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Chewing habit leads to disequilibrium in body constitution and affects mental health

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Abstract

Incidence of addiction related diseases have emerged as major health concern worldwide. Various types of chewing habit is predominant worldwide. These habits may have direct correlation with prakrati. The present study is carried out to investigate the mental health status and prakrati in correlation with chewers along with their chewing habits.After ethical clearance-two groups namely chewers (n=100) and non-chewers (n=100) randomly considered. After taking consent, dosha evaluation was done using standardise questionnaire (TNMC prakriti). DASS-42 of Lovibond and Lovibond was used to analyze prevalence of (DAS) anxiety and stress and depression, in both the populations. Prevalence of (DAS) anxiety and stress and depression in non-chewers was less as compared to that chewers. On evaluating their prakrati it was observed that 61% of non-chewers fall into a balanced dosha while it was and only 20% in chewers. Chewers (58%) showed vaat and pittprakrati, 14% showed pitt and kaaf type of prakrati and only 8% showed vaat and kaafprakrati. There was a significant difference (X^2; p value: 31.09; 0.0001) found between both the groups. Our results showed that prakrati and mental status along with addiction is directly correlated. The disequilibrium doshas could be one of the reason for developing mental health problems and might have lead to addiction and rehab centres should consider prakrati aspect in their treatment.

Keywords: Prakrati, mental health, chewing habit, mava, tobacco, arecanut, panmasala.

Introduction

It is found that almost 3 of 5 cancer deaths in India are associated with tobacco related diseases[1]. Now a days various forms of tobacco are available in market and its consumption is increasing. This habit starts with mainly two reasons, primarily it is influenced of peer and secondly as self help to fight against stress. This brings imbalance in our body constitution. The core concept in Ayurveda is each and every person exhibits a specific prakruti (mind-body constitution) comprised of energetic life forces referred to as doshas[2]. It creates a blueprint for our mental and physical traits. Each dosha represents distinct bioenergetic principles and physiological processes: vata (principle of movement), pitta (principle of transformation), and kapha (principle of structure)[3]. Each person's health is influenced by their innate proportion of these three doshas and their current state of balance or vikruti (disequilibrium)[4]. The imbalance or vikruti is expression of one or two doshas dominantly. This imbalance may be due to the life style and food habits[5]. The major aim of this study was to evaluate and find the internal correlation between the chewing habit of the individual, mental status and their body constitution.

Materials and methods

The present study was carried out on 100 males (age group 35-45 years) volunteers. Out of this 50 were chewers chewing 6-7 packets per day, keeping in mouth for 16-20min for 15 to 25 years of habit. For this study human ethical clearance was obtained from Gujarat University Institutional Ethical Clearance (GUJ-IEC-09-2015). Their dosha evaluation was done using standardise questioner (TNMC prakriti 2004). DASS-42 (Depression Anxiety Stress Scale) of Lovibond and Lovibond[6] was used to analyze depression, anxiety and stress in both the population.

Statistical analysis was carried out using graph pad prism 8.0, Chi square and correlation analysis was carried out.

Results and discussion

The results showed that incidence of depression, anxiety and stress in non-chewers was 12%, 18% and 8% respectively whereas in that of chewers It was 50%, 44% and 60% respectively which was significantly higher than that of non-chewers (Tables-1-3).

In addition chewers were classified according to their chewing habit such as arecanut, tobacco, panmasala and mava and their analysis was done. It was found that stress level was normal in 92% of non-chewers, whereas in chewers it was normal in only 40% followed by mild (25%), moderate (25%) and 10% were severe. The level of significance was $p<0.05$. Further evaluation based on type of chewing material showed that severe stress was found in mava and panmasala chewers which was 21% and 16% respectively.

Table-2 shows the level of anxiety in chewers and non-chewers. It was observed that 82% of non-chewers were normal, 12% had mild anxiety, 6% had moderate and none had severe anxiety. However in chewers it was found that 4% suffered from severe anxiety 20% had mild stress.

