

A Study on the Pattern of Self-reported Tobacco Addiction in Hypertensive Patients in Gujarat, India

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Original Article

Abstract

Background: Both hypertension (HTN) and tobacco addiction pose a threat to the health, environment, and socioeconomic status (SES) of the people. When tobacco use disorder exists in people with HTN, it hastens the disease progress and causes early complications. The present study aimed to study the knowledge and practice of tobacco addiction in patients with HTN and find out the correlates of knowledge and practice of tobacco addiction.

Methods: A cross-sectional study was conducted for a period of one year in the Jamnagar District of Western Gujarat, India. Out of total 400 samples, 50% were collected from the five selected Community Health Centers (CHCs) by random sampling and the rest from non-communicable disease (NCD) clinics at the tertiary care hospital of the district.

Findings: Most of the patients were in their fifties or above (67.0%), women (57.0%), and married (86.5%). Only 12.0% had awareness about the hazards of tobacco addiction and the prevalence of tobacco addiction was 11%. It was found that use of smokeless tobacco (SLT) among samples was the highest (72.7%) followed by dual consumption, i.e., SLT and smoking (20.5%). The frequency of consumption was ≥ 5 times/day in 54.5%, 70.4% were addicted for > 10 years, and only 15.9% had ever tried to quit tobacco while only 11.4% had successfully quit it. It was seen that those who were aged < 50 years, men, literates, employed, and those belonging to higher SES and urban residence had better knowledge of the health hazards. This was found to have significant statistical association.

Conclusion: The results provide valuable insight into the tobacco addiction in patients with HTN on which non-pharmacological treatment of HTN can be based.

Keywords: Hypertension; Smoking; Tobacco; Smokeless; Cardiovascular disease

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Introduction

According to a finding, about 1.3 billion people in the world are suffering from hypertension (HTN).¹ It is expected to increase to 1.56 billion people by 2025.² In most of the countries, it is seen that about 30% of the affected population are adults.³ The burden of HTN is on the rise in most of the developing countries including India,⁴ where the situation is quite alarming as around 33% urban and 25% rural Indians are hypertensive.⁵ Though, proper treatment of HTN prevents complications and other cardiovascular diseases (CVDs) and ameliorates the quality of life (QOL) in the affected patients, it remains inadequately-managed in most cases. One of the primary reasons of inadequate treatment might be non-compliance to the necessary lifestyle modifications. Tobacco smoking is an important cause of sudden death from coronary heart disease (CHD) in men below 50 years of age. As tobacco consumption is an independent risk factor for HTN,^{6,7} tobacco cessation is an imperative measure in lifestyle modification in patients with HTN. The prevalence of smoking is around 30% globally⁸ and 55% nationally⁹ and the prevalence of overall tobacco consumption is still high in India, so the chance of tobacco addiction in people with HTN is very high. Therefore, the specific objectives of this study were to assess the knowledge and practices of tobacco addiction as well as their correlates in patients with HTN.

Methods

This cross-sectional study was conducted in the district of Jamnagar, a coastal region in the western part of India in the state of Gujarat, for a period of one year, from July 2013 to June 2014. Sample size (N) was calculated using this formula: $N = 4pq/L^2$, where p is population, q is 100-p, and L is relative precision. At 95% confidence interval (CI), taking prevalence (p) as 50%^{10,11} and L as 10% of p, a sample size of 400 was calculated. Out of the total calculated sample, half of the study subjects (50%) were selected from the tertiary care hospital of the study district, Jamnagar, and the remaining half were selected from Community Health Centers (CHCs) of the district by simple random sampling method. From each CHC, forty patients were taken for the study. Data were collected from

patients only on their first visit after the onset of the study.

Known cases of HTN who were ≥ 30 years of age were included in the study. Patients who were unwilling to participate in the study, critically or mentally ill, or pregnant were excluded from the study.

