

A Knowledge-Attitude-Practise (Kap) Study to Assess the Awareness About The Adverse Effect of Tobacco Smoking on Eyes Among Medical Students in A Rural Based Medical College.

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Abstract

Introduction: Smoking is a significant risk factor in several debilitating and fatal diseases. These toxic compounds affect ocular tissues, mainly through ischaemic or oxidative mechanisms. Smoking and other forms of tobacco consumption is quite prevalent among the student community, including medical fraternity. The present study aims to find out how far medical students are aware about the ocular adverse effects of tobacco smoking.

Materials and Methods: 545 Selected students were given a pretested & predesigned questionnaire regarding their smoking habits & awareness regarding smoking related eye diseases. All current smokers have been called for a personalised interview informing the ocular adverse effects of smoking.

Results and Analysis: After one month, they were again called for a personalised interview & their behaviour regarding smoking cessation was assessed. 42% of the study population were current smokers, 17.5% were ex-smokers and the rest were non-smokers. Awareness regarding ocular adverse reaction of cigarette smoking was present among 56% of current smokers and 91.2% of non-smokers (p value:<0.00). One month after the personalised interview, most of them (64.1%) were still in the pre-contemplation stage of behavioural change (chi square value:; p value:<0.00).

Conclusion: The medical curriculum which clearly discloses the multidisciplinary adverse effects of tobacco smoking has largely failed to motivate medical students who smoke to refrain from the addiction.

Keywords: Medical Students, Ocular adverse effects, Smoking

I. Introduction

Smoking is a significant risk factor in several debilitating and fatal diseases including coronary artery disease, myocardial infarctions, and cerebrovascular incidents¹. Of the 40 000 active substances in tobacco smoke, most are hazardous to human health. More than 40 of these chemicals are carcinogens, and many others are deleterious to the cardiovascular and the pulmonary systems². These toxic compounds affect ocular tissues, mainly through ischaemic or oxidative mechanisms³. Some common eye diseases, such as cataract, age-related macular degeneration, retinal vein occlusion, anterior ischaemic optic neuropathy, thyroid ophthalmopathy and primary open-angle glaucoma, have been found to be associated with cigarette smoking. Two studies found diffusely decreased retinal sensitivity and peripheral scotoma in the visual fields of healthy heavy cigarette smokers. Some other studies showed deleterious effects of smoking on both retinal and choroidal circulations⁴. The effects of smoking on ocular disorders show significant dose dependence; higher levels of smoking increase the risk of developing cataract and age-related macular degeneration, as well as increasing their severity³.

Smoking and other forms of tobacco consumption is quite prevalent among the student community. Students and residents in the medical discipline is not an exception to this. The present study aims to find out how far medical students are aware about the ocular adverse effects of tobacco smoking. The study also intends to portray the prevalence and severity of tobacco smoking among the medical students. Additionally, this study wants to gauge the attitude regarding cessation of smoking among medical students after they have been imparted the awareness regarding ocular adverse effects of tobacco smoking.

Materials and Methods

545 subjects were selected by systematic sampling from among the medical students and residents in Burdwan Medical College and Hospital. This cross-sectional community based KAP study was conducted between June

2014 to December 2014. Selected students were given a pretested & predesigned questionnaire regarding their smoking habits & awareness regarding smoking related eye diseases. The collected data was analysed in terms of smoking habits and smoking related eye disease awareness. All current smokers irrespective of their status of smoking related eye disease awareness has been called for a personalised interview. In the interview the adverse ocular effects of smoking were discussed & smoking habit was strongly discouraged. After one month, they were again called for a personalised interview & their behaviour regarding smoking cessation was assessed using THE TRANSTHEORITICAL MODEL. 14 students were excluded from the study either due to withdrawal of consent or due to incomplete return of questionnaire.

Smoking habit was assessed on the basis of following terminologies:

- a. Current Smokers: Those who have smoked more than 100 cigarettes.
- b. Non-Smokers: Those who have smoked less than 100 cigarettes.
- c. Ex-Smokers: Those who smoked more than 100 cigarettes but has not smoked at least for last one year.

The awareness regarding ocular adverse effects of smoking was assessed on the basis of following assumptions:

- a. Awareness present: Those who could name at least TWO smoking related eye diseases
- b. Awareness absent: Those who could not name at least TWO smoking related eye diseases or have named unrelated diseases
- c. Do not Know: Those who have not named any disease.

