascular diseases, cancer of certain sites. In particular lung, and chronic obstructive lung disease. The first major propsective study was reported in 1958 by Hammond and Horn for the US population (I). In that study, overall, cigarette smokers were found to carry 70% greater risk of dying from coronary heart disease (CHD) than nonsmokers. The death rate was more than twice as great in men who smoked over a pack a day and authors also noted a consistent dose-response relationship.

In the interventing 30 odd years numerous additional epidemiological studies. In geographically diverse regions, and involving different methodologies have been conducted, altogether representing 20 million person years of observation and they have come up with remarkably uniform results, that cigarette smokers have much higher death rate from CHD than nonsmokers (2).

In India varied forms of smoking besided cigarette smoking is prevalent. Bidi obtained by wrapping 0.2 to 0.3g of tobacco in tendu leaf *(Diospyros melanoxylon)* is the commonest and the most popular form. In fact, 85% of world's bidi production is accounted for by India. Furthermore, it has been shown that bidi smoke contains higher levels of the noxious components *viz.* tar, nicotine and carbon monoxide as compared to cigarettes (3. 4). Nicotine and carbon monoxide particularly contribute to the increased risk of cardiovascular disease in smokers.

In view of these observations, it becomes pertinent to review available information on the association of smoking, and bidi smoking in particular, with reference to CHD.

Epidemological Studies

Descriptive studies: Very limited information is available on the prevalence of the disease in the country. A survey in Haryana region carried out in 1970's covering the population in the age group 30 and above, reported the prevalence to be much lower in the rural areas than semi-urban and urban areas, both in males (17.2, 45.3 and 65.4/1,000 respectively) and females (12.6, 28.1 and 47.8/1,000 respectively) (5.6). These rates are comparable to those reported in earlier studies cited by Sapru (7).

Besides, a few studies describing the characteristic of CHD patients in a hospital set up have also been reported (8). In a study (9) of 100 young myocardial infarction patients from South India, smoking was considered to be the commonest risk factor, reported in 76% of patients. Hypertensions, diabetes and cerebrovascular accident was ranked second (2.6%), obesity third (25%), and high serum cholesterol levels (more than 250 mg%) ranked fourth, being observed in 23% of patients.

Analytical studies: A case control study carried out in patients attending the cardiology clinic at AIIMS, New Delhi, implicated cigarette smoking to be a risk factor for the CHD patients (10).

Concerted effort to study the role of bidi smoking was made in a case-control study (II), where the data on 185 CHD patients and matched controls were obtained from a hospital in Bombay. In this study, bidi

smokers had a 3-fold risk for CHD and 3.8 fold for the subset of myocardial infarct (MI) compared to nonuser of tobacco, whereas cigarette smokers had 2.5-fold and 3.3 fold risk for CHD and MI respectively.

The only cohort study, that reports risks of bidi and cigarette smokers for developing coronary heart disease, was carried out by us in two socio-economic groups. The methodology is described in detail elsewhere (12). Briefly, one cohort was of white collar workers, comprising of clerical and supervisory staff, junior and middle level executives, belonging to 19 organizations. The others was a blue collar group consisting of mill workers, mechanics, bus drivers and conductors. Over six and a half thousand (6742) individuals of the white collar group and 5981 blue collar workers were enrolled in the study. As the study population belonged to organized groups, follow-up did not pose a serious problem. The period of follow up varied from one to five years. Individuals in the cohort were kept under surveillance by regular six-monthly visits to the organizations. There was loss to follow up of 2% in the white collar group and 10% in the blue collar group.

Table 1. Estimates of rate ratios (RR) for incidence of coronary heart disease (CHD) and the subset of myocardial Infarol (MI), for two cohorts (smokers *vs.* nonusers of tobacco).

Cohort of	Type of smoker	Person Years	Rate ratios with 95% confidence intervals			
			CHD		MI	
			RR	(n)	RR	(n)
Blue collar workers	Bidi	1512.5	3.27* (1.5.7.2)	(18)	3.04* (1.1.87)	(10)
	Cigarette	1128.5	3.01* (1.3.7.1)	(12)	2.76* (0.9.8.3)	(7)
	Nonuser of Tobacco	2211.0	1.00	(8)	1.00	(5)
White collar workers	Bidi	317.5	Sample size small			
	Cigarette	3046.0	1.13 (0.7.1.8)	(26)	1.63 (0.9.3.1)	(13)
	Nonuser of tobacco	10646.5	1.00	(84)	1.00	(29)

v Cohorts: All males 40-58 years and attained age 41-59 years
*P<0.05. *P<0.10. (n): Actual number of cases observed.

Table I gives the estimated Rate Ratios (RR) for bidi and cigarette smokers to develop the disease for the two cohorts. The nonuser of tobacco did not smoke either bidis or cigarettes nor did he chew tobacco. The group of chewers and those with mixed habit is not considered here, since we were interested in studying the risk of smokers with single current usuage.

Looking at the cohort of blue collar workers (table I), it is seen that bidi smokers had a 3-fold risk for developing CHD as well as for the subset of MI, whereas cigarette smokers had slightly lower risk for 2.8 for MI and 3.0 for CHD. These results are comparable to the results of the case-control study mentioned earlier (11), which was undertaken in a similar socio-economic group.

