



## Prevalence of Adverse Health Effects of Tobacco Addiction in Different Types of Prakriti – An Observational Study

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**Abstract:** According to the National Institute on Drug Abuse, tobacco is one of the most widely used addictive items in the United States (NIDA). Addiction is a long-term illness marked by obsessive drug seeking and usage and long-term chemical and molecular alterations in the brain. Tobacco smoking is linked to 5 million fatalities worldwide, making it one of the major causes of mortality. Comprehensive tobacco control programs can significantly lower the frequency of tobacco use. The study was a cross-sectional study. Approval was taken from the institutional ethical committee. Personal interviews were conducted at Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (H), Wardha district. All the subjects were personally interviewed based on the questionnaire. The survey elicited 209 replies, and based on the findings, the following observations were made. Individuals who were addicted to tobacco chewing in the Wardha district were included in the study. One hundred percent of participants completed the survey. The evaluation used a question-and-answer format, a typical Prakriti assessment, and tobacco addiction-related questions. The study gathered 209 replies from tobacco-dependent residents in the Wardha district, who were selected based on their comments and observations. Tobacco chewing percentage was more found in males (21%) than females (2.8%). Twenty-five percent were primarily *Vata Prakriti*, fifty-nine percent were *Pitta Prakriti*, and eighteen percent were *Kapha Prakriti*. Compared to *Pitta* and *Kapha Prakriti* people, *Vata*-dominant *Prakriti* people are more likely to experience the negative effects of tobacco addiction.

**Keywords:** Tobacco Addiction, Prakriti Assessment, Smoking, Health, Lifestyle

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## I. INTRODUCTION

*Prakriti* (Ayurvedic constitution) is a total of the morphological, physiological, and psychological basic traits. It is manifested in the intrauterine life according to the *Beeja* (genetic) and *Dosha* (body humor viz. *Vata*, *Pitta*, and *Kapha*) influence and is said to be unchangeable throughout life<sup>1-3</sup>. Ayurveda emphasizes personalized therapy under the "*Purusham Purusham Vikshya*" (an individualized approach) principle. Genetic and intrauterine influences make every individual a distinct entity. Hence, a person has physiological and pathological variations accordingly. When exposed to identical stimuli, each person's *Prakriti* affects their response differently. The variability in resistance to diseases, the different natural course of the disease, and diverse therapeutic reactions need to be explored from the point of view of *Prakriti*<sup>4</sup>. Tobacco is one of the most widely addictive substances.

Nearly two-thirds of the world's smokers live in only ten nations, with more than 40% living in just two, namely China and India. India accounts for around 10% of the world's total smokers<sup>5</sup>. Tobacco contains the most addictive substance, nicotine. When absorbed into the bloodstream or breathed through cigarette smoke, it creates an adrenaline surge. Nicotine also causes a rise in dopamine levels<sup>6</sup>. Tobacco use may be divided into two categories: smokeless tobacco and smoking tobacco. Without burning or combustion, smokeless tobacco is generally taken orally or nasally. Snuff and chewing tobacco are the two most common types of smokeless tobacco. Tobacco smoking is inhaling the smoke produced by burning dry or cured tobacco leaves. Tobacco combustion releases biochemically active compounds such as nicotine, TSNA, and alkaloids<sup>7,8</sup>. Tobacco smoking is linked to several health issues, including heart disease, lung cancer, diabetes, infertility, emphysema, chronic bronchitis, stroke, osteoporosis, asthma, and respiratory infections. Tobacco contains nicotine, a chemical that may lead to addiction, so many individuals find it difficult to quit smoking. Many other potentially harmful chemicals can be found in tobacco or produced when smoked. Tobacco may be consumed in three ways: smoked, chewed, or sniffed. Some people consume loose smoking with a pipe or hookah (water pipe). Chewed tobacco products include chewing tobacco, snuff, dip, and snus; snuff can also be sniffed. When a person eats a cigarette product, nicotine enters the bloodstream rapidly. As nicotine enters the bloodstream, it stimulates the adrenal glands to generate the hormone epinephrine (adrenaline). Epinephrine is a neurotransmitter that stimulates the central nervous system, causing blood pressure, breathing, and heart rate to increase. Nicotine, like cocaine and heroin, activates the brain's reward circuits and increases the chemical messenger dopamine levels, reinforcing rewarding behaviors<sup>9-12</sup>. According to research, other chemicals in cigarette smoke, such as acetaldehyde, may increase nicotine's effects on the brain. Numerous studies were conducted regarding tobacco chewing, but its analysis and side effects according to various types of *Prakriti* were not found in the literature search. So, there was necessary to conduct an observational study on tobacco chewers concerning different types of *Prakriti*. The study was conducted to evaluate the adverse effects of Tobacco Addiction in *Prakriti* and to create awareness in the population of Wardha city regarding complications of Tobacco addiction and its relation with *Prakriti*.

