



STUDY ON INTENTION TO QUIT SMOKING AND PREDICTIVE FACTORS AMONG CURRENT MALE SMOKERS IN A RURAL AREA IN KOLLAM, KERALA

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ABSTRACT **Background:** Quitting tobacco use at any age will help in improving the quality of health. The objective of our study was to find the Intention to Quit smoking among current male smokers, to find various reasons for intention to quit and to find the predictor variables for intention to quit smoking. **Methods:** A Cross-sectional study was done among 176 current male smokers in a rural area. Systematic Random sampling technique applied for selecting subjects from each household. **Results:** Subjects who are having the intention to quit smoking is found to be 48.3%. Education is considered to be a statistically significant factor for intention to quit ($P=0.036$) along with age of initiation of smoking habit ($P=0.001$), presence of health issues ($P=0.007$, Odd's ratio=2.3), part of smoking cessation campaign ($P=0.00001$, Odd's ratio=5.42), advice by doctor to quit smoking ($P=0.001$, Odd's ratio=2.8), number of attempts of quitting in the past ($P=0.001$). Binary logistic regression was used to find the predictor variables for intention to quit. It was found that education, age of initiation of smoking habit, number of attempts of quitting in the past, part of smoking cessation campaign can be considered as predictor variables for intention to quit. **Conclusion:** Nearly half of the current male smokers are having intention to quit. Tobacco control program need to be designed in such a way that the age of initiation of smoking habit need to be delayed. Smokers who are educated need to be more focussed and number of attempts of quitting smoking need to be considered as a significant marker for identifying people who are having intention to quit. During the smoking cessation campaigns maximum number of smokers need to be included.

KEYWORDS : Intention, Quit, Smokers

INTRODUCTION

Tobacco use is the most preventable cause of death and as the second leading cause of death in the world; one out of every ten deaths among adults is due to smoking. It is expected that by 2030, the annual death rate from tobacco consumption reaches 8 million (1). 56% current tobacco users in the Global adult tobacco survey (GATS) in India did not intend to quit (3). Providing tobacco cessation services is an important strategy in tobacco control and is of great relevance to India, having an intention to quit is a 'prerequisite' for making quit attempts (4). Intention to quit smoking is considered the first step before quitting smoking behaviour and varies across different smokers' characteristics. (5)

Quitting tobacco use at any age will help in improving the quality of health. After quitting tobacco, the risk of death decreases immediately (4). This intention was found to happen more frequent among older, current smokers with appropriate knowledge of harmful effects of smoking on health, had a higher education level, or who read anti-smoking messages through mass media. (5)

In general, quitting tobacco use has been associated with immense health benefits to the tobacco users. Although more than 75% of the tobacco smokers express a desire to quit, actual quit rates observed have been very low (1-14%), mainly because of the strong nicotine addiction, lack of professional help, and easy availability of tobacco product. (3)

Health problems can influence a smoker's positive intention to quit. Other factors such as age, gender, nicotine dependence, motivation factor, self-efficacy and previous quit attempts can also affect one's quit intention and cessation results. (1)

The survival rate becomes about the same as that for non-smokers, if a tobacco user quits before the age of 35 year. Former smokers live longer than ongoing smokers, no matter at what age they stop smoking, though the impact is greatest for quitting at younger ages. Evidence shows that tobacco users are aware of the health benefits of quitting tobacco and express a desire to quit, but the majorities are unsuccessful in their quit attempts. (4). Those who smoked 10-19 manufactured cigarettes per day or more were not interested in receiving advice and were less likely to have the intention to quit smoking (5). There exist no studies on finding the prevalence of Intention to quit done in Kerala and hence we planned to do a study in rural part of Kollam.

The objective of our study was to find the Intention to Quit smoking among current smokers, to find various reasons for intention to quit and to find the predictor variables for intention to quit smoking. Study population was selected among the current male smokers of age 18 to 50 years identified from the houses of a rural area.