In the cohort of white collar workers there were very few bidi smokers and the risk could not be assessed. The cigarette smokers had 63% greater risk of developing MI compared to the nonuser of tobacco, although no increase in risk was observed for CHD. However, it is seen from table 2, where the white collar and blue collar groups are compared, that there is no significant difference in risk of developing the disease in cigarette smokers of the two cohorts. The difference lies in the group that does not use tobacco, particularly for CHD. The nonexposed white collar worker has more than 2-fold risk of developing CHD compared to his counterpart in the blue collar group, suggesting that there is some factor in the life style of the nonsmoker-nonchewer white collar worker which places him at a higher risk, for the disease. When, however heavy cigarette smokers (20 per day) of white collar group are considered a significantly higher risk for CHD (RR=2.03, $P < 0.05$) as well as for the subset of MI (RR=2.9P < 0.05) is observed, compared to nonusers of tobacco.

Table 2. Estimates of rate ratios for incidence of CHD and of subset MI (white collar workers vs. blue collar workers)

White collar vs Blue collar	Rate ratios with 95% Confidence Intervals	
	CHD	MI
Nonuser of tobacco	2.13* (1.03,4.35)	1.19 (0.45, 3.13)
Cigarette smoker	0.76 (0.38, 1.54)	0.65 to (0.25, 1.72)

* $p < 0.05$

Physiological effects of bidi and cigarette smoke

Besides the epidemiological observation that bidi smoker carries as high a risk as cigarette smoker for developing CHD, there is experimental evidence to show that bidi and cigarette smoke have equally deleterious effect on some of the parameters which are known to be related to the pathogenesis of the disease.

Gupta and Garg (13) have studied platelet aggregation time in seconds, serum free fatty acid levels and blood sugar levels in healthy smokers under strict experimental conditions (table III). It is seen from table III that the effect on platelet aggregation time and blood sugar levels, 15 or 30 minutes after bidi and cigarette smoke, are virtually identical. The increase in serum free fatty acid levels is also similar and is seen to be,

21.6%, 20.2% and 4.9%, 30 minutes after cigarette, bidi and control smoke respectively. The results were reported to be no different for bidi tobacco wrapped in cigarette wrapper or in the original marketed form (14).

Table 3. Mean, platelet *aggregation* time, serum free fatty acid levels and blood sugar levels in healthy bidi and cigarette smokers and controls*

	Mean ± SE Platelet aggregation time in seconds			Mean ± SE Serum free fatty acid levels in Eq/L			Mean ± SE Blood sugar levels in mg%		
	Control	Cigarette	Bidi	Control	Cigarette	Bidi	Control	Cigarette	Bidi
Before smoke	24±6	24±4	24±3	532±165	490±135	486±167	85±15	84±10	84±11
15 minutes after smoke	23±6	17±5	17±5	551±191	604±196	576±103	87±14	94±12	95±12
30 Minutes after smoke	23±7	24±6	23±6	558±196	596±215	584±185			

Source: Gupta and Garg (1977).
*Equal amounts of bidi tobacco, cigarette tobacco and powdered lettuce leaves (control) were wrapped in cigarette wrappers and smoked.

The carbon monoxide (CO) inhalation during the act of tobacco smoking is the most obvious and dangerous exposure. Carbon monoxide has been reported to be as high as 7.7 vol% in bidis versus 3.5 vol% in western cigarettes (3). Furthermore, comparative studies of blood carboxyhaemoglobin (COHb) level in bidi and cigarette smokers have revealed that COHb is very high in both types of smokers compared to nonsmokers. Jindal *et. al.* (15) have reported mean COHb levels in 81 cigarette smokers to be 9% and in 88 bidi smokers to be 7.4% and both these levels were significantly higher than that measured in 58 nonsmokers which was only 0.8%. Earlier Bhown *et. al.* (16) had found the results of COHb levels of bidi smokers to be dose related to the number of bidis smoked per day and in close conformity with those of cigarette smokers.

Bordia *et. al.* (17) have studied the effects of tobacco use on pulse rate, blood pressure electrocardiogram and blood coaguability in healthy individuals and found the effect of bidi smoking to be as deleterious as cigarette smoking for all the parameters studied.

Thus the epidemiological and experimental evidence are in the same direction showing bidis to be atleast as harmful as cigarettes, if not more.

Other risk factors

Smoking along with hypertension and elevated serum cholesterol levels are the three established risk factors for cardiovascular disease and smoking acts synergistically with these factors (2).

Several workers, however, have shown that serum cholesterol levels in healthy individuals in the Indian population are generally much lower

than their counter-parts in the western population, especially in the low income groups (18).

Table 4. Mean serum cholesterol levels (mg/100cc) in healthy individuals

Country	Author	Age groups (Years)			
		21-30	31-40	41-50	≥51
India	Vengsarkar et al (1968)	152±44		168±36	
India	Padmavati et al (1961)	164±25	174±40	172±23	150±30
India	Srikantia et al (1961)	161±10	173±5	175±5	174±16
U.S.	Kannel et al (1964)		219±45	229±46	
			222±42	231±39	
Italy	Keys et al (1954)		228±41	231±40	

Source: Vengsarkar et al (1968)

Between the ages of 31 and 50, it is seen from Table 4 that the mean serum cholesterol levels vary between 172 mg/100 cc to 175 mg/100 cc in the Indian population groups whereas in the comparable age-groups in western populations it ranges between 219 mg/100 cc to 231 mg/100 cc. Infact Vengsarkar *et. al.* (18) noted that in their group of CHD patients the mean serum cholesterol levels were lower than the normal values reported for healthy individuals in the west. Dolder and Oliver (19) in their study of risk factors operating in young men with myocardial infarct from nine countries, noted that high serum cholesterol and triglyceride levels were the common features of the cases from all 7 developed countries but was not so far cases from Bombay and Singapore, and the values were consistently on the lower side of the range.