After imparting awareness regarding ocular adverse effects of tobacco smoking to all participants through personalised interview, their attitude regarding cessation of smoking was assessed on the basis of the Transtheoretical Model:

- a. Pre-contemplation: No intention of smoking cessation in next 6 months
- b. Contemplation: Intending to stop smoking in next 6 months
- c. Preparation: Intending to stop smoking within the next month
- d. Action: Have stopped smoking for last one month since the first personalised interview.
- e. Maintenance: Those who have stopped smoking for last one year (all ex-smokers)

The results were analysed using standard statistical methods and soft wares. Results and Analysis 42% of the study population were current smokers, 17.5% were ex-smokers and the rest were non-smokers. When the study population was distributed according to age and smoking habit, it was seen that more number of current smokers were in the age group of less than 20 years and more than 30 years. In rest of the age groups number of non-smokers was more than number of current smokers. 67.6% and 39.2% were current smokers in the age group of less than 20 years and more than 30 years respectively where as 48% and 43.8% were non-smokers in the age group of 20-25 years and 25-30 years respectively (chi square value: 142.52; p value : <0.00). When the study population was analysed according to gender and smoking habit, it was found that maximum number of current smokers (84.7%) were males and number of non-smokers (74.3%) were significantly more than number of current smokers (16.2%) among the females (chi square value: ; p value: <0.00). While analysing the current smokers according to severity of smoking, it was found that most (47%) of them smoke 20-30 pack years. The mean age of initiation of smoking was 16.2 years (SD: 2.2 years).

Awareness regarding ocular adverse reaction of cigarette smoking was present among 56% of current smokers and 91.2% of non-smokers (p value: <0.00). Among the total study population, about 77.2% were aware regarding the ocular adverse reactions of cigarette smoking. One month after the personalised interview which enlightened the current smokers on the adverse ocular effects of tobacco smoking and encouraged them to quit smoking immediately, it was found that most of them (64.1%) were still in the pre-contemplation stage of behavioural change (chi square value: ; p value: <0.00).

II. Discussion

Most chronic ocular diseases, with the possible exception of diabetic retinopathy and primary open-angle glaucoma, appear to be associated with smoking³. Chakravarthy et al in EUREYE study conducted in seven centres in Europe has clearly shown that Current smokers had increased odds of neovascular AMD (odds ratio [OR], 2.6; 95% confidence interval [CI], 1.4–4.8) or Geographic Atrophy (OR, 4.8; 95% CI, 2.1–11.1), whereas for ex-smokers the odds were around 1.7. They also reported an increased risk of bilateral advanced AMD in current smokers and heavy smokers. They strongly recommended promotion of smoking cessation advice among general population with particular emphasis on current smokers with unilateral ARMD⁵. Apart from ARMD, cataract which is the other leading cause of severe visual impairment is also accelerated by smoking tobacco⁶. Conjunctival mucosae is highly sensitive to the toxic components of tobacco smoke⁷. It also

affects the eyes of non-smokers by passive exposure³. The most common complaint of passive smokers is eye irritation⁸. Tamaki et al has shown in their pioneering work that cigarette smoking increased tissue blood velocity in the ONH and possibly in the choroid in habitual smokers⁹. Smoking is thus a major risk factor for most ischaemic disorders of the eye³. Even for Thyroid Ophthalmopathy smoking is a major controllable risk factor¹⁰. Babies born to mothers who are current smokers have an increased risk of developing strabismus¹¹. The ophthalmological disorders associated with cigarette smoking continue to grow³. Hence the awareness regarding the ocular adverse effects of smoking needs to be promoted.

The present study showed that only 77.2% of the study population were aware about the ocular ill-effects of tobacco smoking. Goel et al showed in their study amongst general population aged fifteen years and above in Northern part of India, that about 96% of the study population considered smoking to be harmful to health. However, they did not elicit any specific information regarding the awareness for ocular ill-effects of tobacco smoking. Interestingly, this study showed that the perception about the ill-effects of smoking was significantly higher among urban population as compared to rural population. Such statistically significant difference regarding the awareness was also demonstrated between literate and illiterate study subjects as well as between employed and unemployed individuals¹². Surani NS et al showed in their study on dentistry, medicine, nursing and pharmacy students in India that approximately 80% of students from all disciplines felt that smoking should be banned in all enclosed public places; tobacco sale to adolescents should be banned and additionally advocated for a complete ban on any form of tobacco product advertisement¹³. In another study conducted among pre-university male students in Mysore city in India, it was shown that 65.7% of the respondents were aware about the ill-effects of smoking on health. Ahmed M et al also showed in the same study that roughly 60% of the students acknowledged that the dangers of smoking were discussed in their school at some point of time¹⁴.

In our study 42% of the respondents were current smokers. Most of the current smokers in the present study were males. Whereas Goel et al showed that 25.4% of the study participants were current smokers and current smokers were significantly more concentrated in Urban areas (30%) as compared to rural areas¹².