On habit based analysis in chewers it showed that 14% of mava chewers had severe anxiety and none in other three groups. Moderate level of anxiety was observed in tobacco chewers which was 9.5%, 25% inpanmasala chewers and highest (35.71%) in mava chewers (r=0.970 between both the groups).

Level of depression is shown in Table-3. 8% of non-chewers had mild depression, 4% had moderate depression and none was in severe catagory. Depression was comparatively higher in chewers as compared to non-chewers. 20 and 26% chewers were in mild and moderate level while 4% were in severe category which is significantly higher. On Chi square analysis it shows that level of significance between chewers and non-chewers was $p<0.0005$ and correlation was $r=0.897$.

In mava chewers, 14.28% had expressed severe depression, whereas 42.85% of mava chewers had moderate depression which was highest among all the type of chewers.

Table-1: Prevalence of stress level in chewers and non-chewers.

Group	Normal (0-14)	Mild (15-18)	Moderate (19-25)	Severe 26	X^2 value; p value	r
Non Chewers	(92) 11.35±0.35	(4) 17.50±0.5	(4) 21.00±1.00	0	30.47; 0.0001	0.824
Chewers	(40) 9.35±0.81	(25) 16.55±0.44	(25) 20.33±0.04	(10) 26.00±0.00		
Chewers type						
Arecanut	(70) 10.57±0.8	(20) 16.5±1.5	(10) 21± 0.00	0	-	-
Tobacco	(28) 9.33±1.68	(57) 16.83±0.47	(15) 21.00±1.00	0		
Mava	(28.57) 10.33±1.66	(7.14) 15.00±0.00	(43) 20.20±0.58	(22) 26.001.73		
Panmasala	(41) 13.5±0.28	0	(42) 21.75±0.25	(17) 26.00±0.00		

Values are mean±S.E.M of DASS, Values are parenthesis indicate percent in the group.

Table-2: Prevalence of anxiety level in chewers and non-chewers.

Group	Normal (0-7)	Mild (8-9)	Moderate (10-14)	Severe (15-19)	X^2 value; p-value	r
Non Chewers	(82) 5.65±0.13	(12) 8.5±0.22	(6) 11.00±0.57	0	107.40; 0.00001	0.970
Chewers	(56) 5.92±0.24	(20) 8.60±0.16	(20) 13.42±0.20	(4) 17.00±1.00		
Chewers type						
Arecanut	(80) 5.62±1.06	(20) 8.50±0.70	0	0	107.40; 0.00001	-
Tobacco	(50) 5.85±2.21	(35.71) 8.40±3.75	(14.28) 13.5±9.5	0		
Mava	(35) 6.00±0.77	(14) 9.00±0.00	(36) 13.00±0.00	(15) 17.00±1.00		
Panmasala	(66) 6.25±0.36	(9) 9.00±0.00	(25) 13.33±0.66	0		

Values are mean±S.E.M of DASS, Values are parenthesis indicate percent in the group.

On evaluating their prakrati (Table-4) it was observed that 62% of non-chewers fall in to a balanced dosha while only 20% in the chewers. 58% of the chewers showed vaat and pittprakrati, 14% showed pitt and kaaf type of prakrati and only 8% showed vaat and kaafprakrati. There was a significant difference (X^2; p value:31.09; 0.0001) found between both the groups. It was observed that 92.85% of mava chewers has exhibited vaat and pittprakratri which was highest followed by tobacco chewers which was 64.28%. Pitt and kaphprartati was observed in 7.4% in mava chewers, 8.33% in panmasala chewers, 7.14% in tobacco chewers and 10% in arecanut chewers. Vaat and kaph was not observed in mava chewers but was seen in 25% of panmasala chewers followed by tobacco chewers which was 21%, 20% were in arecanut chewers. Balanced vaat pit kaph was observed highest in arecanut chewers which was 40%, 33.33% in panmasala chewers and 14.28% in tobacco chewers.

