

RESEARCH ARTICLE

PREDICTORS OF INTENTION TO QUIT TOBACCO AND BARRIERS TO QUIT TOBACCO IN ADULTS AMONG RESIDENTS OF RAIPUR CITY, CHHATTISGARH

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1. Predictors of Intention to Quit Tobacco and Barriers to Quit Tobacco in Adults among Residents of Raipur City, Chhattisgarh, Department of Community Medicine, Pt. J.N.M. Medical College, Raipur, Chhattisgarh, India.

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Abstract

Background: Tobacco claims the lives of half of its users who fail to quit. Tobacco usage in any form leads to the death and illness of millions annually. The tobacco epidemic represents one of the most significant public health challenges.

Aims/Objectives: To assess the predictors of intention to quit tobacco and barriers to quit tobacco in adults among residents of Raipur city, Chhattisgarh.

Methodology:Cross-sectional, community-based observational

study.Pre-designed, pre-tested semi-structured questionnaire of sociodemographic information and the use of any kind of tobacco, quitting attempts was put to each subject to assess their intention to quit, barriers to quit, smoking practices, smoking history, knowledge about smoking-related damage and perceived health status.

Results: Among the 410 study participants, a majority (224 or 54.6%) reported having the intention to quit tobacco use. 45.4% (186) were identified as having barriers preventing them from quitting tobacco.

Conclusions: The prevalence of the intention to quit tobacco among study participants is high, similar to national levels, with significant barriers to quitting. Family pressure and improve in own health was strong predictors of intention to quit tobacco.

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Introduction:-

Tobacco consumption stands as the foremost contributor to preventable fatalities in today's world.[1]Tobacco Leads to the deaths of half of its users who are unable to quit.[2]India hosts the world's second-largest population of tobacco users.[3]As per the Global Adult Tobacco Survey (GATS-2016-2017), findings indicate that 28.6% of all Indian adults presently utilize tobacco. Approximately one in every ten Indian adults (10.7%; 99.5 million) currently engages in smoking tobacco, while one in every five Indian adults (21.4%) presently used smokeless tobacco.[4]According to NFHS-05 data, 17.3% of women and 43.1% of men aged 15 and above use tobacco nationally. In Chhattisgarh, 10.9% of women and 37.5% of men in the same age group use tobacco.On average, individuals spend 473.2 Rupees per month on cigarettes and 217.8 Rupees per month on bidis.[5]According to the GATS-2 in India 55.4% of smokers were intending to quit smoking, while 49.6% of smokeless tobacco users were

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planning to cease their use of smokeless tobacco. Similarly in Chhattisgarh 40.8% of smokers and 41.4 %ofSmokeless tobacco users plan or think to quit.[4]Barriers encompass settings fostering smoking, stressors, psychological conditions, interpersonal tensions, substance abuse, and restricted access to cessation services.[6] Inadequate assistance from healthcare providers poses a common barrier to cessation among diverse vulnerable groups. [21]

Chhattisgarh has a high prevalence of tobacco users, ranking among the top 10 states in India. [4]None of the studies were done in Chhattisgarh to find the factors for intention to quit and barriers to quitting. Therefore, the study is designed to find the motivational factors driving the intention to quit tobacco and identify the barriers hindering cessation efforts in unique context of Raipur City, the capital of Chhattisgarh.

Objectives:-

To find out the predictors of intention to quit tobacco & find out the barriers to quitting tobacco among adults.

Methodology:-

The study was a cross-sectional design conducted in Raipur City, Chhattisgarh, India, covering 10 selected wards from May 2022 to May 2024. The study population consisted of current tobacco users in these wards, with a sample size of 410 subjects, estimated based on the prevalence of tobacco quitting in Chhattisgarh (41.4%). The study utilized a multistage sampling technique, with the Population Proportion to Size (PPS) method used to select wards and households. Data collection was carried out through the Epi-Random Walk Technique, ensuring random selection of households. Structured surveys and interviews were used to assess tobacco use patterns, frequency, and the types of tobacco products used. Statistical analysis included both descriptive and inferential statistics, with data presented as percentages, means, and standard deviations. Adults over 18 using tobacco in Raipur city, who consented to participate, were included in the study. Each participant was informed about the study's purpose and an informed consent was taken A pre-designed and pre-tested semi-structured questionnaire based on the GATS Survey 2016-17, which included 5 sections namely socio-demographic information, tobacco use patterns, Health Awareness, Perception of tobacco control measures, reason for Initiation of tobacco use and Intention to Quit. The questionnaire consisted of questions like quitting attempts, smoking practices, smoking history, knowledge about smoking-related damage and perceived health status.Categorical variables were interpreted using frequencies (%) and Chi-square & test were used to evaluate the association among categorical variables. Statistical analysis was done using Epi Info and Jamovi software and p-value <0.05 was considered as statistically significance.