Data collection was done using a pre-tested and semi-structured type of questionnaire by personal interview. The questionnaire included questions related to knowledge about HTN, the practices of tobacco consumption, disease control and complications, lifestyle, and lifestyle modifications. While collecting the data, questions on knowledge, attitude, and practice were administered together to maintain the fluidity and they were later segregated prior to data entry. Each satisfactory answer was scored as 1 and if the aggregate score was $\geq 50\%$, the patient would be classified as knowledgeable (Yes/No), having right attitude (Yes/No), and having good practice (Yes/No). Using modified Prasad's classification [All India Consumer Price Index (CPI) of the year 2013], socioeconomic status (SES) was estimated.¹² Anthropometric measurements were taken according to standard guidelines and clinical examination was also carried out.

In the present study, smoked form include cigarette, bidi (tobacco hand-rolled in dried tendu leaves), and other forms of smoked material. Smokeless tobacco (SLT) use consisted of chewing gutkha or paan masala, betel quid with tobacco, and khaini. Term "ever user" was defined as a person having used tobacco even once in his/her lifetime, "current user" was defined as a person having used tobacco at least once in the last 30 days preceding the visit, and "never user" was defined as a person who never used tobacco even once in his/her lifetime.^{13,14}

The data entry was done using Microsoft Office Excel (version 2007). To summarize the data, descriptive statistics of frequency, percentage, mean, and standard deviation (SD) were used. Chi-square test using MedCalc (version 10.4.8.0) was done to establish statistical association, and odds ratio (OR) and its CI were calculated. Alpha level was set at 0.05 (5%).

Study was approved by Institutional Ethics Committee of Shri M.P. Shah Government Medical College, Jamnagar. An informed consent was taken from all participants of the study after

fully explaining the purpose of the study and assuring them of full confidentiality. The interview was conducted in a language they well understood (Gujarati and Hindi).

Results

Table 1 shows the patients' socio-demographic characteristics. About 67.0% of the patients belonged to ≥ 50 years age group. Half of the patients were women and the male/female ratio was 1:1.3. Hinduism was found to be the predominant (80.8%) religion. Majority of the patients were married (86.5%). Around one-fourth (26.0%) of the respondents were illiterate. More than half of the patients were unemployed (55.8%) and belonged to the lower socioeconomic class (64.5%).

Table 1. Socio-demographic profile of the patients (n = 400)

Socio-demographic factors	n (%)
Age (year)	
< 50	132 (33.0)
≥ 50	268 (67.0)
Sex	
Male	172 (43.0)
Female	228 (57.0)
Religion	
Hindu	323 (80.8)
Others	77 (19.2)
Marital status	
Married	346 (86.5)
Unmarried	54 (13.5)
Type of family	
Nuclear	244 (61.0)
Joint	156 (39.0)
Literacy	
Illiterate	104 (26.0)
Literate	296 (74.0)
Employment	
Employed	177 (44.2)
Unemployed	223 (55.8)
Socioeconomic class	
Higher class (I and II)	142 (35.5)
Lower class (III, IV, and V)	258 (64.5)
Locality	
Urban	304 (76.0)
Rural	96 (24.0)

Table 2 shows that only 12.0% (n = 48) were aware of the harmful health effects of tobacco addiction. The prevalence of tobacco addiction, in any form, in the study population was 11.0% (n = 44). Among the ever users of tobacco (n = 44),

the proportion of SLT use was found to be the highest (72.7%, n = 32), followed by dual consumption (20.5%, n = 9), and only smoking (6.8%, n = 3). In more than half of the tobacco consumers (54.5%, n = 24), the frequency of daily consumption was equal to or more than five times. A higher proportion of respondents (70.4%, n = 31) were addicted for more than 10 years and 84.1% (n = 37) never tried to quit while only 11.4% (n = 5) had successfully quit tobacco.

