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Associated Risk of Morbidities of Tobacco Smoking among Opium Consumers in Rural Areas of Rajasthan

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ABSTRACT The study has been carried out in three desert districts, namely Barmer, Jaisalmer and Bikaner districts of Rajasthan. The objective was to find out the associated risk factors of different health problems related to smoking and their ill- effects among the opium consumers. A total of 600 subjects were interviewed who consumed opium and at the same time smoked cigarettes/ *beedis* or chewed tobacco as well. The subjects were identified by Simple Random Sampling (SRS) technique in these rural areas of these districts and the data has been collected using pre-tested schedule. Those who smoked tobacco and consumed opium were separated and analysed to find the associated risk factors. The median age of smokers was 42.3 ± 9.04 years and of opium consumers was 38.5± 6.78 years. The odds ratio calculated was 1.08 and the relative risk (RR) of respiratory problems among the opium consumers was 1.68 and that of smokers was 2.44, which is higher and is statistically significant ($P<0.05$). This showed that smokers have significant risk of health problems and are being shadowed by opium use. Almost all the individuals who consumed opium were smokers/chewers in some or the other form and always have psychological problems by their mind drifting towards opium. The risks including chronic cough, stomach pain, chest pain etc. were common among opium consumers who are smokers. The duration of consumption was highly correlated with diseases, $r = 0.80$, in subjects who were consuming for the last 15 years. These subjects also chewed tobacco and smoked about 20 *beedis* on an average/day. The association of smoking tobacco and opium addiction has significant correlation on health with chronic diseases ($P<0.05$) and they are being dominated by the opium effect. The longer duration of consumption of opium and smoking becomes a major risk factor which can be attributable for cause of cancers of different type and may lead to mortality.

INTRODUCTION

In western Rajasthan, opium is being consumed since ancient times. It was used by the Rajput (warriors) clans of this part of the country, mainly to reduce bleeding and allay apprehension during war times. It is a household remedy for various symptoms like cough, diarrhoea, insomnia and to counter the fatigue due to opium consumption. In the beginning opium was restricted to elite classes of this region. Hence, it was offered by rulers (kings, Thakurs or zamindars etc.) to their guests. In these communities there was no occasion, right from birth to death, which went without opium party (Purohit and Vyas 1982). Now the use of opium is not restricted to any caste and community but has social approval and is not considered as a major evil (Purohit 1988). Therefore, opium use is widespread, especially in rural areas along with smoking *beedis* and *chillam* in groups and in gatherings. The weather and climatic conditions, viz. sluggishness associated with high temperatures, and less work, in western Rajasthan has also aggravated the problem, with a resultant increase in consumers over the past few decades. We have collected the data from opium addicts and they attribute its use to socio-cultural and medical factors. The prevalence rate among opium addicts reported from Jodhpur was 8.0 and they do smoke *chillam* and *beedi*, to pass time in the desert areas (Mathur et al. 1991).

Once a person becomes an opium addict, then it is taken for granted by him and others around him that its use cannot be given up during one's lifetime. This is the psychological problem among the opium consumers. This pessimistic attitude is further strengthened by popular misconceptions (i.e., if someone gives up the use of opium he may develop impotency or tuberculo-

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sis or may die). Besides pessimistic attitude and fear of ill consequences, ignorance about its treatability and social approval etc. are major factors for lack of initiative on part of the addict to explore the possibility of getting rid of the problem. Therefore, by and large addiction was accepted as a way of life. Only few persons with strong willpower and having 'do or die' attitude could get rid of it by sheer will (Mathur 1992). There are various factors which contribute to the widespread use of opium in rural areas of the desert. Liquid form of opium drink is offered at the time of religious ceremonies and guests are entertained during the festivals, during vital events like births and deaths and social functions. The refusal of opium is considered to be very bad manners and an insult to the host and may result in incurring displeasure and animosity in the community. In this situation group dynamics plays a significant role through persuasion and pressurization by friends that a person may restart using opium or *doda* to gain acceptance and recognition in the group (Kohli 1966; Min. Health Govt. of India 1977). The individual, on his own or on the suggestions of friends or relatives starts using opium to work more, to get relief from fatigue, tension and insomnia and to enhance sexual power in rural areas (Mohan et al. 1979). This has also been revealed by some studies in Punjab where prevalence was 3.6%. The smoking behavior reported among students of Dakshin Karnataka was 20.4% while smoking habits of the adolescents was reported to be around 22.6% (Singh et al. 2003; Urban and D'Souza 2003). Sometimes a group of addicts make a person an addict to take revenge also. In some cases landlords also exploited the agriculture labor by giving them tea containing opium without their knowledge. By this they could get maximum work from laborers and create dependency on opium or *doda* which they supply only when they were working for them and that too only during the peak period of farming season (Lakshminarayana and Singh 2009). The effects of all these on the health of the individual have been studied and the diseases are classified as per the International Classification of Diseases (ICD-10) (WHO 1999).

