



Awareness about graying of hair in early ages especially in smokers and tobacco user.

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Abstract

Objective: Premature graying is very common nowadays. Most people who deal with it having a tension that how to overcome their continuous growing of gray hair. There are many risk factor and causes of gray hair in early age but the most common factor are smoking and tobacco users by any means of intake. We observe the prevalence of gray hair in smokers and tobacco users and non-smokers and non-tobacco users by a survey. We also notice that the other problems associated with smokers and tobacco user. We also observe the other causes of pre mature graying of hair. Another thing which we perceive is the percentage of premature graying of hair in male and female. **Method:** For this survey we made a questionnaire in which we ask people either who having premature gray hair are a smoker or tobacco user or which of the problems they are facing. factor analysis is conducted to find the most responsible factors for the graying of hairs. **Result:** total of 317 people both smokers and non smokers, tobacco users and non smokers are observed with grey hairs and out of which Reason of silver hair of 111 individuals are smoking while of 56 individuals are tobacco use. 50 individuals are the individuals who smoke furthermore utilize tobacco by various means other than smoking and 100 of them are non tobacco users of any source weather smoking or other tobacco usage.

Keywords: premature, prevalence, perceive, smoker, no-smoker, tobacco.

Introduction

Premature graying of hair is very common nowadays in the city of Karachi and there is no one is able to get rid of it.^[1] The hair turns gray when a color producing cell called melanin production of coloring pigment which is required for the color of hair. It is a natural process but in old age when the melanin producing capability in human being is decrease but not in early age.^[2] If the level of hydrogen peroxide increases in the body then it also causes early graying of hair.^[1] A lot of work is done related to graying of hair. There is a study, held in Delhi India, which shows that the gray hair and canities in teenage can cause low self-esteem. Even many people face difficulty in adjustment socially.^[3] Another study which held in India shows that the smokers have a greater risk of

graying of hair in teenage than nonsmokers. The faces of smokers have wrinkles. They even have a greater risk of myocardial infarction. They look older than their age.^[4] A study also shows that the deficiency of bulb melanin content and melanocyte population can cause graying of hair.^[5] There is another study which told us that Gerontobiology of the hair follicle pigmentary unit is also a reason of graying of hair.^[6] Those people who have gray hair in his or her early age have a greater risk of osteopenia, endocrine disorder, vitiligo and early signs of aging.^[7] A study shows that the premature graying of hair is associated with cardiovascular disease.^[8] Another study shows that progeroid syndrome, vitiligo, hypothyroidism familial inheritance and some pathological condition

are also some of the risk factors of premature graying of hair.^[9] Another study shows that bone mineral density especially in Graves's disease is weakly associated with the graying of hair.^[10]

Symptoms:

The other symptoms of premature graying of hair include thinning of hair^[11], lose of hair color before the age of 35^[11], brittle hair^[11], headache (in some cases).^[11]

Causes:

The main cause is still unknown.^[1] There are many risk factors and causes of graying of hair in early age which include hereditary^[1], vitamin deficiency especially B₁₂, E and C^[1], minerals specially zinc and copper deficiency^[1], smoking^[1], emotional shock^[12], excessive intake of tea or coffee^[12], hypothyroidism.^[13], stress^[14], faulty diet^[14], excessive use of electric dryer and hair iron^[14], Werner syndrome^[15], Alopecia^[15], hormonal imbalance^[16], pernicious anemia^[16], autoimmune disorder^[17], UV light^[17], harsh chemical^[18], hair dying.^[18]

The most common causes of prematurely gray hair are smoking and usage of tobacco.