Table 2. Tobacco consumption knowledge and practice in the patients with hypertension (HTN)

Tobacco consumption knowledge	n (%)
Knowledge about harmful effects of tobacco consumption (n = 400)	
Yes	48 (12.0)
No	352 (88.0)
Tobacco consumption ever (n = 400)	
Yes	44 (11.0)
No	356 (89.0)
Types of addictions (n = 44)	
Only SLT	32 (72.7)
Only smoking	3 (6.8)
Dual consumption	9 (20.5)
Frequency of consumption per day (n = 44)	
< 5	20 (45.5)
≥ 5	24 (54.5)
Duration of tobacco addiction (year) (n = 44)	
≤ 10	13 (29.6)
> 10	31 (70.4)
Trying to quit (n = 44)	
Yes	7 (15.9)
No	37 (84.1)
Quitting tobacco (n = 44)	
Yes	5 (11.4)
No	39 (88.6)

SLT: Smokeless tobacco

Table 3 shows association of knowledge regarding harmful effects of tobacco use on health with various socio-demographic variables. It showed significant statistical association ($P < 0.0500$) with age and education. There was highly significant association ($P < 0.0010$) with sex, locality (urban or rural), literacy, employment, and SES.

Table 4 shows highly significant association ($P < 0.0010$) of knowledge of harmful effects of tobacco use with tobacco addiction. We did not find any significant statistical association ($P > 0.0500$) between tobacco addiction and the socio-demographic factors (Table 5).

Table 3. Association of socio-demographic variables with knowledge about effects of tobacco addiction on hypertension (HTN) (n = 400)

Socio-demographic factors	Knowledge about effects of tobacco addiction on HTN		P	OR (95% CI)
	Yes (n = 48) n (%)	No (n = 352) n (%)		
Age (year)				
< 50	25 (18.9)	107 (81.1)	0.0027*	2.48 (1.35-4.58)
≥ 50	23 (8.5)	245 (91.4)		
Sex				
Male	32 (18.8)	140 (82.3)	0.0004**	3.02 (1.60-5.73)
Female	16 (7.0)	212 (93.0)		
Locality				
Urban	44 (19.7)	179 (80.3)	< 0.0001**	10.63 (3.74-30.22)
Rural	4 (2.3)	173 (97.7)		
Education				
Illiterate	5 (4.8)	99 (95.2)	0.0087**	0.29 (0.11-0.77)
Literate	43 (14.5)	253 (85.5)		
Religion				
Hindu	37 (11.5)	286 (88.5)	0.4900†	0.78 (0.38-1.60)
Others	11 (14.2)	66 (85.7)		
Marital status				
Married	44 (12.7)	302 (87.3)	0.2700†	1.82 (0.63-5.29)
Unmarried	4 (7.4)	50 (92.6)		
Type of family				
Nuclear	29 (11.9)	215 (88.1)	0.9300†	0.97 (0.52-1.80)
Joint	19 (12.2)	137 (87.8)		
Employment				
Employed	34 (19.2)	143 (80.8)	< 0.0001**	3.55 (1.84-6.85)
Unemployed	14 (6.3)	209 (93.7)		
Socioeconomic class				
Higher class (I and II)	30 (21.1)	112 (78.9)	< 0.0001**	3.57 (1.91-6.67)
Lower class (III, IV, and V)	18 (6.9)	240 (93.1)		

*P < 0.05 (statistically significant), **P < 0.001 (highly statistically significant), †P > 0.05 (not statistically significant)

HTN: Hypertension; OR: Odds ratio; CI: Confidence interval

Discussion

In the present study, it was observed that only 12.0% of the subjects had awareness about the harmful health hazards of tobacco addiction. The overall prevalence of tobacco addiction (smoking/smokeless/dual form) was found to be 11.0%. This was much encouraging compared to the 29.3% and 18.2% found as prevalence in studies carried out in the same state, Gujarat.^{15,16} However, social desirability bias towards the interviewer might have hidden the actual

prevalence which might have been higher. Among the ever users of tobacco in our study, the proportion of SLT use was found to be the highest (72.7%), followed by dual consumption (20.5%), and only smoking (6.8%). Similarly, in her study, Pandor observed that tobacco chewing (SLT) was the most popular form of addiction followed by smoking.¹⁵ In contrast to our study, in another study done in rural Gujarat, it was found that 77.8% smoked, 51.7% chewed tobacco in several forms, while 27% used tobacco in both forms.¹⁶

Table 4. Association of knowledge about effects of tobacco addiction with its consumption (n = 400)