A sample of 178 was estimated by taking a prevalence of intention to quit smoking from a study (7) as 52.4% at the relative allowable error of 14%. Finally, 176 subjects participated in the study through Systematic random sampling technique, there by the response rate was 98.87%. The study subjects were identified and interviewed from their houses. Total two wards were selected from Nedumpana Panchayat and sampling interval was 6. Hence after selecting the first unit using simple random sampling technique, there after every 6th house was selected and asked about the presence of current smokers in that house, if they are there then all current smokers present in that house is selected into the study, if not then had gone to the next house until we met the required sample size. Informed verbal consent obtained from the subjects before starting data collection. A semi structured interview schedule was used to assess the intention to quit among current smokers, and its associated factors. A person is defined to have Intention to quit if he made a quit attempt in the past 6 months.

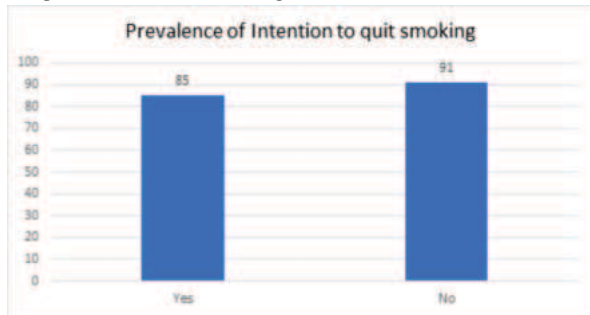
Data collected was coded and entered in MS Excel and analysed using Jamovi Software Version 2.4.11. Frequencies and percentages calculated for qualitative variables, Mean and Standard deviation was calculated for quantitative variables. Chi square test was used to find the association of various factors with intention to quit smoking. Binary Logistic regression was done to find the predictor variables for Intention to Quit. A P-value of less than 0.05 was considered statistically significant.

RESULTS

176 study subjects participated in our study. Mean age of the study participants was 37.2, with a range of age 22 and 46. Among the study subjects 85.2% (150 out of 176) were married 17.3% were unmarried. 13% had not passed tenth, 43.7% had education till tenth standard, 24.4% had twelfth standard and 18.7% had education degree and above. Among the subjects 59% were workers or coolies, 27.2% were government or private employees, 13.6% were professionals.

48.3 % (85 out of 176) were having intention to quit within last six months and 51.7% (91 out of 176) were not having any intention to quit

smoking. Mean number of times the subjects who had intention to quit attempted for quitting is 2.67, which ranges between 0 and 11. Mean number of cigarettes used daily by those who are having intention to quit smoking is 4 which is less than those who are not having any intention to quit which is 4.5. 55.7% smoke during working hours and 44.3% subjects was part of smoking cessation campaign at least once. 41.5 % received advice by doctors for quit smoking and 40.3% had some health issues. 56.3% were aware about the diseases and complications related to smoking.



Graph No.1

Those who are married are having slightly more chance for intention to quit smoking than those who are unmarried (P value= 0.813 >0.05, Odds ratio=1.11). Education is considered to be a significant factor for intention to quit smoking in which P value =0.035<0.05. 65% of subjects who were tenth failed were having no intention to quit compared to 42% of those who are having educational qualification degree and above. Occupation of the subjects is not found to be a significant factor for intention to quit smoking. Those who are having health issues are two times more likely to have intention to quit smoking when compared to those who are not having any health issues (Odds ratio= 2.30) and it was found to be statistically significant also, P value= 0.007<0.01. Subjects attended at least one smoking cessation campaign was found to be 5 times more likely to have intention to quit smoking than those who haven't attended any and it was found to be statistically significant, P value= 0.00001. Subjects who received advice from the doctor regarding quitting the smoking habit are 2.8 times more likely to have intention to quit when compared to those who were not received any advice, Odds ratio= 2.8, which is found to be statistically significant were P= 0.001<0.01. Smoking during working hours and disease and complications are not found to be statistically significant factors for Intention to quit. Those who are having disease and complications are 1.62 times more likely to quit smoking than those who didn't have it. (Table No.1)