Results:-

Among the 410 participants, two-thirds (66.6%) used smokeless tobacco, while one-third (33.4%) smoked. The mean age was 36.51 years (SD \pm 14.30), with the majority (85.1%) being male. Regarding marital status, 68.3% were married, 26.6% were unmarried, and 5.1% were widowed, divorced, or single. Most participants (65.4%) were from nuclear families, while 46.6% belonged to joint families. Employment data showed 65% were employed and 35% were unemployed, with 76.8% from the lower socio-economic strata (upper-lower class).Smokers were generally younger, with a median age of 30 years (SD \pm 14.47), while smokeless tobacco users were slightly older, with a median age of 34 years (SD \pm 14.20).Table 1 outlines the socio-demographic characteristics of the participants.

In terms of barriers to quitting, 186 participants (45.3%) faced significant challenges. Addiction was the most common barrier (43.6%), followed by anxiety and stress (37.6%). Other barriers included enjoyment of tobacco (14%), difficulty with behavioural change (4.3%), and lack of awareness (0.5%).

Table 2 provides data on these barriers. Binary logistic regression analysis (Table 3) identified several significant factors influencing the intention to quit tobacco. Participants spending over Rs. 1000 per month on tobacco were more likely to intend to quit (OR 1.989). Those who did not consume tobacco in the morning were more than twice as likely to express the intention to quit (OR 2.350). Support for tobacco tax increases and exposure to anti-tobacco media messages also emerged as strong predictors of quitting intentions (OR 0.186 and OR 0.236, respectively). These findings highlight the role of financial burden, consumption patterns, policy support, and awareness campaigns in motivating tobacco cessation.

Tables:

 Table 1:- Socio-demographic Characteristics of Participants.

Socio-Demographic Characteristics		Smoke Tobacco Users (N=137)		Smokeless Tobacco Users (N=273)		Total (N=410)		
		N	%	Ň	%	Ν	%	
AGE (Years)	≤20	9	6.6	20	7.3	29	7.1	
	21-30	64	46.7	92	33.7	156	38.0	
	31-40	25	18.2	61	22.3	86	21.0	
	41-50	13	9.4	53	19.4	66	16.1	
	51-60	16	11.7	28	10.3	44	10.7	
	>60	10	7.3	19	7.0	29	7.1	
Mean year of age among tobacco user was 36.51 Years (SD \pm 14.30)								
CENIDED	Male	124	90.5	225	82.4	349	85.1	
GENDER	Female	13	9.5	48	17.6	61	14.9	
		-			_	_		
MARITAL STATUS	Married	71	51.8	209	76.5	280	68.3	
	Unmarried	55	40.1	54	19.8	109	26.6	
	Divorced/Widow/Widow er	11	8.1	10	3.7	21	5.1	
EDUCATION LEVEL	Above Middle School (above 8 th Class)	92	67.2	118	43.2	210	51.2	
	Up to Middle School (Up to 8 th Class)	45	32.8	155	56.8	200	48.8	
EMPLOYMENT	Employed	88	64.2	178	65.2	266	64.9	
STATUS Unemployed		49	35.8	95	34.8	144	35.1	
		-			_	_	-	
SOCIO-ECONOMIC CLASS	Above Upper Lower Class	45	32.8	50	18.3	95	23.2	
	Up to Upper Lower Class	92	67.2	223	81.7	315	76.8	
TYPE OF FAMILY	Joint	38	27.7	104	38.1	142	36.6	
	Nuclear	99	72.3	169	61.9	268	65.4	

Table 02:- Barriers for Intention to quit Tobacco among Study Participants.

Barriers for Intention to quit Tobacco	Smoke Tobacco Users(N=41)		SLT Users (N =145)		Total (N=186)	
	(N)	(%)	(N)	(%)	(N)	(%)
Anxiety, Stress	12	29.3	58	40.0	70	37.6
Passion/pleasurable	1	2.4	25	17.3	26	14.0
Addicted to it	26	63.4	55	37.9	81	43.6
Behavior changes	2	4.9	6	4.1	8	4.3
Not aware of its harmful effects	00	00	1	0.7	1	0.5

