Exploring Factors that Influence Smoking Initiation and Cessation among Current Smokers

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ABSTRACT

Introduction: Worldwide, cigarette smoking kills 5 million people annually, and leads to illness, disability and death. This study aimed to assess the factors influencing smoking initiation and cessation among current smokers in Chennai, India.

Materials and Methods: This cross-sectional study was conducted in September 2013 in Chennai, India. A convenient sample of 100 current smokers aged >15 years was enrolled. A modified version of Alcohol, Smoking and Substance Involvement Screen Test (ASSIST) questionnaire was used to gather information on socio-demographics, smoking initiation and cessation, expenditure on smoking products and perceptions on incentives for smoking cessation.

Results: Surrounding influence (44%), stress (42%) and fun (40%) were major reasons for smoking initiation. Majority of participants (68%) attempted to quit smoking within past 6 months but failed. Health promotion programs (61%) and financial incentives (20%) were perceived to be helpful in smoking cessation.

Conclusion: Smoking cessation strategies, especially at workplaces, should target the multi-factorial nature of smoking initiation and cessation. There is a need to review national guidelines to evaluate the accessibility and availability of smoking products in and around the workplace.

Keywords: Advocacy, Cessation, Prevention, Public policy, Socio-economic status

INTRODUCTION

Smoking, the most fatal form of tobacco use and is attributed to 5 million deaths worldwide [1,2]. World Health Organization has estimated that about half of the smokers will eventually die prematurely due to persistent smoking habit [1]. Smoking is responsible for numerous of fatal or non fatal health disorders which includes cancer of lung, larynx, stomach, liver, leukaemia, chronic obstructive pulmonary disease, cardiovascular disease, vascular dementia, asthma attacks, macular degeneration and peripheral vascular disease [2].

It was been estimated that 20% of the global population smokes tobacco [3]. Eighty percent of the global tobacco related mortality occurs in low and middle income countries [3,4]. India is not lagging behind in tobacco consumption and smoking. It is second largest consumer of tobacco products [4] and contributes to the largest global tobacco-related mortality [3]. Prevalence of smoking among the Indian males is as high as one fourth of the total male population above 15 years of age [5,6]. Twenty six percent of Indians are smokers [3,7]. Alongside of physical and mental burden, smoking is attributable for burden of social, economic and environmental factors [3]. The indirect and direct economic costs of smoking to India amounted to $1.7 billion in 2004 due to tobacco use [8].

Smoking initiation and pursuance depends on smoking by their favourite movie stars [9] parents' smoking [10] peer pressure [11] culture (hookah smoking) [12] genetic factors and environmental influences [5]. Smoking among friends, siblings, relatives and parent-teen conflicts, parental monitoring and discussion in the family about smoking hazards are significant predictors of smoking stages [13]. Cessation of smoking can involve influencing the behavior of smokers by regular counselling and mass media, limiting influence of smoking family members, role models (smoking), tobacco industry, empowerment, education, coercion and promotion of treatment in drug de-addiction centers [2]. There are existing policies to reduce the burden of smoking but they had minimal impact due to lack in their effective implementation [14].

There is need of understanding all inclusive roles of multiple factors responsible for smoking initiation and the role of barriers in cessation for developing 'impactful customized interventions to decrease burden of smoking [3]. The commonest form of known incentive for cessation of smoking is quit and win competition and it has shown positive results, but likelihood of its misuse is a matter of concern [2]. Previous literature have stressed on exploring further evidence on incentives for promoting smoking cessation [15,16]. The objective of this study was thus to assess the factors leading to smoking initiation and cessation along with exploring of various types of incentives needed to promote smoking cessation.

MATERIALS AND METHODS

A cross-sectional study was conducted in August 2013 for a period of one month at outpatient department (OPD) of Saveetha Medical College and Hospital, Chennai, India, and individuals visiting to the OPD were considered as sampling frame for the study. Inclusion criteria of the study comprised of Individuals of age equal or above 15 years of age, current smokers (smoked at least 100 sticks of cigarettes or similar products - bidis, hookahs, cigars and pipe) in their lifetime, reported smoking daily or occasionally) [17] and ready to give informed consent or assent (along with their parents consent for individuals having age less than 18 years) for the study. Recruitment of the participants was done on the basis of convenient sampling. Investigator approached the visitors (patients and attendants) of the OPD on convenient basis and among them who were found eligible to participate in the study were invited for participation in the study after explaining the purpose of the study. This procedure was repeated until the desired target of 100 participants was achieved. Investigator administered the questionnaire in separate room to maintain the confidentiality. Anonymity of the participants was maintained by assigning unique identity code. Individuals who were not fulfilling the inclusion criteria, having mental or physical challenges, involved in any other clinical trial or unwilling to participate in current study were excluded from the study. The study protocol was approved by the IRB of the Foundation of Healthcare Technologies Society, New Delhi (IRB#FHTS/009/2013).