Smoking:

Cigarette smoking is a big cause of many diseases and early death in all over the world^[19]. All the organs are affecting by smoking. The diseases that cause by smoking mostly are Cancers, COPD, and heart diseases are mostly caused by smoking. 87% death caused by lungs cancer due to smoking. Those women who smoke have a greater risk of problems in pregnancy and even a chance of death of the baby.^[20] Those people who don't smoke, but breathe in the air where someone smokes, have also a risk of many diseases. They are called second-hand smokers. They mainly include the fetus, small children, old person etc. Almost every year 53000 persons die due to second-hand smoke.^[21] Cigarette is a very harmful product it contains almost 4000 known chemicals in which at least 250 are harmful, more than 50 are carcinogenic,^[22] 400 are other toxins which harm human body.^[23]

In a person life the teenage is a very critical age because in this age development of secondary sexual characteristics is start. This age is categories in

between 10 to 19 year by World Health Organization (WHO). Due to all factors, the chances of adopting bad habits such as the person may start the intake of alcohol or tobacco or he or she may start smoking. According to statistics, almost 1.1 billion are smoking in which 150 million are teenage. Among 150 million half belong to developing countries especially in Pakistan in which 15% are college students. Daily approximately 1200 teenagers start smoking^[24]. According to our study, more than 10 cigarettes per day inhaled mostly people day but some people smoke above 20 also. It is also observed from our data that mostly people start at teenage in between 16 to 25.

Tobacco:

Many people take smokeless tobacco. It divided into chewing tobacco, which place between cheeks and gums^[25], snuff, which sniffs when dried^[25], snus, a small pouch of moist sniff^[25], dissolvable products^[25] People inhale tobacco not only by means of cigarette but there are many other forms of cigarette by which people inhale tobacco. These are beedi^[26], cigars^[26], cigarette^[26], hookah^[26], kretek^[26], pipe^[26] and electronic Cigarette^[27].

The chewing tobacco present in many forms like pan, gutkha, mawa, betel quid, gam and naswar.

According to a study held in the three cities of Pakistan that mostly teenagers start tobacco intake at the age of 13 to 15 years. Specially college or school going students.^[28] According to our study, we observed that mostly people start tobacco at teenage in between 12 to 32.

Methodology

Firstly we plan a poll in which we asked from the general population who have untimely silver hair from his/her adolescent or are a smoker or tobacco client. The survey contains twenty eight inquiries.

All out 317 individuals fill the poll in which 100 are not the individuals who smoke nor they utilize any sort of tobacco however they are confronting the silver hair issue. Their reasons of having silver hair are other than that. Reason of silver hair of 111 individuals are smoking while of 56 individuals are tobacco use. 50 individuals are the individuals who smoke furthermore utilize tobacco by various means other than smoking. Out of 317 individuals 233 are guys while 84 are females. In 317 individuals 43 individuals are under 18, 56 people groups are in the middle of 18 to 21, 95

are in the age section of 22 to 25, 73 individuals are in the middle of the age of 26 to 30, while 51 individuals are matured above 30. Factor analysis is the statistical tool which finds and examine the major causes for the graying of hairs.

Results and Discussion

Factor analysis takes into account 15 factors which are responsible more or less to the premature gray hairs age under 18, 18 to 21, 22 to 25, 26 to 30 and above 30, how long the gray hair has been detected, stress due to this premature gray hair, smoker or non smoker, the age at which the smoking has been started, the number of cigarette intake per day, effects of different diseases which are already possessed like heart disease, lungs disease asthma, coughing, diabetes or

obesity, how long suffering from the possessed diseases, tobacco user or not, how the tobacco is being intake either inhaling or chewing, by which from the tobacco is being intake either by cigar pipe, beedi, E-cigarette, cigarette, kretek or shisha, how the tobacco is being intake either by pan, gutkha, betel quid, mawa, naswar or gam, frequency of tobacco intake, side effects of tobacco, effects of tobacco intake other than smoking gum disease, tooth decay, loss of appetite, tooth loss, tooth staining, abrasion, coughing, bronchospasm, lack of activity, bad breath, dizziness, saliva production increase. When the factor analysis is applied to the variables responsible for the premature gray hairs, the principal component analysis divided it into four major components.