Ever user of tobacco	Awareness about effects of tobacco addiction		P	OR (95% CI)
	Yes [n (%)]	No [n (%)]		
Yes	14 (29.2)	30 (8.5)	< 0.0001*	4.42 (2.14-9.14)
No	34 (70.8)	322 (91.5)		

*P < 0.001 (highly statistically significant)

OR: Odds ratio; CI: Confidence interval

Table 5. Association of tobacco addiction with various socio-demographic factors (n = 400)

Socio-demographic factors	Ever user of tobacco		P	OR (95% CI)
	Yes (n = 44) n (%)	No (n = 356) n (%)		
Age (year)				
< 50	13 (9.8)	119 (90.2)	0.6400*	0.84 (0.42-1.66)
≥ 50	31 (11.6)	237 (88.4)		
Sex				
Male	22 (12.8)	150 (87.2)	0.3200*	1.37 (0.73-2.57)
Female	22 (9.6)	206 (90.4)		
Locality				
Urban	36 (2.6)	274 (88.4)	0.4700*	1.35 (0.60-3.01)
Rural	8 (8.9)	82 (91.1)		
Education				
Illiterate	14 (13.5)	90 (86.5)	0.3500*	1.38 (0.70-2.72)
Literate	30 (10.1)	266 (89.9)		
Religion				
Hindu	33 (10.2)	290 (89.8)	0.3100*	0.68 (0.33-1.42)
Others	11 (14.3)	66 (85.7)		
Marital status				
Married	38 (10.9)	308 (89.1)	0.9800*	0.99 (0.40-2.46)
Unmarried	6 (11.1)	48 (88.9)		
Type of family				
Nuclear	24 (9.8)	220 (90.2)	0.3500*	0.74 (0.40-1.39)
Joint	20 (12.8)	136 (87.2)		
Employment				
Employed	22 (12.8)	150 (87.2)	0.3200*	1.37 (0.73-2.57)
Unemployed	22 (9.6)	206 (90.4)		
Socioeconomic class				
Higher class (I and II)	15 (10.6)	127 (89.4)	0.8700*	0.93 (0.48-1.80)
Lower class (III, IV, and V)	29 (11.2)	229 (88.8)		

*P > 0.05 (not statistically significant)

OR: Odds ratio; CI: Confidence interval

We observed that in the majority of the tobacco consumers (54.5%), the frequency of consumption was ≥ 5 times/day. In the study done by Kahar et al., frequency of tobacco consumption was reported to be between 8 and 10 times a day,¹⁶ while Bhanushali, in his study, observed that 33.3% of the patients smoked 1-20 times a day while the rest smoked even more frequently, which was higher than the present study.¹⁷ Similar to Sochaliya's study,¹⁸ where 69.9% of respondents were using tobacco for > 10 years, in our study, 70.4% were addicted for > 10 years. It was observed that only 15.9% had ever tried to quit tobacco while a meagre percent of 11.4% had successfully quit. This was poorer compared to the observation of Srivastava et al., where 42.0% of the ever users of tobacco made an attempt to quit tobacco and of these, 42.0% were successful.¹⁹

The knowledge of harmful effects of tobacco

addiction on health showed significant statistical association ($P < 0.0500$) with age and education, and highly significant association ($P < 0.001$) with sex, locality (urban or rural), literacy, employment, and SES. It was seen that those who aged < 50 years, men, literates, employed, and those belonging to higher SES and having urban residence had better knowledge of the health hazards of tobacco. Similarly, another study found that those with male sex, younger age, and literacy showed higher levels of knowledge about tobacco hazards and this was found to have significant statistical association.¹⁶ Overall, non-users had higher awareness of the health hazards of tobacco use compared to tobacco users. This was in agreement with the findings of Kahar et al.¹⁶ Though, we did not find any significant statistical association of tobacco addiction with the socio-demographic factors ($P > 0.050$), other studies observed significant association.^{16,20}

It was found that more than half of the patients (57.0%) were women. Female predominance was also noted in studies conducted by Osman et al.²¹ in Eastern Sudan and Jesus et al.²² in Sao Paulo. More than half of the patients, in our study, were in their fifties or above (67.0%) and married (86.5%). Similar to our study, the majority of the patients in the study done by Jesus et al. were in fifties and also most were married.