Data collection

A modified version of previously validated questionnaire was used to gather information. World health organization's (WHO) ASSIST was contextually modified and used in this study which is a validated tool, feasible, reliable, flexible, comprehensive and cross-culturally relevant, and able to be linked to brief interventions [18-20].

Information was gathered on the following variables

(a) socio-demographic characteristics (age, gender, educational status, marital status, annual household income [21], type of family, number of family members, and occupation status); (b) smoking habits (smoking habits, substances used in lifetime and initiation time of smoking, urge to smoke during last three months, concerns of other people on the individual's smoking habit, quitting or reducing smoking, smoking partners, smoking after meals and along with/after liquids' consumption, effect of smoking on individual's financial status); (c) smoking initiation (reasons for smoking initiation, participants' influence on other persons to smoke, use of addictive or other products along with smoking tobacco); (d) accessibility of smoking products (most preferred smoking area, time spent on acquiring smoking product, factors encouraging smoking, availability of smoking products at workplace); (e) expenditure on smoking products (daily expenditure on smoking products, frequency and number of sticks of smoking product smoked per day); (f) smoking cessation (participants' intention of quitting smoking within the immediate 30 days and 6 months, source of information about smoking cessation products/programs), and (g) incentives (open ended questions on different incentives and motivating factors that would help in smoking cessation). Also, questions regarding the participant's opinion about other people were also asked.

STATISTICAL ANALYSIS

Quantitative descriptive analysis was performed using univariate statistics to report means and standard deviations for the continuous variables and frequency distribution for the categorical variables. T statistics was performed to compare differences in the continuous variables and chi-square analysis was performed to compare the frequency of categorical variables. Analysis of responses to open ended questions was done by extracting common themes from categories after prior coding of textual data manually. All analyses were performed using SPSS version 16.

RESULTS

All participants were males with an average age of 43 years (SD = 11). Majority of them were married (88%), residing in rural settings (82%) and having nuclear families (75%) with an average family size of 5 (SD = 2). Sixty four percent of the study participants were educated up to high school. More than half of the participants were unskilled professionals and 44% of the participants had annual household income of more than 100,000 INR (US$ 1613 approx.) [Table/Fig-1]. Smoking initiation, continuation and cessation pattern among the participants. Average age of the study participants who smoked cigarettes and bidi were 41 years (SD = 11) and 48 years (SD = 11) respectively. Mean age of initiating smoking was lower among the Bidi smokers (M = 18; SD = 5) in comparison with cigarette users (M = 22; SD = 5). Majority of them were smoking daily (98%) with an average of 9 (SD = 4) sticks smoked by cigarette smokers and 19 (SD = 9) sticks by bidi smokers. More than half of the study participants had a strong urge to smoke cigarettes daily (65%). Majority of the study participants reported smoking with their friends (83%) and 10% reported smoking when alone. Surrounding influence (62%), fun (50%), stress (48%), and peer pressure (31%) were among the main reasons reported by the participants which could lead a person to initiate smoking. Study participants had initiated smoking due to surrounding influence (44%), during stress (42%) and for fun (40%) [Table/Fig-2,3].

Participants have reported availability of smoking products at an average walking distance of 6 minutes (SD = 4) from work place or home. Fifty-five percent participants reported smoking at work place and 49% of them smoked at home [Table/Fig-4]. More than half of them had access to smoking products (52%) near work place.

Fourteen percent of the participants reported that they have influenced one or more individuals to smoke. Seventy nine percent of the participants had perception that consummation of addictive substance or drugs do not encourage smoking. Majority of the participants perceived that free availability of smoking aids did not encourage them to smoke (71%), while easy availability and accessibility may promote (54%). Half of the study participants admitted that they had faced some kind of health problems, legal penalties, social isolation or financial crisis related to smoking.

More than three quarter of the participants (77%) tried to quit smoking in past but failed and among them 47% attempted to quit smoking in the past three months. One third of the participants have shown desire to quit smoking within next six months. Twenty one percent of the participants have heard about nicotine use curbing substances and 18% of them had heard about nicotine de-addiction centre [Table/Fig-5]. Television (13%) and friends (12%) were the main source of information about the de-addiction centre.