Thus for the Indian population smoking-both bidis and cigarettes may be considered the most important of the known modifiable risk factor for this disease.

Assessment of attributable risk and conclusion

If smoking (bidi and cigarette), as mentioned above, emerges to be an imporant risk factor, it is of interest to assess, what proportion of the disease is avoidable, if smoking could be eliminated from the population. This proportion is not only dependent on the excess risk of morbidity that smokers carry for the disease but also on the fraction of the population that smokes. It is given by the expression $[P((I_1-I_0)/(PI_1+(I-P)I_0)]$ where I_1 and I_0 are incidences of the disease in smokers and nonsmokers respectively and P is the fraction of the population that smokes. In absence of incidence data, the relative risk $(RR=(1_1/1_0)$ can be substituted in the formulae to obtain the attributable proportion, known as attributable risk percent, as $[P(RR-1)/(1+P)\ (RR-1)]\ x\ 100$.

Table 5. Attributable risk per cent for CHD in males

P	Attributable Risk	
	RR=2	RR=3
	%	%
0.40	29	44
0.50	33	50
0.60	38	55

P=fraction of smokers in the population

RR=Incidence rate ratio

The attributable risks obtained by taking combinations of different values of relative risk (RR), and of fraction P of smokers in the population, are shown in Table 5. It can be seen for example, that for a relative risk of 3 (as estimated in table 1 for male bidi and cigarette smokers in age group 41—59 years) and P the fraction of smokers in the population as 50% (observed for blue collar group) almost half the new cases of CHD in this group (males 41—59 years), are attributable to smoking—if the excess is mainly due to smoking habit—and hence avoidable if smoking could be eliminated from the population.

The association with smoking is further strengthened by the fact that there is a substantial decrease in CHD mortality in those who quit the habit, as reported from studies in the west (2). Approximately 10 years following, cesation of cigarette smoking, CHD death rates in those who used to smoke less than a pack a day was virtually identical to that of lifelong nonsmokers and for ex-smokers of more than a pack a day there was reduction proportional to lifetime exposure.

It needs to be added, in conclusion that the benefits of elimination of smoking can not only be translated in reduction in risk of smokers for developing cardiovascular disease but a host of other conditions including cancers of certain sites and chronic obstructive lung disease.

Toxic Constituents in Bidi Smoke

K. Jayant and S.S. Pakhale

Bidi, a popular form of smoke in India is smoked by over 130 million persons. Epidemiologic studies have established bidi smoking to be a risk factor in cancers of the upper alimentary and respiratory tract, coronary heart disease and chronic obstructive lung disease.

Levels of harmful constituents in a single bidi smoke were estimated under the internationally recommended smoking conditions for cigarettes except for puff frequency. The bidi had to be smoked at 2 puffs per minute (instead of one) to keep it burning. Chemical analysts of the bidi smoke shows that overall toxicity as measured by total particulate matter (TPM) and nicotine is high (tar 23.41 mg^1 bidi, nicotine 1.74—2.78 mg/bidi). Hydrogen cyanide, which is the strongest cilia toxic agent in tobacco smoke is estimated to vary from 688 mg to 904 mg per bidi. Phenols are known tumor promoting agents and their levels range from 129 ng to 273 ng per bidi.

Futhermore benzo(a)pyrene which is often used as an indicator of concentration of tumorigenic PAH in the smoke varies from 108ng. to 144 ng. Emission levels of tar and nicotine based on actual smoking behaviour of the bidi smoker, repeal that the bidi smoker is generally exposed to greater health hazard than indicated by standard machine estimates.

Bidis and cigarettes were smoked on the smoking machine (a) as per standard smoking condition for bidi (for a comparative study of product characteristics and (b) as per smoking behaviour of the respective type of smokers (to assess exposure levels). The long bidi, dispite having less amount of tobacco (1/3 that in a cigarette) was found to yield tar and nicotine values similar to filter king cigarettes in the first comparison and even higher than filter king in the second. For the regular bidi, levels of tar were lower than in cigarettes in both the comparisons. However, the nicotine levels were similar to non filter and filter (70 mm) cigarettes in the first comparison and similar to filter king in the second.

No low tar-low nicotine bidis are as yet marketed in the country. Various methods of reduction standardised in the laboratory, some of which are suitable for commercial adoption are discussed.

Introduction

When tobacco was first discovered in the new world in the early 15th century, It was smoked from a tube or a pipe (1). This form of smoking was followed by cigars and primitive cigarettes obtained by stuffing tobacco in a hollow reed/cane tube or by rolling crushed tobacco leaves in corn husk/other vegetable wrapper. With the first cigarette machine factory which was set up in Havana in Cuba in 1853 (2), cigarette manufacturing spread rapidly to London and the American Colonies. After the First World War, cigarette smoking not only replaced almost all forms of tobacco use but its consumption increaed phenomenally (3).

There was concern about the health hazards due to tobacco use ever since it was introduced to the western world. However, systematic scientific studies were initiated only after 1930, when a marked increase in mortality and incidence of disease like lung cancer were observed. The Report of the College of Physicians of London (4) and the first Report of the US Surgeon General on Smoking and Health in the early sixties (3) evaluated all available epidemiologic and experimental data and came to the conclusion that smoking was undoubtedly causally associated with premature, mortalility cancers at certain sites, coronary heart and chronic obstructive lung diseases.