Table No.1, Association Of Socio Demographic Variables With Intention To Quit Smoking

Variable		Intention to quit		Chi square value (degrees of freedom)	Odd's ratio	P value	Inter-pretation
		Yes	No				
Marital Status	Married	73	77	0.056 (1)	1.11	0.813	Not significant
	Unmarried	12	14				
Education	<10th std	15	8	8.56 (3)		0.036	Significant
	10th passed	42	35				
	12th passed	14	29				
	Degree and above	14	19				
Occupation	Worker/ Coolie	52	52	0.542 (2)		0.761	Not significant
	Employer	21	27				
	Professional	12	12				
Health Issues	Yes	43	28	7.17 (1)	2.3	0.007	Highly Significant
	No	42	63				
Part of smoking cessation	Yes	55	23	27.7 (1)	5.42	0.001	Very High Significant
	No	30	68				

Advice by doctor	Yes	46	27	10.8 (1)	2.8	0.001	Highly Significant
	No	39	64				
Smoking during working hours	Yes	44	54	1.02 (1)	0.735	0.312	Not significant
	No	41	37				
Disease and complications	Yes	53	46	2.49 (1)	1.62	0.115	Not significant
	No	32	45				

Age of initiation of smoking habit of the subjects is compared between those who are having intention to quit and those who are having no intention to quit using Student's t test, it is found to be statistically significant were, P value is 0.001<0.01. Those who are having no intention to quit is having early age of initiation which is 17.1 years when compared to the age of initiation of those who are having intention to quit which is 19.2 years. Those who are taking 5 cigarettes in a day is having no intention to quit than those who take nearly 4 number of cigarettes, but it is not statistically significant. P value is= 0.415>0.05.

Number of times the subjects attempt for quitting is considered to be a significant factor for their intention to quit smoking, P value =0.001< 0.01. Those who are having intention to quit had the mean number of attempts as 2.67 when compared to those who are having no intention to quit which is 0.52 only. The mean age of subjects who are having intention to quit is 37.33 and for those having no intention to quit is 37.055, which is not statistically significant, P value=0.739>0.05. Age was categorised into two groups. Age 22 to 30 years as one group and 31 to 50 years as another group, it was found that those who are having more age is more likely to have intention to quit than those who are having less age, Odds ratio is 1.33, but is not found to be statistically significant. P=0.508>0.05. (Table No.2)

Table No. 2, Distribution Of Intention To Quit Smoking With Respect To Quantitative Variables

Variable	N	Mean	t value (degrees of freedom)	P value	Inter-pretation	
Age of Initiation						
Intention to quit	Yes	85	19.21	3.548 (174)	0.001	Very Significant
	No	91	17.12			
No. of Cigarettes daily smoke						
Intention to quit	Yes	85	4.05	0.818 (174)	0.415	Not significant
	No	91	4.538			
No. of attempts of quitting						
Intention to quit	Yes	85	2.67	7.938 (174)	0.001	Very Significant
	No	91	0.527			
Age						
Intention to quit	Yes	85	37.33	0.334 (174)	0.739	Not significant
	No	91	37.05			

Binary Logistics Regression was done to find out the predictor variables for Intention to quit. Those variables which was found to be significant in bivariate analysis was considered for fitting the model. It was found that Number of attempts of quitting (Odds ratio= 3.46, P value=0.001) is found to be the most significant predictor for Intention to quit, along with Part of smoking cessation campaign (Odds ratio=2.5, P value= 0.03), Age of initiation of habit of smoking (Odds ratio=1.15, P value= 0.008) and Education (P value= 0.004) which is also found to be the significant predictors for intention to quit. Nagalker's R² value= 0.56, which shows that 56% of the variance in the dependent variable is explained by the independent variables. The model was found to be the best fit with a P value of 0.001<0.01. (Table No.3)

Table No. 3, Factors Affecting The Intention To Quit By Binary Logistic Regression Model