Percentage of Eigen values and variance for the components

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.071	33.808	33.808	5.071	33.808	33.808	4.905	32.701	32.701
2	3.575	23.836	57.645	3.575	23.836	57.645	3.120	20.802	53.503
3	1.682	11.214	68.858	1.682	11.214	68.858	2.291	15.276	68.780
4	1.047	6.981	75.839	1.047	6.981	75.839	1.059	7.059	75.839
5	.932	6.215	82.054						
6	.654	4.357	86.411						
7	.585	3.902	90.313						
8	.531	3.537	93.850						
9	.299	1.996	95.846						
10	.177	1.179	97.025						
11	.160	1.067	98.092						
12	.116	.773	98.865						
13	.078	.519	99.384						
14	.057	.381	99.765						
15	.035	.235	100.000						

Principal component matrix

Component			
1	2	3	4
.945			
.937			
.886			
.879			
.830			
.657			
	.874		
	.858	-.432	
	.849	-.301	
.455	.495		
	.578	.715	
	.564	.683	
.432	.369	.479	
			.722
			.706

Factor analysis is conducted which divides the 15 variables accountable for the graying of hairs into four components. The component matrix by using the method of principal component analysis divided the variables into four components such that the variables: tobacco user or not, form of tobacco intake by chewing or inhaling, chewing of tobacco forms as pan, gutkha betel quid, mawa, naswar and jam, inhaling tobacco forms as cigar, pipe, beedi, E-cigarette, cigarette, kretek and shisha comprises the component 1 which accounts for the 33.808% variation to the premature gray hairs. A study shows that chewing tobacco may lead to hair discoloration, s more smokers and chewers have gray hair color. This indicates that there is a genetic damage of important cells such as melanocytes due to free radicals by tobacco chewing. One of the many reasons of increase in percent of gray hair in individuals which chew tobacco is chewing tobacco release some toxins which produce genotoxic effects while only smokers never feel such reaction. When tobacco chewed and smokes together, it produces more dangerous reactions in comparison to chewing or smoking tobacco one at a time.^[29]

The component 2 which has the high loadings of the variables: smoker or not, starting age of the smoking, cigarette intake per day, effects of tobacco intake other than smoking is responsible for 23.8% of the total variation in the premature gray hairs cause. A study result shows that premature graying of hair is

associated with smoking. The premature graying of hair is seen in all ages and in both gender. Although the complete mechanism is unknown as the melanin presence is responsible for hair color which damaged due to the increased amount of oxidative stress by creating reactive oxygen in a large amount due to smoking.^[30]

The component 3 has the high concentration of variables : the already possessed diseases like heart disease, lungs disease, asthma, diabetes, obesity, coughing, how long the possessed diseases are being suffered and age under 18, 18 to 21, 22 to 25, 26 to 30 and above 30 responsible for the 11.214 % for the total variation for the premature gray hair causes. In our study, we found that the level of dark/white hairs is identified with degree of CAD. Our discoveries additionally recommended that hair turning gray is a danger marker for CAD free of age and other customary danger components. Organic age might be vital in deciding aggregate danger of patients. Amid appraisal of combined CVRF consequences for human body, nearness of natural maturing signs might be valuable in distinguishing people with expanded danger of cardiovascular infection.^[31]

The component 4 has the variables stress due to gray hair and when the gray hair has been detected are responsible for the 6.981 % of the total variation in the causes of premature gray hairs.

Varimax rotation component matrix

Component			
1	2	3	4
.973			
.965			
.919			
.896			
.867			
.652			
	.964		
	.920		
	.900		
.321	.633		
		.930	
		.917	
		.685	
			.723
			.714

The component matrix by using the varimax rotation divided the variables into four components by suppressing the values at 0.3 such that the variables: tobacco user or not, form of tobacco intake by chewing or inhaling, chewing of tobacco forms as pan, gutkha betel quid, mawa, naswar and jam, inhaling tobacco forms as cigar, pipe, beedi, E-cigarette, cigarette, kretek and shisha comprises the component 1 which accounts for the 33.808% variation to the premature gray hairs.