Tobacco was introduced in India in the early 16th Century by the Portugese (5). The Royal Physician in the Court of Akbar was apprehensive of the ill effects of smoking and suggested that it be smoked only after passing the smoke through water. This gave rise to the hukkah, which became the prevalent form of smoking in the country. Hukkah is cumbersome to smoke and a convenient form of smoking *viz.*, "bidis" became popular when its manufacture spread from Bihar in 1905 to other parts of the Country (6). The hazards of bidi smoking became evident three decades ago, when association of bidi smoking with cancers of the upper alimentary tract was established (7). But it was only in 1974 that the bidi smoke was chemically analysed (8). In recent years, there are not only epidemiologic studies showing bidi smoking to be a risk factor in coronary heart (9) and chronic obstructive lung diseases (10.11) but systematic chemical analysis of bidi smoke of various brands of bidis marketed in the country have also been undertaken (12.13).

Bidi

Bidis are available in 2 lengths, regular (60 mm) and long (80 mm) and are made up of 0.2 to 0.3 g. of tobacco which is sun-dried, flaked and rolled in a dried leaf of tendu (Diospyros melanoxylon) or temburni (Diospyros ebenum).

Emission levels of harmful constituents in bidi smoke

The yield of harmful constituents from any smoking stick depends not only on physical and chemical properties like quality and cut of tobacco, curing process. Length of stick and quality of wrapper but also on smoking parameters like puff volume, puff duration, puff frequency and butt length. Therefore, for a comparative study of product characterstics, it is necessary to adopt uniform smoking parameters.

Standard for machine estimates: Federal Trade Commission has laid down the following international standards with regard to cigarettes (14).

1. Conditioning the product in humidity chamber for a minimum of 24 hours at 22±2°C and 60±3% relative humidity.
2. Regulating puff volume at 35± 0.5 ml.
3. Regulating puff duration at 2± 0.2 seconds.
4. Regulating puff frequency at 1 puff per minute.
5. Smoking upto butt length of 23 mm for nonfilter cigarettes and 23 mm or length of filter overwrap plus 3 mm whichever is longer, for filter cigarettes.

In adopting the above conditions for estimation of constituents of bidi smoke. It was found that the puff frequency of 1 puff per minute was not adequate to keep the bidi burning. Hoffmann and others (8) who were the first to chemically analyse the bidi smoke, modified the recommended condition of puff frequency of 1 puff per minute to 2 puffs per minute while keeping the other recommended smoking parameters the same as for cigarettes. For a comparative study of standard machine estimates in various brands of bidis the international standard as modified for bidis by Hoffmam net al (8) is followed.

Smoking leads to formation of main stream smoke which is what the smoker is exposed to directly and the side stream smoke which is the smoke in the amblent air between puffs. The estimates given in this paper are restricted to main stream smoke.

Harmful constituents in the tobacco smoke: In the cigarettes smoke over 3800 constitutents have been identified (15). Although the bidi smoke has not been analysed in such detail, there is no reason to think that the number would be vastly different as both are pyrolised products of tobacco. However, there might be variation in the amounts of the constituents, due to differences in product characteristics.

The smoke condensate from the main stream smoke consists of dry total particulate matter (TPM) and nicotine which are toxic, as most of the carcinogenic and mutagenic agents (so far studied) are known to reside in the particulate phase. Furthermore, nicotine has been shown to act on several physiological responses resulting in increased heart rate and other changes in the normal functioning of the circulatory system (16).

Some of the other specific components that are identified in the smoke and are known to be hazardous to health are hydrogen cyanide, steam volatile phenols, benzo(a)pyrene, and carbon monoxide. Hydrogen cyanide is known to be the strongest cilia toxic agent in tobacco smoke. Its interference with mucociliary clearance which is essential for maintenance of normal pulmonary environment could result in an accumulation of toxic and tumorigenic agents leading to respiratory diseases. Phenolic fraction of cigarette smoke condensate has been reported to have tumor promoting and carcinogentic activity on mouse skin as also toxic effect on ciliated epithelium. Polynuclear aromatic hydrocarbons in tobacco smoke play an important role in tobacco carcinogenesis and their concertration is often measure by the yield of benzo(a)pyrene. Carbon monoxide, is also present in the smoke and is harmful mainly due to its interference with tissue oxygenation (16).

Table 1. Mean levels of harmful constituents in bidi smoke (under modified international standard conditions)*

Type (length) and coded brand names of bidis	Dry TPM (mg/bidi)	Nicotine (mg/bidi)	HCN (mg/bidi)	Phenol (mg/bidi)	B(a)P (mg/bidi)	CO** (Vol.%/bidi)
Regular (60 mm)						
BA	25.9 ± 0.50	1.94 ± 0.05	688 ± 37.5	129± 12.0	108 ± 10.01	
BC	23.0 ± 0.54	1.74 ± 0.10				
BD	30.0 ± 0.69	2.05 ± 0.08				
Long (80 mm)						
BB	40.8 ± 0.50	2.78 ± 0.13	904 ± 55.9	273 ± 16.4	144 ± 18.8	7.7
BE	38.0 ± 0.68	2.44 ± 0.06				

*Puff frequency : 2 puffs per minute, brands marked in 1979-80.

**Brand marketed in 1974 (B).

Levels of harmful constituents in bidi smoke: levels of the various harmful constituents (described above) are estimated in a single bidi smoke under modifed standard conditions and are shown in Table 1. Levels of tar varied from 23.0 to 40.8 mg, nicotine from 1.74 to 2.78 mg, hydrogen cyanide from 688 μg to 90.4 μg. phenols from 12.9 μg. B(a)P from 108 μg. to 144 μg. (12.13) and carbon monoxide was 7.7 vol % in a long bidi (8).

