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Effects of socio-demographic factors, awareness and perceptions of users on their willingness to quit smoking habit in adult smokers of Ahmedabad

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Abstract
Smoking is a known weapon which kills millions and billions of people worldwide. It is an addiction which rapidly spreads due to curiosity of trying it once. Majority of the smokers are hooked by the pleasure and crutch they found from smoking and due to which they don't try to give up the habit. Willingness to quit plays an important role in quitting smoking. If groups of people with willingness to quit smoking are targeted specifically, the ratio of quitters can be increased. Once the smoker's fear of awful trauma of quitting smoking is controlled, it is much easier for him to get rid of this risky addiction. This study is a small attempt to identify those groups of adult smoker who can be probably more willing to quit smoking habit in Ahmedabad city according to their socio-demographic status, awareness of ill effects of tobacco use and perceptions of users. The whole statistical analysis of the collected data of was carried out by means of SPSS 21.0 using descriptive statistics and logistic regression.

Keywords: smoking, willingness to quit, logistic regression, awareness of risks

Introduction
The widespread abuse of tobacco poses a threat to the whole world. Although in India, tobacco products have been used during social occasions and situations of problematic health, since time immemorial, the present day tobacco abuse is a big threat to the country. In the current complex situations the youngsters start tobacco consumption due to dissatisfaction with life, the generation gap, bereavement, loneliness or just plain curiosity as some common reasons of adoption of tobacco use which may convert into daily tobacco addiction or tobacco dependence mostly. Most of the users think that if they take tobacco occasionally, it will not harm them, and also, that they can't become addicted to it when they start using it initially. Initial or experimental tobacco use may result from a combination of peer pressure, curiosity, price and availability etc. Progression to greater involvement or to dependence may be attributable to other factors such as personality traits or social deprivation. From previous studies it can be said that from the genuine intervention efforts by effortful change in behavior of tobacco users may decline tobacco use.
Smoking is a known dominant form of tobacco abuse which kills millions and billions of people worldwide. It is an addiction which rapidly spreads majorly due to curiosity of trying it once. Majority of the smokers are hooked by the pleasure and crutch they found from smoking and due to which they don't try to give up the habit. Willingness to quit plays an important role in quitting smoking. If groups of people with willingness to quit smoking are targeted specifically, the ratio of quitters can be increased. Once the smoker's fear of awful trauma of quitting smoking is controlled, it is much easier for him to get rid of this risky addiction.

Data Collection
The face to face survey was conducted to collect required data using a predesigned and pretested questionnaire (prepared in local language Gujarati). It was given to selected smokers of age between 15 to 64 years who are residents of Ahmedabad city. An unbiased assistance was provided to those respondents who were unable to fill questionnaire at their own (e.g. illiterates, physically unable etc.). Non responses were excluded from the sample.

Statistical Analysis
The whole statistical analysis of the collected data was carried out by means of SPSS 21.0 using binary logistic regression.

Binary Logistic Regression with Multiple Independent Variables
For m explanatory variables

$$\text{Logit } (p(Y)) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \ldots\ldots\ldots\ldots + \beta_m x_m ,$$

$$\text{Where logit } (p) = \ln (p/1-p) = \log \text{odds}(p) = \alpha + \beta_1 x_1 + \beta_2 x_2 + \ldots\ldots\ldots\ldots + \beta_m x_m$$

$$\text{and the odds} = p/1-p$$

Or as a direct specification alternate

$$p \text{ or } \pi(x) = \exp(\alpha + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_m x_m) / 1+\exp(\alpha + \beta_1 x_1 + \beta_2 x_2 + \ldots + \beta_m x_m),$$

Here parameter βi = effect of covariate xi on the log odds that Y assumes 1, controlling other covariates xj. for instance, exp (βi) is the multiplicative effect on the odds of a unit increase in covariate xi. at fixed levels of other covariates xj.

Selection of the Variables
Response Variable
The present study focuses on the phenomenon of willingness to quit smoking therefore it was considered as response variable with two categories willing to quit (code 1) and not willing to quit (code 0).

Explanatory Variables
Different socio-demographic variables, awareness of ill effects of different type of tobacco consumption and different Perceptions of smokers are selected as explanatory variables. The analytical results are presented in Table 1.