Incentives for smoking cessation: Majority of the participants perceived that health promotion programs (62%) could be of the greatest help to help them quit smoking. One fifth (22%) of the participants perceived that financial incentives as a motivating factor. Other incentives to quit smoking included promotion of self-control

Variables	Results (%)
Age (years)	Mean = 43; SD = 11
≤30	16
31-40	33
41-50	24
>50	27
Type of family	
Joint	25
Nuclear	75
Household location	
Urban	18
Rural	82
Household members	Mean = 5; SD = 2
≤3 members	23
4-5 members	53
6 and above	24
Annual household income, INR	Mean = 128101; SD= 116241
≤50,000	20
51,000–1,00,000	36
>1,00,000	44
Marital status	
Single	12
Married	88
Education level	
≤Grade 10	64
Grade 11-12 but no college	28
Graduate	8
Occupation	
Professional	13
Skilled worker	27
Unskilled worker	53
Student	7

[Table/Fig-1]: Socio-demographic characteristics of the participants

[Table/Fig-2]: Main Reasons to starting of smoking for first time for anyone - Perceptions of the study participants
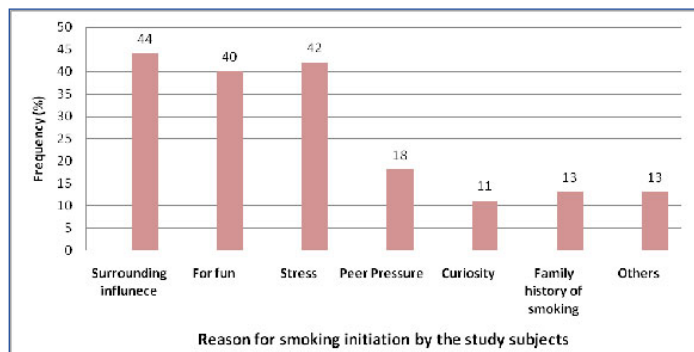
[Table/Fig-3]: Main Reasons for the study participants to start smoking for the first time

[Table/Fig-4]: Various places of smoking as reported by the participants

mechanisms (10%), involvement of family members (16%), and counselling and guidance (3%). Association between independent variables with intent to smoking cessation .

Statistical analysis was performed to see any difference in independent variables of the participants who had shown desire or no desire to quit smoking in next six months. It was found that none of the Socio-demographic variables had shown any statistical significance difference. Time duration required to reach nearest cigarette or bidi vendor was slightly higher for those who had shown intention to quit smoking (p=.02). Participant who have heard about deaddiction centre (56%) were in higher proportion for willingness to quit smoking in future in comparison to participants who have never heard (29%) about nicotine deaddiction centre (p=.03) [Table/Fig-6].

DISCUSSION

World Health Organization predicts the largest increase, over 1.5 million annually, in tobacco related deaths in India by 2020 [22]. This cross-sectional study was conducted primarily to assess the reasons for smoking initiation, barriers in quitting and also to explore various incentives that could help in cessation of smoking [3]. Mean age of initiation smoking among the current smokers was 21 years (SD = 5). Binnal et al., reported similar mean age of 20 years (SD = 4) at which most of the study subjects initiated smoking [3]. Age plays an important role in determining the smoking habits in future life which may need an intervention targeting at early school ages [23,24]. The risks of tobacco- related diseases are higher among those who start early and continue using it [24].

Variables	Total (%)	Cigarette	Bidi
Smoking initiation age	Mean= 21; SD= 5	Mean= 22; SD= 5	Mean= 18; SD= 5
≤18	25	13	15
19–24	41	32	9
≥25	34	29	4
How often do you smoke?*			
Daily	98	72	26
Mean number of sticks	Mean= 12; SD= 7	Mean= 9; SD= 4	Mean= 19; SD= 9
Do you smoke after meals?*			
Yes	88	64	24
No	12	10	3
Smoking pattern (after meals)*			
Breakfast	62	40	22
Lunch	87	63	24
Dinner	70	47	23
Substances used along with smoking*			
Soft drink(aerated drink)	11	11	
Tea	65	47	17
Coffee	24	17	6
Alcohol (beer, whisky)	44	29	14
During past 3 months how often you had a strong urge to smoke?*			
Daily	86	65	23
Once a week	12	9	4
Have you ever tried to cut down on smoking but failed? n=77			
In the past 3 months	41	39	2
Not in the past 3 months	36	28	8
Has smoking often led to problems?(personal/social/legal)N=50			
In the past 3 months	29	21	8
Not in the past 3 months	21	16	5
How often have you failed to do normal activities because of smoking? n=46			
In the past 3 months	22	16	6
Not in the past 3 months	24	21	3
Have you influenced anyone to smoke?*			
Yes	14	12	2
No	86	62	25
Does use of any drug or addictive substance encourages smoking?*			
Yes	21	14	5
No	79	60	22
Do free smoking products encourage you to smoke more often?*			
Yes	29	24	6
No	71	50	21
Do you have access to smoking products at your workplace?*			
Yes	52	43	10
No	48	31	17
Does accessibility to product increase your chance of smoking?*			
Yes	54	44	11
No	46	30	16
Have you heard of nicotine de-addiction centres?*			
Yes	18	14	4
No	82	60	23