Conclusion

The results of this study provided valuable insight to the prevalence and pattern of tobacco addiction in the patients with HTN in the Indian society and the findings can help in developing a non-pharmacological treatment protocol based on lifestyle modification with tobacco cessation as its

mainstay. Since the knowledge of the hazards of tobacco addiction was found to have a significant association with tobacco use, more attention should be given to the cohorts of female, older age group, unemployed, rural, illiterate, and lower SES patients in whom knowledge was found to be lower, while disbursing non-communicable disease (NCD) counseling.

Conflict of Interests

The Authors have no conflict of interest.

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مطالعه‌ای در مورد الگوی خودگزارش‌دهی اعتیاد به تنباکو در بیماران مبتلا به پرفشاری خون در گجرات، هندوستان

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مقاله پژوهشی

چکیده

مقدمه: پرفشاری خون و اعتیاد به تنباکو، هر دو تهدیدی برای محیط، سلامتی و وضعیت اجتماعی-اقتصادی افراد می‌باشد. اختلال استفاده از تنباکو در بیماران مبتلا به پرفشاری خون، پیشرفت بیماری را سرعت می‌بخشد و موجب بروز عوارض زود هنگام می‌شود. هدف از انجام پژوهش حاضر، بررسی آگاهی و شیوه اعتیاد به تنباکو در بیماران مبتلا به پرفشاری خون و یافتن رابطه بین آگاهی و شیوه اعتیاد به تنباکو بود.

روش‌ها: این مطالعه مقطعی-توصیفی در منطقه جام نگر گجرات غربی هند به مدت یک سال انجام شد. از میان ۴۰۰ نمونه، ۵۰ درصد افراد از پنج مرکز منتخب سلامت اجتماعی به روش نمونه‌گیری تصادفی و بقیه از کلینیک‌های بیماری‌های غیر واگیر در بیمارستان مراقبت‌های عالی آن منطقه جمع‌آوری شدند.

یافته‌ها: بیشتر بیماران در رده سنی ۵۰ سال و بالاتر (۶۷ درصد) قرار داشتند. ۵۷ درصد آن‌ها مؤنث و ۸۶/۵ درصد متأهل بودند. تنها ۱۲ درصد در مورد خطرات اعتیاد به تنباکو آگاهی داشتند و شیوع اعتیاد به تنباکو در آنان ۱۱ درصد گزارش گردید. استفاده از تنباکوی بدون دود بیشترین میزان را به خود اختصاص داد (۷۲/۷ درصد) و به دنبال آن، مصرف دوگانه (تنباکوی بدون دود و دود کردن) قرار داشت (۲۰/۵ درصد). میزان مصرف در ۵۴/۵ درصد بیماران بیشتر از ۵ بار در روز بود. ۷۰/۴ درصد به مدت بیشتر از ده سال اعتیاد داشتند و تنها ۱۵/۹ درصد تاکنون برای ترک تنباکو تلاش کرده بودند؛ در حالی که فقط ۱۱/۴ درصد موفق به ترک آن شده بودند. همچنین، مشخص شد افراد بیشتر از ۵۰ سال، مردان، باسوادان، شاغلان و آن‌هایی که به طبقه اجتماعی بالاتر تعلق داشتند و در شهرها ساکن بودند، آگاهی بهتری در مورد خطرات اعتیاد برای سلامتی داشتند که ارتباط معنی‌داری مشاهده گردید.

نتیجه‌گیری: نتایج به دست آمده اطلاعات ارزشمندی را در مورد اعتیاد به تنباکو در بیماران مبتلا به پرفشاری خون ارائه نمود که بر اساس آن می‌توان درمان غیر دارویی فشار خون را انجام داد.

واژگان کلیدی: فشار خون بالا، استعمال دخانیات، تنباکو، بدون دود، بیماری قلبی-عروقی

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