Comparison of emission levels in bidi and cigarette smoke

Harmful effects of bidi smoke could be better appreciated by comparing the levels of noxious agents in the bidi with those of cigarettes. Locally 3 types of cigarettes are marketed-non-filter cigarette of 70 mm length and filter cigarettes of 70 mm length and of 85 mm length designated as filter

king. Bidis differ from cigarettes in several ways. The amount of tobacco in the bidi is much less (about a fifth to a third) compared to a cigarette, and is sun cured and flaked as against flucured and finely powdered in the cigarette. Furthermore, the bidi wrapper has very poor porosity compared to the cigarette wrapper. These differences lead to differing emission levels of the harmful consitutents in bidi and cigarette smoke.

Table 2. Mean levels of harmful constituents in cigarette smoke under standard smoking conditions modified for bidi*

Type (length) and coded brand names of cigarettes	Dry TPM (mg/cig)	Nicotine (mg/cig)
Nonfilter (70 mm)		
CA	36.5 ± 0.71	1.92 ± 0.03
CB	27.4 ± 0.35	1.55 ± 0.07
CC	32.6 ± 0.40	1.72 ± 0.04
Filter (70 mm)		
CD	34.8 ± 0.30	1.92 ± 0.00
CE	32.0 ± 0.15	1.98 ± 0.07
CK	27.8 ± 0.68	1.44 ± 0.06
Filter kings (85 mm)		
CF	37.4 ± 0.48	1.88 ± 0.12
CH	37.8 ± 0.31	1.85 ± 0.01
CJ	41.7 ± 0.94	2.68 ± 0.00

* Puff frequency of 2 puffs/min and 23 mm but length. These conditions also conform to the smoking behaviour of the cigarette smoker.

Comparison of standard machine estimates of levels of emission : Under standard international smoking conditions, the local cigarettes were found to have 18 to 28 mg of tar, 0.9 to 1.8 mg of nicotine, 366 μg to 638 μg of hydrogen cyanide, 118 to 226 μg of phenols and 85 to 114 μg of benzo(a)pyrene (12.13). As mentioned earlier, for standard estimates, cigarettes are smoked with 1 puff per minutes and bidis with two, whereas for prouduct evaluation, both bidis and cigarettes would have to be smoked under similar smoking conditions. When cigarettes were smoked with puff frequency of 2 puffs per minute (like bidis) the tar and nicotine levels varied from 27.4 to 41.7 mg and 1.44 to 2.68 mg respectively (Table 2). Comparison of these value with those of bidis as given in Table 1 shows that the long bidi despite having only a third of the amount of tobacco in a cigarette has higher levels of tar (38.0—40.8 mg) and nicotine (2.4—2.8 mg) than nonfilter or filter cigarettes (70 mm) but is similar to filter kings (tar 37.4—41.7 mg, nicotine 1.8—2.7 mg). On the other hand, regular bidi which has about one fifth of the tobacco in a cigarette, has lower levels of tar (23—30 mg) compared to cigrettes of all types, but the nicotine yield (1.7 — 2.0 mg) is generally similar to those of nonfilter and filter (70 mm) cigarettes (1.4 — 2.0 mg). Levels of other constituents are available for cigarettes when smoked as per international standard conditions (as seen above) but not when smoked

at a puff frequency of 2 puffs per minites. However, as tar and nicotine levels could be considered as indicators of overall toxicity, it can be said, in summary, that long bidis are similar to filter kings but are more noxious than nonfilter and filter cigarettes (70 mm), whereas regular bidis are similar to filter and nonfilter cigarettes in nicotine yield but have lower levels of tar compared to all cigarettes.

It needs to be emphasized that comparison of standard machine estimates would only reflect the differences in product charactersitics and for a realistic assessment of health hazards due to exposure to one bidi smoke compared to exposure to one cigarette smoke, it is necessary to determine emission levels based on actual smoking behaviour of bidi and cigarette smokers.

Emission levels in bidi and cigarette based on the smoking behaviour of the smoker: To ascertain the smoking behaviour of the smokers, puff frequency and puff duration were observed in about 100 bidi and 100 cigarette smokers and the butt lengths discarded were also measured. It was found that the difference was mainly in puff frequency. Bidi smokers smoked with almost 5 puffs per minute compared to the standard of 2 and cigarette smokers smoke with 2 puffs per minute instead of one. Furthermore, the bidi smoker threw away a longer butt (30 mm) as against the cigarette smoker who discarded a 23 mm butt (12).

Table 3. Mean emission levels in selected brands of bidis based on smoking behaviour of the smokers+

Type (length) and coded brand names of bidi	Dry TPM (mg/bidi)	Nicotine (mg/bidi)
Regular (60 mm)		
BA	23.20 ± 0.62	2.15 ± 0.07
BD	25.49 ± 0.74	2.50 ± 0.10
Long (80 mm)		
BB	46.47 ± 0.83	3.71 ± 0.09
BE	46.40 ± 1.08	3.34 ± 0.28

+ Puff frequency of 5 puffs/min and 30 mm butt length.