## 2. METHODS

### 2.1 Source of Data

Subjects were collected from people who were addicted to tobacco chewing.

### 2.2 Type of Study

Observational study

### 2.3 Study design

A cross-sectional study<sup>13</sup> was conducted among the people of the Wardha district. The study was conducted in a block of the Wardha district. The block was selected randomly by the chit method. A structured interview schedule was administered to the participants. Data were collected by conducting a house-to-house survey in the Wardha district. When the desired sample size was unmet, the researcher interviewed the people visiting the O.P.D. of MGAC.

### 2.4 Sampling procedure

Purposive sampling. The subjects who fulfilled the inclusion and exclusion criteria and complied with the informed consent (I.C.) were selected for the study.

### 2.5 Data collection tools and process

Two hundred nine people who are tobacco addicted were selected for this study. A case proforma was created, which included all of the study's pertinent information. Both groups' data was recorded and tabulated, and data were analyzed with descriptive statistical procedures.

### 2.6 Inclusion criteria

People included in the study who had an addiction to tobacco resided in a village in the Wardha district and were willing to participate included in the study.

### 2.7 Exclusion criteria

The patients who were not willing to participate were excluded from the study.

### 2.8 Assessment Criteria

*Prakriti* assessment and personal interview questionnaire were used for assessment criteria.

### 2.9 Consent

Before the interview, the informed consent of the participants was taken.

### 2.10 Ethical Approval

The cross-sectional survey was conducted for six months, and approval has been taken from the Institutional Ethical Committee, Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (H). Letter ref. Reference No. MGACHRC/IEC/June -2021/227

## 3. OBSERVATION AND RESULT

A total of 209 responses were recorded. Based on the feedback received following observations made, as per the survey criteria, the people who are tobacco addicted from the Wardha district were included. Out of 209, 52 (25%) were of *Vata* predominance *Prakriti*, 119 (57%) belonged to *Pitta Prakriti*, and 38 (18%) were of *Kapha Prakriti* (Table 1).

**Table 1: Questionnaire & recorded answers regarding tobacco chewing**

I		Gender		Male	Female
2	<b>Are you a tobacco addict?</b>	Number	%	Number	%
	Yes	44	21	6	3
	No	90	43	69	33
3	<b>Which type of Tobacco Addict?</b>	Number	%	Number	%
	Snuff (inhale by the nose)	3	7	0	0
	Chewing tobacco	39	75	0	0
	Manufacture cigarette	32	62	4	8
	Cigar	18	35	2	4
	Bidi	2	3	0	0
	Water pipe	1	1	0	0
	Pipe	9	17	0	0
	Stick	1	1	0	0
	None	0	0	0	0
	No any	0	0	0	0
	No addicted	0	0	0	0
4	<b>Currently tobacco smoking status?</b>	Number	%	Number	%
	Yes	44	85	6	12
	No	0	0	0	0
5	<b>History of Tobacco smoking status</b>	Number	%	Number	%
	Yes	20	38	0	0
	No	0	0	0	0
6	<b>The number of Tobacco smoking products used per day?</b>	Number	%	Number	%
	One	12	23	0	0
	Two	41	79	0	0
	Three	28	53	0	0
	Four	8	16	0	0
	More than five	11	22	0	0
7	<b>Tried to quit in the last 12 months?</b>	Number	%	Number	%
	Yes	32	62	6	12
	No	12	23	0	0
8	<b>Options use for use quit tobacco</b>	Number	%	Number	%
	Nicotine replacement therapy	13	25	0	0
	Avoid triggers	10	19	0	0
	Delay	10	19	0	0
	Physical activity	32	62	0	0
	Practice relaxation techniques	11	22	0	0
	join an online stop-smoking program	2	4	0	0
	Do not try to quit tobacco	12	23	0	0
9	<b>Are you having any medical problems?</b>	Number	%	Number	%
	Anxiety and irritability	32	62	3	6
	Bronchitis	12	23	0	0
	Persistent cough	15	29	0	0
	Any type of heart disease	1	2	0	0
	Infertility	0	0	0	0
	Wrinkle skin	9	17	6	12
	Poor vision	3	6	0	0
	A dull sense of smell and taste	2	4	0	0
	Lung cancer	0	0	0	0
	T.B.	0	0	0	0
	C.O.P.D.	0	0	0	0
	Yellow fever	0	0	0	0
	Loss of appetite	23	44	4	8
	No, any problem	0	0	0	0
10	<b>Didn't you get success in quitting tobacco?</b>	Number	%	Number	%
	Yes	44	85	6	12
	No	0	0	0	0
11	<b>Do you want to quit tobacco?</b>	Number	%	Number	%
	Yes	32	62	6	12
	No	12	23	0	0

**Table 2: Medical problems in different types of Prakriti**

Prakriti	Number of patients		
	Vata	Pitta	Kapha
Anxiety and irritability	19	9	7
Bronchitis	8	2	2
Persistent cough	6	5	4
Any type of heart disease	1	0	0
Wrinkle skin	9	4	2
Poor vision	1	1	1
A dull sense of smell and taste	1	1	0
Loss of appetite	14	7	6

Table showing the number of participants having health issues due to tobacco chewing. It was observed that *Vata* predominant *Prakriti* participants suffered more from various medical health issues than *Pitta* & *Kapha* *Prakriti* participants.