Predictor	Odd's Ratio	95% Confidence Interval	P value
Age of Initiation of smoking habit	1.15	(1.03,1.27)	0.008<0.01
No. of attempts of quitting	3.46	(2.15,5.57)	0.001<0.01
Part of smoking cessation campaign	2.505	(1.07, 5.81)	0.03<0.05
Advice by Doctor	1.04	(0.42,2.58)	0.91>0.05
Health issues	0.67	(0.26, 1.68)	0.39>0.05
Education	0.28	(0.12, 0.67)	0.004<0.01

DISCUSSION

The study was conducted in a rural area to know the prevalence of intention to quit smoking among males who currently smoke. It was found that the intention to quit smoking among males who smoke currently is 48.3%. In a study (1) done in newly diagnosed TB patients, the intention to quit smoking was found to be 52.4%. In GATS (2) survey done among Indian tobacco users it was found that 52.2% had willingness to quit all forms of tobacco. Another study (5) done among current smokers in Vietnam, the intention to quit smoking was found to be 50.3%. In another study (6) done in West Bengal among current smokers 76.3% intended to quit smoking. In another study (7) done in Haryana the intention to quit smoking was found to be 52.4%. In most of these studies the intention to quit smoking is found to be somewhat similar to our study except in West Bengal in that it was found to be different.

In the present study, education showed significant association with Intention to quit, those who are having the education of degree and above are more willing to quit smoking than those who are tenth failed. Similar finding obtained in one study (2) where those who are graduated are more intended to quit smoking than who had no formal education. May be the referred study is the GATS survey done in India in 2016-17 and since Kerala is a part of it the result obtained was similar. In another study (4) also similar result found where highly educated people are more likely to report intention to quit compared to less educated ones. In a study (5) in Vietnam also similar result found.

Occupation was not found to be a significant factor for intention to quit smoking in present study, but in GATS survey (2) homemakers showed highest willingness to quit smoking compared to unemployed persons. May be in the present study there was not much difference in intention to quit between the people having various occupation.

In the present study, mean number of cigarettes smoked daily by those who are having the Intention to quit is 4 when compared to those who are not having any intention to quit which is 4.5. In another study (1) done in newly diagnosed TB patients it was seen that those who are having intention to quit use mean number of 1.78 packets monthly than those who are having no intention to quit which is 2.065 packets monthly, which is similar in which the number of cigarettes used is less among those who are having intention to quit smoking.

In the present study the age of initiation among those who are having intention to quit is 19.21 compared to 17.21, which is the age of initiation of those who are having no intention to quit. In another study (1) the age of initiation of intention to quit was found to be 20.94 against the age of initiation of those who are having no intention to quit which is 19.3. Those who are having early age of initiation is having no intention to quit than those who are having higher age of initiation.

Presence of any health problem in current smokers was found to be a significant factor for intention to quit in the present study. Similar to findings of a study (7) where the intention to quit is significantly higher in smokers with some health problems.

Doctors' advice was considered to be a significant factor for Intention to quit smoking in the present study. Doctor's advice to quit tobacco use is considered to be a significant factor for intention to quit in several studies (3,4,6,7). Most of the time when the smokers have some health problems only, they will approach a doctor, by that time their habit of smoking may have created problems in their body and hence they take doctors/health professional advice seriously.

Number of times the subjects attempt quitting tobacco use is considered to be a significant factor for intention to quit in the present study. In a study it was seen that those who had attempted to quit smoking in past 12 months were nearly twice more willing to quit compare to those who did not (2). Previous quit attempt is considered to be a significant factor for intention to quit in a study (3). The persons who are having intention to quit attempt quitting, a greater number of times than those who are having no intention to quit, which is found to be statistically significant also in the present study, similar result was not seen in any other study. Intention to quit smoking is a dynamic process which needs repeated attempts of quitting.

In the present study it was found that those who are having more age is more likely to quit than those with less age. In a study age is not considered to be significant factor for quitting (4). In the present study we divided the age into two categories 22 to 30 and 31 to 50 which

shows that those who are in the higher age is having more intention to quit, may be because of their duration of exposure to smoking may have caused health issues for them and hence the intention to quit.