Variables	Intention to Quit Present (N=224)	Intention to Quit Absent (N=186)	AOR	p-value	95% C.I. For AOR Lower Upper			
Gender								
Female	26 (42.6)	35 (57.4)	0.851	0.670	0.406	1.785		
Male	198 (56.7)	151(43.3)	Ref	0.070				
Employment status								
Employed	161 (60.5)	105 (39.5)	Ref	0.206	0.477	1.340		
Unemployed	63 (43.8)	81 (56.2)	0.800	0.390				
Age of Initiation								
≤18 years	131(47.3)	146 (52.7)	Ref	0.114	0.900	2.657		
>18years	93 (69.9)	40 (30.1)	1.546	0.114				
Monthly Expenditure	2							
≤1000	124 (48.8)	130 (51.2)	Ref	0.013	1.155	3.426		
>1000	100 (64.1)	56 (35.9)	1.989					
Duration of Tobacco	Use	•						
≤10 yrs	129 (60.0)	86 (40.0)	Ref	0.176	0.440	1.162		
>10 yrs	95 (48.7)	100 (51.3)	0.715	0.170				
Early Morning Tobac	cco Cravings							
Yes	50 (33.7)	98 (66.2)	Ref		1.351	4.087		
No	174 (66.4)	88 (33.6)	2.350	0.002				
Harmful –Effects								
Yes	200 (63.3)	116 (36.7)	Ref	0.104	0.238	1.142		
No	24 (25.5)	70 (74.5)	0.522	0.104				
Increase Taxes								
Favour	193 (71.0)	79 (29.0)	Ref	0.0001	0.107	0.322		
Oppose	31 (22.5)	107 (77.5)	0.186	0.0001				
Anti -Tobacco-Media messages								
Yes	200 (66.7)	100 (33.3)	Ref	0.0001	0.120	0.466		
No	24 (21.8)	86 (78.2)	0.236	0.0001				
Warning Awareness								
Yes	206 (60.9)	132 (39.1)	Ref	0.697	0.501	2.811		
No	18 (25.0)	54 (75.0)	1.187	0.097				

 Table 03:- Aassociation between Various Factors and Intentions to quit Tobacco using Bivariate Logistic Regression

 Analysis.

The study in Raipur, Chhattisgarh, focused on factors influencing tobacco cessation, quit intentions, and barriers among 410 users, with two-thirds using smokeless tobacco and one-third smoking. In comparison, Dhumal et al.'s study of 8051 participants across four cities found 72% used smokeless tobacco, 17.1% smoked, and 10.9% used both. Similarly, Islam et al.'s research in Burdwan with 128 participants showed 54.5% used smokeless tobacco, 21.9% smoked, and 23.6% used both.[8-9]In this study of 410 participants with a mean age of 36.51 years, smokers were younger (median age 30) compared to smokeless tobacco users (median age 34). This aligns with Islam et al.'s finding of a mean age of 41.1 years and Dasgupta et al.'s mean age of 47.8 years among smokers.[3,9]The study found that 90.5% of smokers and 82.4% of smokeless tobacco users were male, consistent with NFHS-5 data showing higher tobacco use among men in Chhattisgarh compared to national averages, and with Khan et al.'s report of 85.1% male tobacco users.[10-11]In the current study, 15% of participants were literate, contrasting with Islam et al.'s study in Alamganj, where 55.3% were illiterate.[9] In the study of 410 tobacco users, 137 used smoked products (70.8% cigarettes, 29.2% beedis), and 273 used smokeless tobacco, primarily Gutkha & Pan (48%), followed by Khaini (27.8%) and Gudakhu& Manjan (24.2%). This contrasts with GATS-2, which reported Khaini as more common. Shrivastava et al. (2015) noted high Gutkha use among Raipur students. Compared to cigarette and beedi trends, GATS-2 and NFHS-5 show higher cigarette use, while Tubachi et al. (2017) found more beedi smokers than cigarette smokers.[4,10,12-13]The study found that, despite a low average monthly income (Rs 4254), most tobacco users spend Rs 500-1500 on tobacco, with smokers spending more (median Rs 1200) than smokeless tobacco users