Table 1: Odds ratios and percentages of willingness to quit tobacco in smokers of Ahmedabad

Explanatory variables		Proportion	Odds ratio		
Groups	**Categories**	**%**	**Odds Ratio**	**Upper bound**	**Lower bound**
Gender	Female	57.5	6.191*	2.803	13.674
	Male	45.6	1	-	-
Age (in years)	55-64	42.2	0.242*	0.069	0.849
	45-54	46.7	0.606	0.278	1.322
	35-44	56.3	0.970	0.433	2.171
	25-34	48.6	0.934	0.401	2.177
	15-24	46.7	1	-	-
Religion	Other Rel.	38.5	0.301	0.050	1.817
	Christian	38.5	0.861	0.328	2.261
	Sikh	63.2	0.310	0.074	1.302
	Muslim	46.3	0.894	0.461	1.733
	Hindu	48.4	1	-	-
Cast	OBC	52.7	0.980	0.494	1.942
	ST	26.2	0.282*	0.102	0.785
	SC	38.9	0.465*	0.236	0.914
	Open	55.7	1	-	-
Occupation	Professional	64.1	0.329	0.068	1.587
	Employer	62.9	0.402	0.085	1.908
	Employee	53.2	0.251*	0.071	0.883
	Self Employed	45.2	0.230*	0.061	0.858
	Student	42.7	1.255	0.249	6.313
	Unemployed	33.9	0.201*	0.059	0.683
	Labourers	39.5	1	-	-
Level of Education (in years)	16 Or More	69.2	10.854*	2.369	49.728
	13-15	49.4	5.281*	1.303	21.410
	8-12	40.7	2.484	0.792	7.793
	1-7	49.6	3.780*	1.539	9.285
	No formal ed.	31.3	1	-	-
Annual Income (in lakhs)	10 or more	58.8	0.406	0.124	1.329
	5-9.9	60	0.755	0.275	2.071
	2.5-4.9	40.7	0.700	0.266	1.839
	Below 2.49	39.3	1	-	-
AS (Awareness of ill effects of active smoking)	no	27.7	0.660	0.230	1.893
	yes	49.5	1	-	-
PS (Awareness of ill effects of passive smoking)	no	39.8	0.913	0.461	1.805
	yes	55.9	1	-	-
SML (Awareness of ill effects of smokeless tobacco)	no	39.9	1.694	0.815	3.523
	yes	50.4	1	-	-
Tobacco price increase helps in quitting smoking habit (TPI)	Strongly agree(SA)	42	0.684	0.286	1.637
	Agree(A)	33.8	0.487	0.221	1.073
	Don’t know(DK)	33.3	0.750	0.104	5.388
	Disagree(DA)	42.6	0.496*	0.258	0.955
	Strongly disagree(SDA)	56.5	1	-	-
Own will power helps in quitting smoking habit (OWP)	Strongly agree (SA)	58.6	1.914	0.393	9.317
	Agree (A)	39.5	1.103	0.225	5.411
	Don’t know (DK)	29	1.224	0.192	7.811
	Disagree (DA)	33.3	1.109	0.187	6.565
	Strongly disagree (SDA)	33.3	1	-	-
Visible health effects of smoking on your own or others help in quitting smoking habit (VHE)	SA	64.8	1.286	0.512	3.229
	A	49.3	1.380	0.635	2.997
	DK	46.3	1.651	0.713	3.821
	DA	37.7	0.780	0.360	1.689
	SDA	44.2	1	-	-
Effects of environmental tobacco smoke help in quitting smoking habit (ETS)	SA	50	1.108	.313	3.916
	A	62.3	2.127	0.952	4.751
	DK	48.9	0.823	0.290	2.342
	DA	48.1	1.287	0.688	2.407
	SDA	41.8	1	-	-
Restriction or support of family and well-wishers help in quitting smoking habit (ROF)	SA	56.8	3.301*	1.353	8.055
	A	51	3.432*	1.328	8.871
	DK	60.9	11.588*	2.822	47.581
	DA	35	0.745	0.318	1.743