The predictors for the intention to quit smoking was obtained by doing Binary Logistic Regression in which we found that Number of attempts of quitting in the past 6 months, Education, Age of initiation of the smoking habit and Part of smoking cessation campaign as the significant predictors for intention to quit. In a study (1) done among TB patients living in urban areas, office work, being single and high level of motivation were found to be the significant predictors. In GATS survey 2016-17 (2) it was found that young age, Individual's residence in India, Formal education, type of tobacco consumption, type of first tobacco use after waking up, attempts to quit in the past 12 months and anti-tobacco messages on newspapers/magazines and cinemas were the significant predictors.

In another study done in West Bengal (6) significant association of intention to quit was seen with agriculture as occupation, low nicotine dependence, doctor's advice, and family pressure. In another study done in Haryana (7) the predictors of intention to quit smoking obtained from binary logistic regression were education above primary level, more money spent on smoking, the presence of trigger feelings for smoking, health professional advice received for smoking cessation, awareness about harmful effects of smoking and presence of any health problems. Compared with all these studies similar predictors we also got in our study for intention to quit smoking except the number of attempts of quit smoking, which was the strong predictor in the present study.

To conclude we observed that any habit if it starts at the early age, it is very difficult to quit same for smoking. People are doing attempts for quitting but they are failing in that, that's why we have seen that some are having 11 attempts of quitting and this is found to be the most significant predictor for quitting. Educated people is having more intention to quit as they know the adverse effects of smoking on health and because of that they attend smoking cessation campaigns and if they find any health issues by their own, they will meet a doctor for advice, which we proved from the present study.

REFERENCES

1. Aryanpur M, Masjedi M.R., Mortaz E., Hosseini M., Jamaati H, Tabarsi P, Soori H., Heydari G.R., Kazempour- Dizaji M., Emami H., Mozafarian A, Intention to Quit Smoking and Associated Factors in Smokers Newly Diagnosed with Pulmonary Tuberculosis. *Tanaffos* 2016, 15 (1): 17-24.
2. SS Kar, P Sivanantham, T Rehman, P Chinnakali, S Thiagarajan, Willingness to quit tobacco and its correlates among Indian tobacco users—Findings from the Global Adult Tobacco Survey India, 2016–17. *J Postgrad Med.* 2020 Jul-Sep; 66(3): 141–148.
3. Patil B.K., Patil S.B., Kurugodiyavar M.D., Hanumant P.R., Patil V.S., A study of predictors of intention to quit tobacco use among current tobacco users - Analysis of Global Adult Tobacco Survey-India, 2009-10.
4. Dhimal GG, Pednekar MS, Gupta PC, Sansone GC, Quah A, Bansal-Travers M, et al. Quit history, intentions to quit, and reasons for considering quitting among tobacco users in India: Findings from the Tobacco Control Policy Evaluation India Wave 1 Survey. *Indian J Cancer* 2014; 51:39-45.
5. Hoang LT, Tuyet Hanh TT, Khue LN, Hai PT, Can PV, Long KQ, Linh NT, Anh DT, Van Minh H. Intention to Quit and Predictive Factors Among Current Smokers in Vietnam: Findings from Adult Tobacco Survey 2020. *Tob Use Insights.* 2022 Apr 29; 15:1179173X221098460. Doi: 10.1177/1179173X221098460. PMID: 35510034; PMCID: PMC9058567.
6. Dasgupta A, Ghosh P, Paul B, Roy S, Ghose S, Yadav A. Factors associated with intention and attempt to quit: A study among current smokers in a rural community of West Bengal. *Indian J Community Med* 2021; 46:216-20.
7. Khan ZA, Goel R, Mukherjee AK, Khan T. Prevalence and predictors of intention to quit tobacco smoking in smokers of rural area of North India (Haryana). *Int J Community Med Public Health* 2018; 5:1617-22.