The estimates of tar and nicotine levels, in selected brands of bidis, which were smoked on the smoking machine with puff frequency and butt length as observed in bidi smokers are shown in Table 3 (13). The smoking behaviour of the cigarette smoker conforms to the standard smoking condition as modified for the bidi. Thus the exposure levels for cigarette smokers are the same as emission levels given in Table 2. The level of tar in regular bidis (23.2—25.5 mg.) was lower than for cigarettes (32.0—41.7—mg.) but nicotine level in these bidis (2.2. 2.5 mg.) was higher than in nonfilter and filter cigarettes (70 mm) but was almost similar

to filter kings (1.9—2.7 mg). On the other hand, emission levels of both tar and nicotine were much higher for long bidis (tar 46.5 mg. nicotine 3.3—3.7 mg.) compared to cigarettes (tar 32.0—41.7 mg. nicotine 1.9—2.7 mg.). Thus, exposure due to smoking a long bidi is much higher than due to smoking a cigarette. However, in the case of regular bidi there is as much or greater exposure to nicotine compared to a cigarette although not to tar.

Again , these levels are indirect measures of exposure. Actual exposure, which also depends on inhalation and other smoking parameters would have to be determined from estimation of relevant biochemical and biologic parameters. Study of effect of bidi and cigarette smoking on specific biologic parameters related to pathogenesis of coronary heart and chronic obstructive long diseases have shown that smoking one bidi is as harmful as smoking one cigarette (17—20).

Reduction of levels of tar and nicotine in bidis

As bidi smoking is proven to be a health hazard, every effort should be made to eliminate or reduce the risk of bidi smoking. Undoubtedly, the best approach to reduction of hazards due to smoking is to institute smoking control programmes. No bidi for cigarette can be considered safe, however low the emission levels. Even so there are studies (21) which have demonstrated reduction of risk of cancer of the larynx and lung and diseases of coronary artery (22) in long terms users of filter cigarettes. Consequently, one of the measures for control of health hazards due to smoking adopted in several western countries is banning of high tar and nicotine cigarettes.

As we have seen, the bidis marketed in the country have high levels of TPM (tar) and nicotine. As bidi is a product of the cottage industry, there is a need to introduce simple and inexpensive methods of reduction in its manufacture. Some of the methods standardised in the laboratory along with the percentage reduction in each of the modified bidis are shown in Table 4 (23—25).

The first method tried was introduction of filters. Initially rolling of bidis similar to the market bidis was standardised. Then the filter was inserted in the standard bidi. Various filters viz. cotton sliver of 5 mm length and 10 mg weight (CF) and 5 mm length 20 mg weight (CF) were used. Both the standard and the filter bidis were smoked on the smoking machine as per the smoking behaviour of the smoker. The observed reduction varied from 48% to 68% for tar and 42% to 65% for nicotine (23).

Table 4. Mean levels of tar and nicotine and percentage reduction in modified bidis.

	Methods of reduction	Tar (mg./bidi)	Nicotine (mg./bidi)	Percentage reduction Tar	Nicotine
1.	Introduction of filter				
	Control (nonfilter)	23.1 ± 0.64	1.54 ± 0.06		

	Methods of reduction	Tar (mg./bidi)	Nicotine (mg./bidi)	Percentage reduction Tar	Nicotine
	Cotton filter (CF)+	12.1 ± 0.51	0.89 ± 0.05	48	42
	Cotton Filter (CF)++	7.4 ± 0.31	0.55 ± 0.04	68	65
2.	Perforation				
	Control (non-perforated)	26.9 ± 0.75	1.93 ± 0.04		
	5 perforations	12.9 ± 1.63	0.83 ± 0.01	52	57
3.	Substitution of filter tobacco				
	Control (usual bidi tobacco)	52.8 ± 0.88	3.90 ± 0.06		
	Cigarette tobacco filter	42.7 ± 2.67	1.43 ± 0.04	19	63
4.	Substitution of wrapper control (usual tendu-wrapper)	23.1 ± 0.64	1.54 ± 0.06		
	Cigarette paper wrapper	7.9 ± 0.98	0.69 ± 0.02	66	55

+ CF 5'10 Cotton filter 5 mm of 10 mg. weight.
++ CF 5'20 Cotton filter 5 mm of 20 mg. weight.

The second method tried was 5 perforations at the 30 mm butt mark of the bidi. Control bidis were similar to market bidis except for perforation. This modification reduced the tar and nicotine by over 50%. It has also been shown that perforation reduces carbon monoxide level (25). As perforation increases draw resistance, optimum number of perforations need to be worked out.

The other two methods attempted were substitution of (a) filter tobacco and (b) wrapper (24). Replacing the bidi filter tobacco by equal amount of processed cigarette tobacco resulted in a 63% reduction in nicotine yield (due perhaps to the superior quality of tobacco filling in the cigarette). But the reduction in tar yield was only 19% which indicates that better quality tobacco is of limited advantage, if the wrapper used has poor combustibility.

In the next experiment, when the less porous tendu leaf was substituted by cigarette paper, there was an appreciable reduction in tar (66%) and nicotine (55%) which again underscores the importance of the wrapper in emission levels.

It is pertinent to mention here, an experiment conducted by Gupta *et al.* (26) in which two groups of subjects were made to smoke equal amounts of bidi tobacco wrapped in bidi and cigarette paper, respectively. They report that in these two groups there was no significant difference in the

effect on platelet aggregation, levels of serum free fatty acids and carboxyhemoglobin. This finding which implies that the two wrappers do not have a differential effect on biological parameters related to coronary heart disease, needs to be confirmed as it is at variance with what might be expected on the basis of our experiment described above.

Conclusion

In conclusion, it can be said that inspite of the small amount of tobacco used in the bidi, emission levels of the harmful constituents are high. Furthermore, the way the bidi is smoked, exposes the smoker in general to higher levels of noxious agents than indicated by standard machine estimates.