MATERIAL AND METHODS

The study has been carried out in three desert districts of Rajasthan, namely, Barmer, Jaisalmer and Bikaner. The data presented here is from a major study, on factors associated with opium consumption and leading to addiction where all the factors associated with addiction to opium/smoking were taken into consideration. The factors related to opium consumption leading to addiction and also smoking in some or the other form, smokeless tobacco user, consumption of alcohol by the individuals, are highlighted in this paper. The objective of the present paper was to find out the associated risk factors related to smoking and its ill-effects among the opium consumers. A total of 600 subjects were selected from three districts and all the tehsils were considered and the villages were equally distributed within the district and from each household, only male consumers, those who were aged more than 15 years, were included, and female consumers were negligible. Based on prevalence of opium from earlier studies by DMRC, sample size has been determined by the formula, n= [4 P* q] / L^2. The sample of subjects were categorized as smokers, those who consumed alcohol and those who consumed smokeless tobacco (chewing), who were selected based on Simple Random Sampling (SRS) technique in the villages. The duration of consumption was entered, that is, for how long one has been smoking and consuming opium along with the quantity of consumption of opium in *tola* (approx. 11gms.). This was arrived at by probing the consumers how much quantity they consumed, and they answered in *tola* and this was converted into grams per day of opium and this was consumed twice a day. This is at an increasing trend as the effect reduces with the same quantity over a period. The data have been collected using structured and pre-tested schedule. Those who were consuming both, smoking tobacco in any form (chewing tobacco) and consuming opium were separated and analysed to find the associated health problems. The data has been entered in computer as a data base using d-base IV Plus, FOX PRO packages and analysed using SYYSTAT-11.0 package. The statistical tests applied were chi-square and proportion tests for significant associations among smokers and opium consumers.

RESULTS

The analysis revealed that the prevalence among the rural population was 8.4 from

Barmer, 7.9 from Jaisalmer from and 6.9 from Bikaner districts (Table 1), of total opium users in the area. The majority, 80.6% of the individuals surveyed were smokers, they smoked either *beedis/chillam* and tobacco chewers were from the elite community. The age wise distribution of opium addicts and smokers are described in Table 2. Majority of the addicts were in the age group of 30-50years (Table 2).The major caste groups in the studied population (our sample) in the three districts who were opium/*doda* addicts are Rajputs (41.8%), Jats/Choudharies (26.5%), Vishnois (16.1%) and remaining were from other caste groups (Table 3). The important reasons for consumption of opium/*doda* is to work more in the fields (66.5%), those addicted who cannot live without opium (23.2%), those using it as medication for treatment of minor ailments like stomach ache and body ache (6.1%) and the rest said that they consume it as a time pass (Table 4). The average consumption was 11.0 gms. The average duration of consumption is more than 10 years in the three districts which is correlated with smoking habits r = 0.80 and health problems. The alcohol consumption among the individuals is 30% and the average consumption of alcohol is 120 ml per day and the reasons for consumption is to relieve tension and to have a good sleep (62.6%). The average smoking is around 25 *beedis* per day and they smoke to release work tension (69.3%) and as a time pass (43.6%). The average consumption of smoking chillam is 20 gms per day. The median age of smokers is 42.3 ± 9.04 years and of opium consumers is 38.5± 6.78 years. The odds ratio (OR) calculated is 1.08 and the relative risk of the opium consumers was 1.68 and that of smokers was 2.44 (with 95% Confidence Intervals 1.27 – 3.26). This shows risk of getting health problems like chronic respiratory problems (problem in breathing and choking of throat, 36.4% are significantly higher ($P < 0.01$) and chronic heart diseases 6.2% which is significantly different ($P<0.05$), when compared with the tobacco chewers and heart problems (CVD) are around 3.8% which are not statistically significant (Table 5). The opium addicted subjects attended the de-addiction camps to get de-addicted, the listing was done to calculate the recurrence rates. The recurrence rate was 2.8% from Jaisalmer, 3.6% from Barmer and 4.8% from Bikaner districts. The

Table 1: Prevalence of opium consumption and mean age and S.D. of subjects in three districts of Rajasthan

Districts	*Prevalence's (%) with opium consumption*	*Age (Mean ± S.D)*
Barmer	8.4	40.4±8.28
Jaisalmer	7.9	38.2±9.44
Bikaner	6.9	39.3±6.45
Pooled	7.8	40.2±6.63

Table 2: Age wise distribution (%) of opium addicts and chronic smoking in the districts selected

Age group (years)	*Opium addicts (n=600)*	*Chronic smokers (n= 416)*
<30	8.4	6.6
30-40	26.5	30.5
40-50	41.8	50.1
50-60	16.1	8.6
>60	7.2	4.2

Table 3: Percentage distribution of individuals consuming opium, smoking *(beedis/chillam)* and alcohol by caste

Caste	*Percent of individuals*		
	Opium consumption	*Smoking beedi/ chillam*	*Alcohol consumption*
Rajputs	41.8	50.1	40.0
Jats/Choudhary	26.5	30.5	34.2
Vishnoi	16.1	-	-
Lower caste	10.4	15.2	20.2
others	5.2	4.2	5.6

Average consumption: per day
Opium: 11grams, *Chillam:* 20 grams, *Beedis*: 25 nos.
Alcohol: 250 ml.