#### 4. DISCUSSION

A total of 209 responses were recorded. Based on the findings, the following observations were made according to the survey criteria: people addicted to tobacco chewing in the Wardha district were included in the study. 100% of participants were involved in the survey. The evaluation was done in a question-and-answer manner, with *Prakriti* assessment<sup>14-16</sup> done in the traditional *Prakriti* assessment and tobacco addiction-related questions. According to statistics, those males suffering from the side effects /complication of tobacco chewing addiction have *Vataj Prakriti* in nature<sup>17</sup>. The data collection took place from May to October 2021. The survey results were statistically evaluated and represented using statistical techniques, and the feedback received from the survey was split down into behavioral and psychosocial variables. According to Chinwong D et al., males are more likely to be daily smokers than females, and males also smoke more each day on average; the same findings are observed in the present study<sup>18</sup>. According to the results, persons who belong to *Vata* dominant *Prakriti* are more likely to suffer from side effects of tobacco addiction than *Pitta* & *Kapha* *Prakriti* people (Table 2). The proportion of people that chew tobacco and have health problems. It was shown that people with *Vata*-predominant *Prakriti* experienced more medical issues than participants with *Pitta*- and *Kapha*-dominant *Prakriti*. Using tablets, chewing tobacco/gum, swallowing air with saliva, or gulping big amounts of food/liquid might also cause a great belch. It's difficult to assess their intensities if they're being treated with antacids, carbonated drinks, or beer to expel excess air, as they provide a false impedance reading<sup>19</sup>. On the other hand, Vasantrao K et al. stated that tobacco reduces *Kapha* and *Vata* while increasing *Pitta*; it relieves *Shwas*, *Kas*, toothache, and *Vata* in the abdomen (*Koshta*). It promotes *Vata* movement downward and cleanses the urinary bladder. It has antihelminthic and antipruritic properties. On the other hand, it causes an increase in *Vaman*, *Bhram*, *Mada*, *Pitta*, and eye disorders such as blindness<sup>20</sup>. During the interview, participants opined that they were chewing tobacco or smoking as their friends were doing so; Subba SH et al. supported the findings as students chewed tobacco for reasons such as 'just like it,' because their friends chewed, relaxation effects, boredom, and to appear more mature. Few

other studies have looked into the reasons for chewing tobacco and discovered similar reasons, as well as craving. Craving was not a major factor in the current study, but it was one of the major factors in a survey conducted among baseball players in the United States<sup>21</sup>. However, Rasayana like Ashwagandha, Shatavari, Bala, and Ginseng can reduce tobacco's negative effects according to Ayurveda. Yoga can also reduce stress and boost strength without smoke<sup>22</sup>. Complementary and alternative medicine hopes to cure cancer without drug-induced side effects. Ayurvedic therapy aims to discover the root cause of an ailment<sup>23</sup>. Ayurvedic medicine offers a distinct viewpoint on the biological diagnosis of cancer that emphasizes re-establishing wholeness, employs natural treatments, pays attention to mental health, and stresses prevention measures<sup>24</sup>. Ayurveda does not use aggressive bodily treatments for cancer, which is the primary distinction between Western and Ayurvedic treatments. Instead, Ayurveda encourages the body's natural ability to cure itself<sup>25</sup>. The advantages of cows for agriculture, the environment, health, economy, and spiritual development have all been extensively discussed and are very effective in reducing the hazardous effect of tobacco<sup>26-29</sup>.

#### 5. CONCLUSION

The study's findings indicate that men with complications or negative effects from a tobacco chewing addiction are *Vataj Prakriti* by nature. In addition, people with *Vata*-dominant *Prakriti* are more likely than *Pitta* and *Kapha*-dominant *Prakriti* individuals to experience the negative impacts of nicotine addiction.

#### 6. AUTHOR CONTRIBUTION STATEMENT

Dr. Gaurav Sawarkar conceptualized and designed the study, Dr. Rajat collected the data, and Dr. Punam Sawarkar analyzed the data. Finally, Dr. Gaurav Sawarkar wrote the final manuscript.

#### 7. ACKNOWLEDGEMENT

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#### 8. CONFLICT OF INTEREST

Conflict of interest declared none.

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