[Table/Fig-5]: Smoking initiation, habits and cessation of participants using two different smoking products
*Some response may not add up to 100 due to some of the participants smoke Bidi as well cigarette. Responses are in multiple scales

Surrounding influence, stress, fun and peer pressure were the major reasons for smoking initiation. Stress [3, 25], pleasure [3], peer [26] and social pressure [3] have been reported as predominant reasons

Variables	Intention to quit smoking within next 6 months		p-value
	Yes	No	
Age (Years)	44 (SD=13)	42 (SD=10)	.35
Household location			.94
Rural	28 (34%)	54 (66%)	
Urban	6 (33%)	12 (67%)	
Marital status			.74
Single	5 (42%)	7 (58%)	
Married	29 (33%)	59 (67%)	
Family Type			.46
Joint	10 (40%)	15 (60%)	
Nuclear	24 (32%)	51 (68%)	
Family Size	5 (SD=2)	5 (SD=2)	.96
Annual household income	135235 (SD=91485)	124303 (SD=126817)	.65
Educational status			.79
< High School	13 (34%)	25 (66%)	
=High School	7 (27%)	19 (73%)	
Intermediate (11th-12th grade)	7 (41%)	10 (59%)	
Some college or above	7 (37%)	12 (63%)	
Occupation			.26
Professional	7 (54%)	6 (46%)	
Skilled worker	10 (37%)	17 (63%)	
Unskilled worker	14 (26%)	39 (74%)	
Student	3 (43%)	4 (57%)	
Age of smoking initiation	22 (SD=4)	21 (SD=6)	.75
Number of filter sticks (n=74)	9 (SD=5)	9 (SD=4)	.95
Number of Bidi sticks (n=27)	15 (SD=9)	21 (SD=8)	.07
Total smoking costs, INR/Day	47 (SD=35)	51 (SD=31)	.58
Heard about nicotine curbing substance			.13
Yes	10 (48%)	11 (52%)	
No	24 (30%)	55 (70%)	
Heard about nicotine deaddiction centre			.03
Yes	10 (56%)	8 (44%)	
No	24 (29%)	58 (71%)	
Time required from home/office to reach nearest cigarette/Bidi vendor	7 (SD=4)	5 (SD=3)	.02
Free smoking aid encourage to smoke more often			.18
Yes	7 (24%)	22 (76%)	
No	27 (38%)	44 (62%)	
Accessibility to smoking products increases chances of smoking			.31
Yes	16 (30%)	38 (70%)	
No	18 (39%)	28 (61%)	
Access to smoking products at workplace			.52
Yes	15 (29%)	37 (71%)	
No	19 (40%)	29 (60%)	

[Table/Fig-6]: Association of independent variables with the intent of smoking cessation

for smoking initiation among teachers and adolescents. These findings depict the important role played by surrounding influence and stress, an inevitable part of modern day life [3]. Identification of strong influences, targeted peer education and stress reduction strategies should be explored.

Majority of the participants smoked at their work places. Binnal et al., has reported majority of the participants smoking when they were outside their house, and suggested family counselling and advice to facilitate smoking cessation [3]. These findings also imply harnessing work places as an effective medium to promote smoking cessation. Accessibility of tobacco products around workplace showed to encourage the participants to smoke irrespective of the cost of the products.

About two thirds of the participants attempted to quit smoking in past and more than half of the participants had shown intent to quit smoking in near future. Previous studies have shown intention to quit smoking among participants ranging from 10 to 88% [3,7]. Huge variation in intention to quit smoking and higher failure rates could be attributed to multiple factors including behaviour, socioeconomic status, health education, environment and work culture. Lack of awareness on methods of quitting smoking and whom to approach for cessation of smoking despite intent to quit is a matter of concern.

The role of nicotine de-addiction centres at local level may need urgent attention as these have been suggested to facilitate in identification of smokers and thus assist smokers to quit smoking [3]. Majority of the participants in this study had not heard of nicotine de-addiction centres or the location of the one nearest to them. The possible involvement of traditional mass media like television and radio along with healthcare fraternity in spreading awareness of the importance and role of such centres may need to be explored further [3].

Health promotion programs and financial incentives were among the major types of incentives that were perceived by the participants' to help in quitting smoking. Volpp et al., reported that employees receiving information about cessation and financial incentives had significantly higher cessation rates [27].

LIMITATIONS

The limitations of this study included a small sample and only male gender due to which gender differences could not be compared. Majority of the participants belonged to rural areas because of which urban differences could not be determined. Since it was a hospital-based study, extrapolation of the results to the wide population of current smokers may not be possible.

CONCLUSION

Work places may serve as an effective platform to deliver targeted strategies aimed at smoking cessation. Such strategies should include incentives, periodic health education informing the risks to them and their families and awareness about drug de-addiction centres. A review of national guidelines to regulate and evaluate the accessibility and availability of smoking products in and around the work place may be needed.

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