Table 4: Percentage distribution of subjects according to major reasons for consumption of opium, alcohol and smoking

Reasons	*Percentage of individuals*		
	Opium	*Smoking*	*Alcohol*
To work more in the fields	66.5	-	12.1
Medication for minor ailments	23.2	-	30.4
To relieve body pain & stomach pain	6.1	-	48.3
Due to habit	-	23.8	-
To relieve tension	-	69.3	-
Others	4.2	6.9	9.1

Table 5: Percentage distribution of health problems of opium consumers among smokers and tobacco users

Health problems	*Opium consumers*	
	Smoking N= 416 (600)	*Tobacco chewing N=184(600)*
Respiratory problems	36.4**	4.6
Chest diseases (Chronic heart diseaes)	6.2*	2.8
Cardiovascular diseases	3.8	1.2
Chronic cough	10.6	3.4
Others	2.8	1.8

** - $P < 0.01$ and * - $P < 0.05$

percentage can be reduced provided the environment changes like a person could be sent to some other village for some time. The other addictions like *bhang*, brown sugar, *charas* were not seen in these areas. The prevalence rate of opium addiction is increasing progressively with age as plotted according to age structure till about mid-fifties and showed a declining trend afterwards (Table 2). The consumption of opium and smoking among the caste groups in the desert areas of Rajasthan is shown in Table 3. The association of smoking and opium addiction showed significant results on the health of the individuals who had chronic problems like respiratory problems, chest diseases and heart problems. The above mentioned health problems are more among smokers when compared with tobacco chewers. In turn, the consumers have the misconception that opium acts as a medicine and reduces these effects. These health problems are suppressed when opium is consumed and bring relief for the individual ailments as perceived by the individual. Table 4 shows those who have the feeling that opium consumption is reducing these diseases. The various factors causing concern about the opium addiction and progressive deterioration of health is seen in the rural areas of the desert (Table 5). The social problems are creeping in as the relations of these rural population are being spoiled because of opium addiction and people are prefer not to marry their daughters in these families.

DISCUSSION

The present study is conducted on the rural population of desert districts of Western Rajasthan which revealed 8.4% prevalence in Barmer, 7.9% in Jaisalmer and 6.9% prevalence in Bikaner districts of western Rajasthan. The study conducted earlier in Jodhpur reported that the prevalence is around 8%. The problem of opium addiction is still prevalent in the desert districts with high prevalence of addiction associated with smoking and consumption of chewing of tobacco and alcohol. The overall addiction was significantly higher ($P<0.05$) in the desert districts as compared to other rural areas of India. However, the opium users are being categorized into experimental, seasonal and regular types in Punjab survey showing 3.6% prevalence rate for men in the regular opium group. In a survey in Himachal Pradesh on tribal population, the prevalence was around 20.4% which is very high as compared to regular opium users. The prevalence rate of opium addiction is increasing progressively with age as plotted according to age structure till about mid-fifties and showed a declining trend afterwards. The consumption of opium and smoking among the caste groups is shown in Table 3 in the desert areas of Rajasthan. The association of smoking and opium addiction showed significant results on the health of the individuals who had chronic problems like respiratory problems, chest diseases and heart problems. The above mentioned health problems are more among smokers when compared with smokeless tobacco users. These health problems are suppressed when opium is consumed and bring relief to the individuals as perceived by them. Table 4 shows those who have the feeling that opium consumption is reducing these diseases. The various factors causing concern about the opium addiction and progressive deterioration of health is seen in the rural areas of desert (Table 5). The social problems are creeping in as the relations of these rural population are being spoiled because of opium addiction and people prefer not to marry their daughters in these families.

CONCLUSION

It is concluded that the association of tobacco smoking and opium addiction has significant correlation ($r= 0.80$) with Odds Ratio 1.68 and Relative Risk 2.44 with 95% Confidence Intervals (1.27 – 3.26) among smokers on the health of the individual with chronic diseases ($P<0.05$) and they are dominated by the opium effect. In turn, the consumers have the misconception that opium acts as a medicine and reduces these effects. The consumption of both opium and smoking and chewing for a long duration becomes a major risk factor, which can be attributable to cause of cancers of different types and may lead to mortality.

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