(median Rs 1000). This aligns with GATS-2 showing a national average expenditure of Rs 1192, while Chhattisgarh's average was lower at Rs 473.2.[4] Khan et al. (2018) found one-third spent <Rs 500, and two-thirds spent >Rs 500 monthly.[11]The study shows over 67% of participants started tobacco use before age 18, with smokeless tobacco users starting earlier (median 14 years) than smokers (median 18 years). This trend is concerning given the median age of initiation across all users is 16.5 years. GATS-2 shows Chhattisgarh's median initiation age is 18.5 years,[4]while GYTS 2019 reports even earlier ages for tobacco initiation among youth.[14] Khan et al. (2018) and Georgiadou et al. found median initiation ages of 20 years. [12] The study found that 29% of tobacco users had used tobacco for up to 5 years, with a median duration of 10 years. Smokers had a median use duration of 10 years, while SLT users had a median of 14 years, indicating longer use and greater dependence. Islam et al. (2012) found over half of their participants had used tobacco for 20 years or less. [9]Roy R. Marzo et al. (2021) reported 25.9% of smokers had used tobacco for less than a year, with 54.1% using it for 1-5 years.[16] This study found that 36.1% of participants used tobacco in the early morning, with 32.8% of smokers and 37.7% of SLT users consuming it soon after waking. GATS-2 reported 58.5% of daily users-initiated tobacco within 30 minutes of waking, and GYTS (2019) showed 27% of smokers had morning cravings.[4,14]Immediate cravings were observed in 100% of smokers and 96.1% of SLT users within 30 minutes of waking. Panigrahi et al. (2021) and M. Yang et al. (2009-2010) found similar early morning tobacco use patterns.[17-18]The study found 77.1% of tobacco users knew about its harmful effects. This is comparable to GATS-2 (92.4%)[4] and GYTS (63%)[4,14]Sandra Sagar and Y. Mogit Gupta (2020) reported 88% awareness among smokers.[19]Rao A.R. et al. (2013) and Tubachi et al. (2018) found 68.3% and 75.8% awareness of second-hand smoke's harm, respectively.[10,13]The study found 66.3% of participants supported increasing tobacco taxes. Rana et al. (2023) used a Markov model and projected that higher tobacco taxes could reduce smoking prevalence by 6.2% in India from 2017-2025.[21] This study found 73.2% of participants were exposed to anti-tobacco media, with higher exposure among smokers (83.9%) than SLT users (67.8%). GATS 2 (2016-17) [4]reported 76% noticed anti-smoking media, primarily on television (66.9%). Dasgupta et al. (2021) found 67.2% saw cessation ads recently, and Danish Imtiaz et al. (2015) noted 46.2% cited television as the main information source. [3,22]The study found 82.4% of tobacco users were aware of warning labels, with 88.3% of smokers and 79.5% of SLT users recognizing them. GATS-2 (2016-17) reported similar awareness levels (over 83% for cigarettes, 78.4% for beedis, and 78.4% for SLT).[4]In Chhattisgarh, warning labels prompted quitting thoughts in 77.8% of beedi smokers, 55% of cigarette smokers, and 57.9% of SLT users. [4] Aiswarya Vijayakrishna et al. (2022) found 93.8% of participants noticed warnings.[23]This study found that among 410 participants, 54.6% intended to quit tobacco, with 70.1% of smokers and 46.9% of SLT users expressing this intention. This is consistent with GATS-2 (2016-17) and NFHS-5 findings, where 50-60% of tobacco users intended to quit.[4,14]The GYTS (2019) showed higher quitting intentions among youth smokers (21%) compared to SLT users (27%).[14] Khan ZA et al. (2018) found 52.4% intended to quit, and Dasgupta et al. (2021) reported 76.3%.[3,11]In contrast, Surani et al. (2012), Dhumal et al. (2015), and Driezan et al. (2019) found lower quitting intentions (19.6% to 36%).[3,24-25]The main reasons included family disapproval (40.6%) and health concerns (34.4%), with smokers citing health reasons more often than SLT users. Financial concerns motivated 13.8%, and social factors (peer disapproval and setting a good example) were less significant (10.3% and 0.9%, respectively). GATS-2 (2016-17) also highlighted health and family reasons as major motivators for quitting.[4] Dasgupta et al. (2021) found 57.1% cited family pressure, while Martins et al. (2021) reported 74.5% cited health improvement as their primary reason.[3,26]This study found that out of 410 participants, 186 faced barriers to quitting tobacco. The main barrier was addiction (43.6%), especially among smoked tobacco users (63.4%). Anxiety and stress were also significant barriers (37.6%), more so for SLT users (40%). Other barriers included the pleasure of use (14%) and difficulty with behavioural changes (4.3%). GATS-2 similarly identified addiction and stress as major challenges. [4] Basha et al. (2022) also noted addiction and stress as key barriers, while Carlson et al. (2018) highlighted friends' smoking as a major obstacle[27-28]

Limitations:-

The study focused solely on current tobacco users, excluding former users, never users, and occasional or adolescent users. It relied on self-reported data, which may be subject to inaccuracies due to underreporting or misrepresentation. Furthermore, the study did not include longitudinal tracking to verify whether participants' intentions to quit translated into actual cessation or to capture changes in quit intentions over time.

Conclusion:-

The study underscores the high prevalence of tobacco use in Raipur City, with significant income spent on tobacco despite low average earnings. While there is awareness of tobacco's addictive nature, knowledge gaps about its health risks and regulations persist. Addiction and anxiety are key barriers to quitting, and socio-demographic factors

influence intentions to quit. Targeted prevention and cessation programs, especially for youth, are crucial to address this public health issue.

Conflict of Interest:

None declared. **Funding:** No external funding sources.

Approval of Institutional Ethical Review Board:

The study was approved by the Institutional Ethics Committee, (488 dated 24/05/24).

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