The component 2 which has the high loadings of the variables: smoker or not, starting age of the smoking, cigarette intake per day, effects of tobacco intake other than smoking is responsible for 23.8% of the total variation in the premature gray hairs cause. Other than being the absolute most preventable reason for huge grimmness and a critical reason for death in the all inclusive community, tobacco smoking has been connected to unfavorable dermatologic impacts. A populace based cross-sectional review has as of late shown noteworthy positive relationship between androgenetic alopecia and smoking status in men. The systems by which smoking may bring about male pattern baldness are multifactorial. The way that tobacco smoke-related balding is of the androgenetic sort shows that hereditary components contribute, with changes between people coming about because of various examples of behavior. In perspective of the mental effect of alopecia, expanding open attention to the relationship amongst smoking and balding offers an open door for wellbeing instruction against smoking.^[32]

The component 3 has the high concentration of variables : the already possessed diseases like heart

disease, lungs disease, asthma, diabetes, obesity, coughing, how long the possessed diseases are being suffered and age under 18, 18 to 21, 22 to 25, 26 to 30 and above 30 responsible for the 11.214 % for the total variation for the premature gray hair causes. In this review case record examination, we found measurably huge relationship of hypertension, DM What’s more, MS in youthful smokers with untimely intense CAD in Indian populace when contrasted with youthful smokers without Computer aided design. Computer aided design has been known not an ailment in which various components like smoking, dyslipidemia, hypertension, diabetes, focal heftiness and genetic elements play a noteworthy part. Smoking has been appeared to be a noteworthy predominant modifiable danger variable connected with untimely CAD. Showed that smoking more than 10 bidis in a day brought about a four times increment in the odds of building up a CAD found in patients incorporated into the Framingham Heart Study, the relative danger for CAD was around three times higher in smokers age 35 to 44, contrasted with nonsmokers. This study highlights relationship of other danger elements including metabolic disorder, heftiness, hypertension and DM with untimely CAD autonomous of the smoking. Prior studies have reported pervasiveness of metabolic disorder to go from 37% to 60% in patients with untimely CAD. We have prior reported high commonness (26.8%) of metabolic disorder in patients with untimely CAD. This study shows comparable predominance (28.82%) and further highlights altogether higher relationship of metabolic disorder in smokers.

With untimely CAD when contrasted with smokers without Computer aided design. We likewise report high predominance of diminished HDL cholesterol, expanded triglycerides, LDL cholesterol what's more, aggregate cholesterol in this gathering of patients and their Fundamentally higher relationship in smokers with untimely Computer aided design when contrasted with smokers without CAD along these lines, demonstrating high unmet need to control lipid profile in patients' at-danger for CAD. In any case, there was no distinction in family history of CAD between the 2 bunches. Prior studies have likewise indicated relationship of corneal arcus and hair sparseness with CAD and untimely CAD. Late studies in Singapore likewise highlighted relationship amongst arcus and CAD in the wake of changing for smoking. However, our study demonstrates no critical contrast in corneal arcus and sparseness in smokers with CAD and Cardiovasc Thorac smokers without CAD. Untimely turning gray of hair has been appeared to incline for coronary conduit infection with a study demonstrating that untimely turning gray of hair happens in patients with CAD fewer than 35 years old. It is recommended that the scalp maturing is liable to inherent and outward components including bright radiation and smoking. Shockingly, we saw higher pervasiveness of untimely turning gray in smokers without CAD when contrasted with smokers with CAD. Bigger imminent studies might be expected to promote illuminate the relationship between these cutaneous markers and untimely CAD.

Our study has couple of restrictions. While, it would have been attractive to decide the impact of serum homocysteine levels, lipoprotein (a), little LDL-C, C-receptive protein, mental components like anxiety, eating routine and way of life in the study subjects, it was not logistically achievable for our study bunch. Since it was a review study, numerous patient information must be prohibited because of inadequacy of information. Along these lines, study test may not be a genuine illustrative of the number of inhabitants in untimely intense CAD patients on the loose. Likewise, we couldn't get an excessive number of controls for more effective examination with cases since we pick just patients who introduced to out-patient centers. We recognize these confinements. The significance of the study lies in the way that our study draws out the particular relationship of hypertension, focal heftiness, DM and metabolic disorder in patients with untimely CAD free of the smoking especially.^[33]

The component 4 has the variables stress due to gray hair and when the gray hair has been detected are

responsible for the 6.981 % of the total variation in the causes of premature gray hairs.

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