Conclusions The results of this KAP study are quite disappointing. Prevalence of smoking is more in males with below 20 years age group and above 30 years. Awareness regarding the ocular effects of smoking was satisfactory (77.21%). This reflects that most of the participants continue to smoke even after knowing the adverse ocular effects of smoking. The medical curriculum which clearly discloses the multidisciplinary adverse effects of tobacco smoking has largely failed to motivate medical students who smoke to refrain from the addiction. During the course of the study, participants irrespective of their knowledge regarding smoking were explained the adverse ocular effects of tobacco smoking and was encouraged to quit smoking through personalised interview. When after one month their attitude regarding cessation of smoking was assessed most were still in the pre-contemplation stage. This is both alarming and surprising. This work needs to be further followed up with a multi-centre prospective study analysing the reasons for acquiring and continuation of tobacco addiction among medical students.

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[16]. Fig 1: Showing the distribution of the study population according to age and smoking habit (n=531) **Chi square value: 142.52 P value: < 0.00**

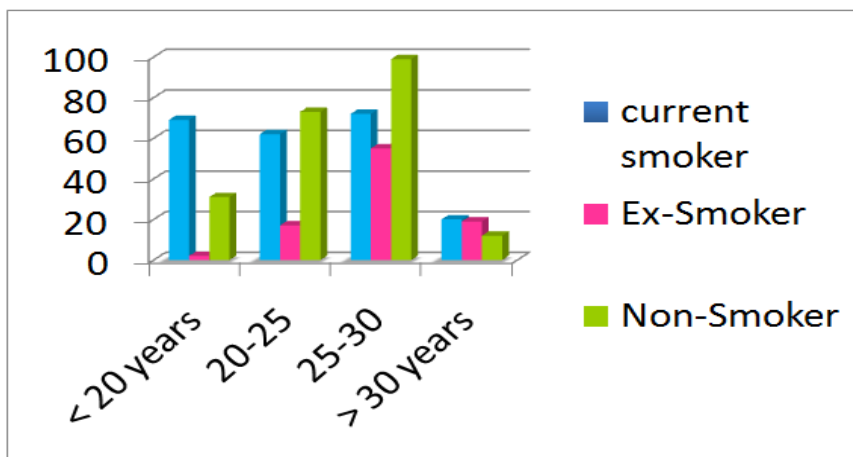


Fig 2: Showing the distribution of the study population according to sex and smoking habit (n=531)

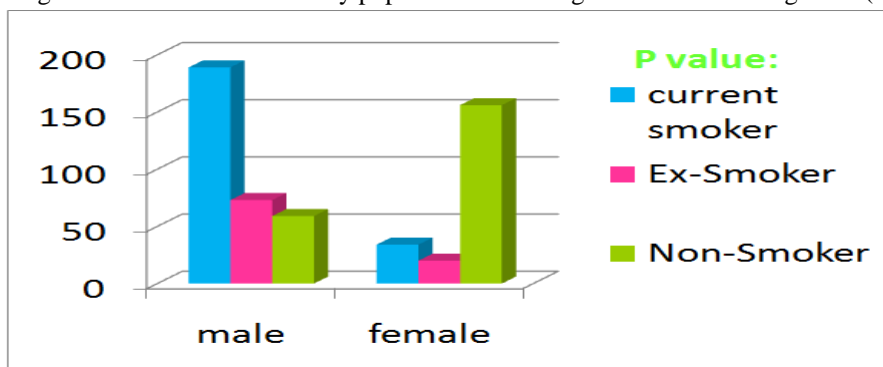


Fig 3: Showing the distribution of current smokers according to severity of smoking (n=223)

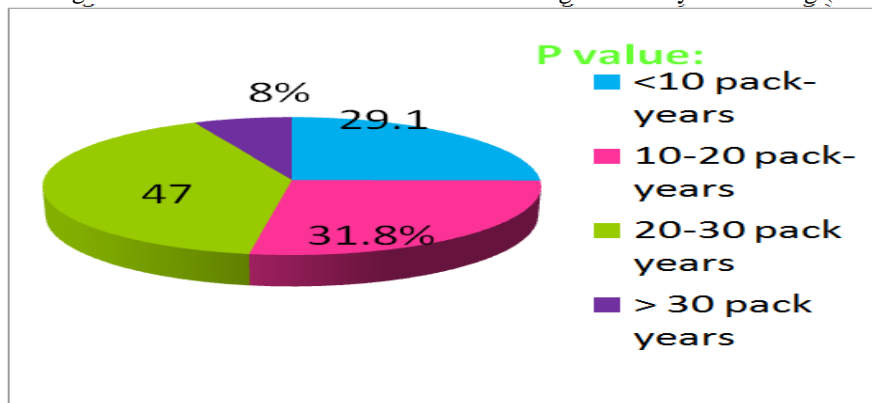


Table 1: Showing the distribution of study population according to smoking habit and smoking related eye disease awareness (n=531)

Status Smoking	of	Awareness present	Awareness Absent	Do not know	P value
Non-Smoker		196(91.16%)	13	06	<0.00
Ex-Smoker		89	03	01	< 0.00
Current Smoker		125(56.05%)	86	12	<0.00

Fig4: Showing the distribution of current smokers according to Transtheoretical model of behaviour change after one month (n=223)