	SDA	32.4	1	-	-
The youth access measure help in quitting smoking habit (YAM)	SA	75	1.892	0.105	34.092
	A	38.5	0.946	0.208	4.297
	DK	28.6	0.725	0.274	1.918
	DA	53.8	1.417	0.799	2.516
	SDA	48.7	1	-	-
Adverse effects of smoking on professional dealing help in quitting smoking habit (AOP)	SA	77.4	0.825	0.230	2.959
	A	57.1	0.547	0.233	1.283
	DK	27.6	0.212*	0.082	0.548
	DA	52	0.677	0.322	1.425
	SDA	44.4	1	-	-
Religious restriction and spirituality help in quitting smoking habit (RE)	SA	63.3	3.195*	0.971	10.510
	A	60	3.451*	1.305	9.128
	DK	55	2.898*	1.384	6.067
	DA	47	1.489	.844	2.624
	SDA	40.4	1	-	-
Advise of a doctor or a well-wisher help in quitting smoking habit (AOD)	SA	60.5	3.808*	1.463	9.911
	A	62.1	3.452*	1.636	7.284
	DK	44.7	2.780*	1.288	6.001
	DA	40.4	1.775	0.857	3.676
	SDA	34.8	1	-	-
Text or pictorial warnings on packages help in quitting smoking habit (PW)	SA	42.9	0.542	0.073	4.009
	A	69.2	2.073	0.370	11.623
	DK	33.3	0.394	0.074	2.109
	DA	48.3	1.366	0.716	2.605
	SDA	47.2	1	-	-
knowledge of ill effects of smoking given by seminar, campaigns or mass media help in quitting smoking habit (SCM)	SA	39.3	0.565	0.185	1.731
	A	57.7	1.338	0.589	3.041
	DK	46.8	1.044	0.529	2.060
	DA	44.3	0.649	0.337	1.251
	SDA	47.9	1	-	-

Results

Table 1 summarizes the analysis of data of willingness to quit tobacco habits of current smokers of different categories residing in Ahmadabad including covariates awareness of ill effects of tobacco use and different perceptions towards cessations.

Explanation of odds ratios of Table 1

Odds ratios with * sign in Table 1 are O.R.s with statistical significance with p values less than 0.05.They can be interpreted in following way.

Odds ratio of willingness to quit tobacco among female smokers is 6.191*(2.803-13.674) which shows odds of females willing to quit is 6.191 time that of odds of willingness in male. Females are more likely to have willingness of quitting combusting tobacco habit than male. Odds ratio of users between age 55 to 64 willing to quit tobacco is 0.242 times that of odds of users between the ages of 15 to 24 willing to quit tobacco. Old age users are significantly less likely to have willingness to quit tobacco than young age users. Combusting tobacco users of schedule cast are less likely to willing to quit tobacco addiction than general cast male smokers with odds ratio 0.465*(0.236-0.914). Employees and Self-employed workers/Street vendors have odds ratios 0.251* and 0.230* respectively. Which show that employee and self-employed/ street vendor users of combusting tobacco products are significantly less likely to willing to quit tobacco use than labourer who smoke. Educated smokers having education between 1 to 7 years, 13 to 15 years and 16 or more years are more likely to be willing to quit their smoking habits than illiterate smokers. No significant effect of income is found on willingness of tobacco quitting. Smokers who disagree with the statement that "tobacco price increase helps in quitting smoking habit" are significantly less likely to have willingness to quit tobacco habit than smokers who strongly disagree with the statement. Smokers who strongly agree with. agree with or don't have any opinion about the statement "Restriction or support of family and well-wishers help in quitting smoking" are significantly more likely to willing to quit smoking habit than smokers who strongly disagree with the statement with respective odds ratios 3.301*, 3.432* and 11.588*. People who don't know about the relation between effect of smoking on professional deals and cessation are significantly less likely to have willingness to quit smoking than people who strongly disagree with supportive role of, absurd effects on profession of smoking, to successful cessation with odds ratio 0.212*. Smokers who strongly agree with, agree with and don't have any opinion about the statement "Religious restrictions and spirituality help in quitting smoking habit" are more likely to willing to quit smoking than people who disagree or strongly disagree with the statement with odds ratios 3.195*,3.451* and 2.898*. Smokers who strongly agree with. agree with or don't have any opinion about the statement "Advise of a doctor or a well-wisher help in quitting smoking" are more likely to have willingness to quit smoking habit than smokers who strongly disagree with the statement with odds ratios 3.808*,3.452* and 2.780*.