Table-3: Prevalence of depression level of in both chewers and non-chewers.

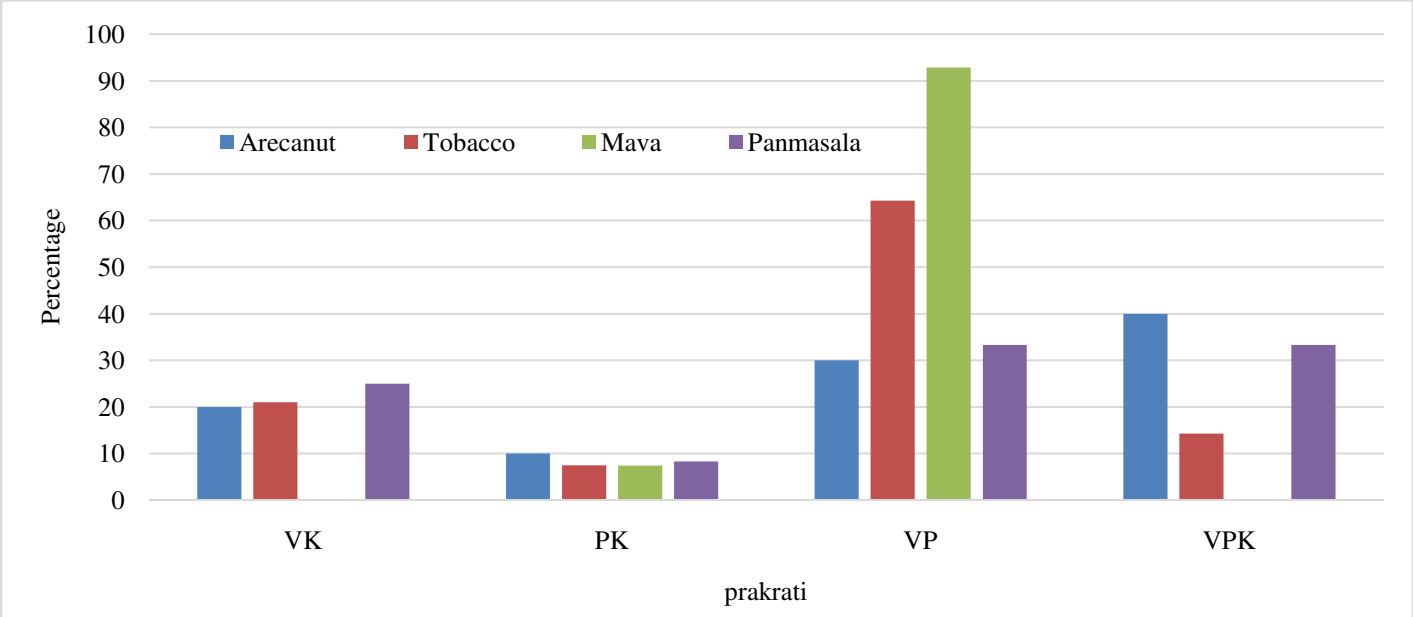
Group	Normal (0-9)	Mild (10-12)	Moderate (14-20)	Severe (21-27)	X^2value; p value	r
Non Chewers	(88) 5.07±0.38	(8) 10.00±0.00	(4) 15.00±1.15	0	33.53; 0.00001	0.897
Chewers	(50) 7.20±0.33	(20) 11.84±0.27	(26) 17.00±0.48	(4) 24.00±3.00		
Chewers type						
Arecanut	(70) 5.50±1.29	(20) 8.33±0.57	(10) 14.33±4.0	0	82.22; 0.00001	-
Tobacco	(50) 7.00±2.85	(28) 11.40±5.09	(22) 17.33±10.00	0		
Mava	(35) 6.8±0.2	(7) 12.33±0.66	(43) 15.5±0.5	(15) 24.00±3.00		
Panmasala	(66.66) 8.33±0.33	(25) 12.00±0.00	(25) 18.00±0.57	0		

Values are mean±S.E.M of DASS. Values are parenthesis indicate percent in the group.