Of the various reduction methods discussed, it appears that filter bidis and perforated bidis are more suitable for commercial adoption. In a randomised double blind trial, the cotton filter bidis were found to be acceptable to the smoker (23).

It needs to be emphasised that reduction methods for tar and nicotine are suggested not as an alternative to primary prevention programmes but as an adjunct to it.

Relevance of Low Tar-Low Nicotine Cigarettes and Bidis in the Indian Situation

Kasturi Jayant[1] and L.D. Sanghvi[2]

Introduction

Epidemiologic studies in India have demonstrated cigarette and bidi smoking to be risk factors in cancers at several sites, coronary heart disease and chronic obstructive lung disease (1, 2, 3). As yet there are no organised smoking control programmes of any legislation to limit the tar and nicotine yield. However, in recent years there is a greater awareness of the hazards of smoking. Government has restricted tobacco advertising and is poised to formulate a smoking control programme which would aim at dissuading nonsmokers (especially adolescents) from taking up smoking besides encouraging smokers to quit smoking (4). The question arises whether setting limits to tar and nicotine yields of cigarettes and bidis should also be a component of a comprehensive smoking control strategy in the country.

Tar and nicotine levels

Cigarettes in the West

Following the Reports of Royal College of Physicians in U.K. (1962) (5) and U.S. Surgeon General's Advisory Committee (1964) (6) which showed beyond doubt that smoking was casually associated with cancer at a certain anatomical sites, coronary heart disease and chronic obstructive long disease, the U.S. Public Health Service (7) reviewed the issue of smoke constituents and stated that "the preponderance of scientific evidence strongly suggests that lower the 'tar' and nicotine content of cigarette, the less harmful would be the effect". In the following decades, Government in several western countries pursued the policy of limiting tar and nicotine levels and the cigarette companies had to modify their product accordingly. In the US in 1954, the average "tar" yield of the sales weighted average cigarette was 37 mg and average nicotine 2.6 mg and in 1980, the comparable figures were less than 14 mg "tar" and 1 mg nicotine (8).

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Table 1. Levels of tar and nicotine in cigarettes*

Type	Number of brands tested	Range of values	
		Tar mg/cigarette	Nicotine mg/cigarette
Plain (70 mm)	3	21.16 to 21.94	1.04 to 1.21
Filter tip (70 mm)	3	18.33 to 22.61	0.94 to 1.18
Filter king (85 mm)	5	24.19 to 28.27	1.23 to 1.78

* Estimated under standard international conditions, in popular brands marketed in 1979-80.

Indian cigarettes

Levels of tar and nicotine in some popular brands of cigarettes marketed in the early eighties are shown in Table 1 (9). These yields are akin to those of the cigarettes marketed in the west in the sixties (8). Furthermore, it is of importance to note that filter tip cigarettes do not necessarily have lower levels of tar and nicotine than plain cigarettes and filter king cigarettes have much higher levels compared to both plain and filter tip cigarettes. Thus filter cigarettes in the country do not connote low tar and low nicotine cigarettes but mislead the smoker into thinking so. The filter efficiency was found to be less than 20% in the Indian cigarettes whereas it is greater than 30% in the west (9). This is mainly because the filters used are short (10—12 mm long) compared to those in the west (greater than 20 mm).

It may also be worth noting that levels of other noxious substances like hydrogen cyanide, (366—688 Mg/cigarette) phenols (118—226 Mg/cigarette) and benzo (a) pyrene (85—114 Mg/cigarette) in the currently marketed Indian cigarettes are higher (10) than those of plain cigarettes marketed in US over a decade ago (11).

Bidis

Levels of tar and nicotine in the bidis which are either 60 mm or 80 mm long are high (9). Direct comparisons of the machine estimates with those of cigarettes are not appropriate as the bidis have to be smoked at a puff frequency of 2 puffs per minute instead of the international standard of one, to keep them burning. However, machine estimates based on smoking behaviour of bidi smokers (5 puffs/min., 30 mm butt length) and cigarette smokers (2 puff/min., 23 mm butt length) which is indicative of exposure levels in the smokers could be meaningfully compared. These estimates (Table 2) show that smokers of long bidis are exposed to higher levels of tar and nicotine than smokers of all types of cigarettes whereas

smokers of regular bidis are exposed to higher nicotine than smokers of plain and filtertip cigarettes but lesser tar compared to smokers of any cigarette (10). The only brand of filter bidis which is manufactured for export purposes has even higher levels of tar and nicotine compared to long bidis under standard smoking conditions (as modified for bidi) (9).

Table 2. Emission levels in a selected brand of bidis and cigarettes based on smoking behaviour of smokers+

Type of smoke	Tar mg/stick	Nicotine mg/stick
Bidi		
Regular	25.5	2.5
Long	46.5	3.7
Cigarettes		
Plain	36.5	1.9
Filter tip	32.0	2.0
Filter king	41.7	2.7

+ Bidi smokers: puff frequency = 5 puffs/min; butt length = 30 mm.

Cigarette smokers: puff frequency = 2 puffs/min; butt length = 23 mm.

Health-effects of low yield cigarettes

As there are no low tar cigarettes or bidis, health-effects of low yield products cannot be assessed in India. However, in the west several studies have addressed themselves to this question and their findings in brief are given below:

Cancer

Smokers who started smoking with filtertipped cigarettes and those who switched to low tar from high tar have been shown to have a lower risk of cancers of lung and larynx. In case control study, life long smokers of filter cigarettes had a 30 to 40% (12) and 25 to 49% (13) reduction in risk of lung cancer and laryngeal cancer respectively.