Predicting Response Probabilities

Log odds (p) = $T = \alpha + \beta_1 X_1 + \beta_2 X_{2+}.....+ \beta_m X_m$

Log odds (p) = - 1.781 + 1.823(Female) - 1.419(A-1) - 0.5(A-2) - 0.031(A-3) - 0.068(A-4) - 1.201(OTH) - 0.150(CHR) - 1.172(SIKH) - 0.112(MUS) - 0.020(OBC) - 1.264(ST) - 0.767(SC) - 1.112(PRO) - 0.911(EMP) - 1.383(EMPL) - 1.471(SE/SV) + 0.227(STD) -1.606(UEM/UPW/HSW) + 2.385(ED-1) + 1.664(ED-2) + 0.910(ED-3) + 1.33(ED-4) - 0.902(I-1) - 0.282(I-2) - 0.357(I-3) - 0.416(ASN) - 0.091(PSN) - 0.527(SMLN) - 0.379(TPI-SA) - 0.719(TPI-A) - 0.288(TPI-DN) - 0.701(TPI-DA) + 0.649(OWP-SA) + 0.098(OWP-A) + 0.202(OWP-DN) + 0.104(OWP-DA) + 0.252(VHE-SA) + 0.322(VHE-A) + 0.501(VHE-DK) - 0.248(VHE-DA) + 0.102(ETS-SA) + 0.755(ETS-A) - 0.194(ETS-DK) + 0.252(ETS-DA) + 1.194(ROF-SA) + 1.233(ROF-A) + 2.450(ROF-DK) - 0.295(ROF-DA) + 0.638(YAM-SA) - 0.056(YAM-A) - 0.321(YAM-DK) + 0.349(YAM-DA) - 0.193(AOP-SA) - 0.604(AOP-A) - 1.552(AOP-DK) - 0.390(AOP-DA) + 1.162(RE-SA) + 1.239(RE-A) + 1.064(RE-DK) + 0.398(RE-DA) + 1.337(AOD-SA) + 1.239(AOD-A) + 1.022(AOD-DK) + 0.574(AOD-DA) - 0.613(PW-SA) + 0.729(PW-A) - 0.931(PW-DK) + 0.312(PW-DA) – 0.570(SCM-SA) + 0.291(SCM-A) + 0.043(SCM-DK) - 0.432(SCM-DA)

Now Odds (p) = EXP (Log odds (p))

And predicted probability (p) = $\frac{Odds\ (p)}{1+Odds\ (p)}$

Let's have an example to find probability of the following smoker participant willing to quit smoking.

GENDER	AGE	RELIGION	CAST	OCCUP	EDUCATION	INCOME	AS
MALE	54 YRS	HINDU	OPEN	EMP	18 YRS	9 LAKHS	ASY

PS	SML	TPI	OWP	VHE	ETS	ROF	YAM	EOP	RE	AOD	PW	SCM
PSY	SMLY	DA	SA	A	A	DA	DA	DK	DA	SA	DA	A

LOG ODDS = - 1.781 + 0(1) - 0.5(1) + 0(1) + 0(1) - 0.911(1) + 2.385(1) - 0.282(1) - 0(1) - 0(1) - 0(1) - 0.701(1) + 0.649(1) + 0.322(1) + 0.755(1) - 0.295(1) + 0.349(1) - 1.552(1) + 0.398(1) + 1.337(1) + 0.312(1) + 0.291(1) = 0.776

Odds = EXP (0.776) = 2.173

Predicted Probability = 2.173 /1+2.173 = 0.68

This value 0.68 is the probability of the considered case willing to quit tobacco smoking.

Conclusion

From the analytical results, we can reach to the conclusion that Female gender, higher education and positive perceptional factor like family support or restriction, religious conditions and advises of doctors are comparatively high predictors of willingness to quit smoking. From the conclusive results we can find the groups with less and high willingness of quitting smoking and target more addictive groups by cessation programs to improve their willingness and mind set of quitting smoking habit which may gradually turn into successful quitting attempt.

References

1. Roberts NJ, Kerr SM, Smith SM. Behavioural interventions associated with smoking cessation in the treatment of tobacco use, *Health Services Insight*, 2013; 6:79.
2. Rigotti N, Munafo MR, Stead LF. Interventions for smoking cessation in hospitalized patients, *The Cochrane Library*, 2007.
3. Health Quality Ontario Population-based smoking cessation strategies: a summary of a select group of evidence-based reviews, *Ontario health technology assessment series*, 2010; 10(1):1.
4. Uppal N, Shahab L, Britton J, Ratschen E. The forgotten smoker: a qualitative study of attitudes towards smoking, quitting and tobacco control policies among continuing smokers, *BMC public health*, 2013; 13(1):1.
5. Almogbel YS, Abughosh SM, Almeman AA, Sansgiry SS. Factors associated with the willingness to quit smoking among a cohort of university students in the KSA, Journal of Taibah University Medical Sciences. 2016; 11(2):128-133.
6. Lund KE. Association between willingness to use snus to quit smoking and perception of relative risk between snus and cigarettes, Nicotine & Tobacco Research, 2012; 14(10):1221-1228.