Table-4: Occurrence of vaatpittkaph in both the groups.

Groups		VK	PK	VP	VPK	X^2 value; p value
Non Chewers		8%	20%	10%	62%	61.4112; 0.00001
Chewers	Total	14%	8%	58%	20%	
	Chewing Habit					
	Arecanut	20%	10%	30%	40%	111.512; 0.00001
	Tobacco	21%	7.14%	64.28%	14.28%	
	Mava	-	7.40%	92.85%	-	
	Pan masala	25%	8.33%	33.33%	33.33%	

Values are indicating percent in the group.



V=vaat, P=pitt, K=Kapha,

Figure-1: Prakrati prevaling in different chewing habits.

Discussion: Tobacco related chewing habit has increased since last decade. There are two major reasons that leads to this habit primarily it is the influence of peer and second reason is the dilemma of that chewing tobacco or arecanut related products gives relief from stress. It has been assumed that the major factor leading to the onset of tobacco related products addiction is the rewarding effect of nicotine[7].

This study shows that the incidence of (DAS) depression, anxiety and stress in chewers was was significantly higher than that of non-chewers. Out of all the chewing habit mava chewers were found to be more affected followed by the panmasala chewers. One of the reason could be mava is a combination of tobacco, arecanut and lime which show a synergistic effect. This lime mixed tobacco or Gutakha effects buccal mucosa along with intestinal mucosa causing irritation. Because of this loss of normal mucosa, many gastrointestinal problems starts like - GI upset, indigestion, loss of appetite etc. This health issue affects the normal state of mind. Many studies have demonstrated that the rate of smoking and nicotine addiction is more in individuals suffering from anxiety disorders[8]. Nicotine in the cigarette, tobacco and other similar products cause addiction. After every ½ to 4 hours, body demands another cigarette as soon as nicotine level drops in the body. When someone try to withdraw it, causes irritability restlessness, and craving. Many people experience nausea, intestinal cramping, headache, tingling in the hands and feet, sleeplessness, coughing, sore throat, anxiety, depression, and sweating. Tobacco use with shared determinants and high co-occurrence with other forms of mental illness[9] as per world health organization[10]. Mental illness is also a precursor to or a consequences of non-communicable diseases (NCDs). Holly and Lee[11] reported that 47% of psychiatric outpatients with an anxiety disorder also smoked.

On analysis of dosha it was observed that only 20% of the chewers had balanced dosha. 58% of the chewers showed vaat and pittprakrati, 14% showed pitt and kaaf type of prakrati and only 8% showed vaat and kaafprakrati. There was a significant difference ($p<0.0001$) between both the groups. The equilibrium of doshas is called health and imbalance (Vikriti) is called disease[12]. Vata has similar characteristics which can be compared with psycosomatic functions. Therefore individuals with vata prakriti is considered to be more prone to stress related health issues[5,13], discovered that inflammatory genes were more associated with vata subgroup of patients, people with pitta prakriti develop cancer of soft tissues according to Ayurveda[14]. These inflammatory markers were also found to be higher in Kapha and pitt body type[15].

Ayurveda views the mind and body as two aspects of one unity[16-18] but people are unaware of tobacco use share mental illness, when the aggravated doshas in the brain are not at a sufficient level to trigger an endogenous depressive situation, they still predispose the person to develop depression in the face major trauma.

Conclusion

This study showed that prakrati and mental status along with addiction is directly correlated. The disequilibrium dosha could be one of the reasons for developing mental health problems and might have lead to addiction. Individuals further should be treated considering their prakrati. The rehab/ de-addiction centres should consider these two aspects in their treatments for better and quick results. This study concludes that the unhealthy chewing habit leads to disturbance in the body constitution and leads to mental illness.

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