Coronary Heart Disease (CHD)

The risk of CHD in smokers in dose-dependent, higher the frequency of cigarettes smoked, higher the risk, and cessation of smoking decreases the risk (14). These findings indicate that the risk associated with lower yield cigarettes would be lower. However, epidemiologic studies have not shown consistent results. One study has shown a decrease in risk (15) whereas others have not (16). There is even one study which has shown an increase (17).

The constituents suspected to be of etiologic importance in coronary heart disease are nicotine and carbon monoxide. Low tar cigarettes

generally have low nicotine but carbon monoxide may be unrelated to the levels of tar (18). It is possible that lack of unequivocal results observed in CHD are due to the fact that not all the relevant constituents of smoke, which are implicated in the pathogenesis of coronary heart disease are taken into account simultaneously in evaluating the risk.

Chronic Obstructive Lung Disease (COLD)

Although the casual association of COLD to cigarette smoking is well documented, the components in the smoke responsible for higher risk are not known. Furthermore, there are very few studies on risk related to tar levels. In low yield cigarette smokers, one study has reported a nonsignificant reduction of deaths due to emphysema (19) and another a decrease in phelgm produced (20).

Overall mortality

It has been reported that those smoking lower tar and nicotine cigarettes showed a 15% decline in mortality rate (all causes) compared to those smoking high levels (14). This reduction in overall mortality, which could be considered as a composite index for assessment of health risk, clearly indicates that low tar and low nicotine cigarettes are less hazardous.

Doubts/reservations regarding promotion of low yield cigarettes

The US Public Health Service in 1979 (14) evaluated the available evidence regarding the health effects of low yield cigarettes. The report, while confirming the earlier conclusion, warned that the smokers would not derive benefit from low tarnicotine cigarettes if they changed to higher number of cigarettes or to deeper inhalation. Furthermore, it emphasized that the most effective way of reducing the health hazards was to quit smoking. The 1981 report again confirmed the earlier evaluation and urged further work on identifying other (18) noxious agents of etiologic importance in the various smoking related diseases (5).

The issues which have prevented an unqualified support for recommending low yield cigarettes are the following:

(a) Compensatory smoking: Smokers who switch on to low yield cigarettes are suspected to change their smoking behaviour resulting in increase in frequency of number smoked and deeper inhalation.

(b) Encouragement to smokers: The policy recommending low yield cigarettes may be misconstrued to mean low tar cigarettes are safe and free of hazards and might lead to encouragement to the smoker.

(c) Self defeating policy: The policy might be self defeating as it provides an opportunity to cigarette companies to continue their vigorous promotional campaigns.

(d) Changing cigarette: There is no evidence to suggest that the benefits of reduction of high yield to low yield would also be seen in the reduction from low yield to ultra low yield. Furthermore, there is no assurance that cigarette engineering would not introduce other compounds equally harmful or more harmful in the new cigarettes.

Relevance to the Indian situation

In India, where 76% of the population is rural, there is as yet hardly any awareness of hazards of smoking. Smoking cessation programmes, which need a more personalized approach than educational programmes would have to reach over a 100 million smokers in the subcontinent. Reaching the goal of a nonsmoking culture and a nonsmoking generation would be a gradual process to be achieved with continued education. In the interim, efforts to lower the risk of smoking related diseases could well include introduction of low tar low nicotine cigarettes. No doubt some may not benefit from the policy, due to compensatory smoking behaviour. No doubt, some may feel encouraged to smoke. No doubt cigarette companies may try to wrest advantage in their promotional efforts. It seems these consequences of pursuing a low yield policy are exaggerated as compensation is suspected to be only partial (those who switched to low yield cigarettes were more likely to be ex-smokers (18). The outcome of the policy of low yield cigarettes followed assiduously in US and UK (both by goverments and cigarette companies) has lead to an overall reduction in smoking rates. The advantage, cigarette companies (or bidi manufacturers) may gain, probably can be stemmed by adequate legislation. Finally, it is of importance to recognize that the issue in India is far more basic and is vastly different from the west where the issue is of shifting from low tar to ultra low. As of now, low yield cigarettes and bidis are nonexistent in India. Thus, none of the doubts raised against a low yield policy need deter India from pursuing it. In fact, research laboratories must be encouraged to device simple and inexpensive reduction methods for tar and nicotine in the bidis, characterise the bidi smoke and pass on the simple reduction technology of the bidi industry which has neither the know-how nor the infrastructure to test modified bidis. Besides being of help to the cottage industry, this approach has the advantage of health planners knowing exactly what is smoked by the majority of smokers in the country (bidi smokers are five times as many as cigarette smokers). It may be mentioned here that two laboratories have already put forth some reduction methods, (21—23). However, manufacturers have not been motivated to adopt them.

As far as the cigaretfe companies are concerned they have the technology to reduce the tar and nicotine to any desired level although they have not made any efforts to introduce them in India. It is also

known that poorer quality tobacco is dumped in the third world countries as they have not been alert.

In the final analysis, there certainly is sufficient justification to initially limit the tar and nicotine levels to 15 mg and 1 mg respectively, as has been done in several countries. While recommending this policy, it needs to be emphasized, as outlined in the WHO report (25) that "programmes to reduce tar in cigarettes and other product modification activities should not be seen by governments or tobacco companies as a justification for inaction on other antismoking activities—such as passing legislation against promotion of tobacco products, educating the public and starting smoking control programmes."