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Life science

Epidemiology and Associated Factors of Hair Greying A Population-Based, Cross-Sectional Study in Young Adults

Running title: **Epidemiology of Hair Greying**

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Abstract:

Introduction: The greying of hair is an imminent anomaly that occurs commonly as a person ages, but nowadays people in their early twenties experience premature hair greying.

Aim: The study aimed to evaluate: epidemiological characteristics and associated factors the frequency of premature greying of hair the impact on the socio-cultural spheres of life and the audacity of students.

Methodology: This population-based, cross-sectional study included 71 volunteers with prematurely grey hair and 71 non-premature grey hair between the ages of 18 to 30 years old.

Results: Seventy-one participants had premature grey hair and seventy-one had non-premature grey hair. The mean onset of age for premature grey hair is (21.3623188), whereas the mean onset of age for non-premature grey hair is (20.41). The most common area of hair greying during the interview was temporal in males and parietal in females. Hair greying was more severe in males when compared to females.

T-test values/significant:

Premature grey hair age: The T-value is 1.041401. The value of P is .150689. The result is insignificant at $P < .05$.

Non-premature grey hair age: The T-value is 1.207043.

Non-premature grey hair BMI:

The T-value is 1.082864.

Conclusion/Discussion: PGH is linked to premature grey hair in both males and females. For women, it is also linked to thyroid, PCOD, malnutrition, and anemia, while for men, genetics, obesity, and lifestyle are potential risk factors.

Key Words: Premature grey Hair, Risk Factors, Parietal, Temporal, epidemiological.

Introduction:

Premature grey hair is a familiar problem for young individuals suffering visual signs of aging like (canities), healthy aging is an important hallmark of the quality of life and health status of an individual. [1] Although it is not a major medical problem, it greatly concerns many people for aesthetic reasons. Social acceptance in our society. Chemical hair colorants are easy to use and effectively cover grey hair. [2] However, their drawbacks are short-lasting, damaging to hair, and not able to restore the natural color of hair.[3] Melanocytes are the cells that can produce the pigment called melanin a wide range of hair colors can be found across the human population.[4] Many factors influence hair color like genetics, family history, metabolic disorders, autoimmunity, lifestyle, etc.[5]

Definition:

The age of hair greying varies with race and people who identify with each other based on shared attributes that distinguish them from other groups such as a common set of traditions progenitors, culture, religions, and social treatment. [6] Hair is said to grey prematurely only if greying occurs before the age of 20 years in Whites, and before the age of 25 in Asians, aging is a sequential process that occurs regardless of sex and race. [7]

Risk factors:

➢ **Hereditary** • The mean onset of PHG was 15-25 years • The family history of PHG • Both parents	➢ **Autoimmune ne ne disorders** • Vitiligo • Addison′s diseases • Grave′s disease • Premature hypogonadism sm • Werner's syndrome. [8]	➢ **Metabolic disorders** • Hypertension • Obesity • Diabetes Mellitus (DM)	➢ **Life style** • Drugs • Alcohol • Smoking • Sedentary Lifestyle • Coronary Artery Diseases • Wake Syndrome (Irregular Sleeping) • Less in Take Water • Irregular Physical Activity • Stress • Malnutrition. [9]

Materials and methods materials used: Subject or Individual Informed Consent Form, Data

Collection form.

Methodology:

Source of data: Data were collected from population in Guntur

Study Design: Cross-sectional Observational.

Study Site: Guntur

Study Duration: The study was carried out for a period of 6 months (February 2023– July 2023).

Inclusion Criteria: Subjects who are willing to participate in the study, the general population who lives in Guntur, subjects who understand the language, and both sexes.

Exclusion Criteria: exclusion criteria subjects who are greater than the age of 30 years and have physical handicrafts.

Study Procedure: All the data under the inclusion criteria are included and assessed. Design of data collection form and Medication history assessment questionnaires. The data collection form will be designed on the need of subject demographic details and medication chart, medication history will be designed by using standard textbooks, journals, websites, and other relevant sources.

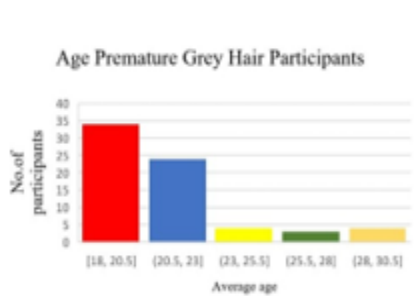
Methodology: A total of 71 volunteers both

premature gray and non-premature grey hair between the ages of 18 to 29 years old were included in this population-based, cross-sectional study. A questionnaire on characteristics and associated factors of hair graying was filled in the face-to-face interview method.

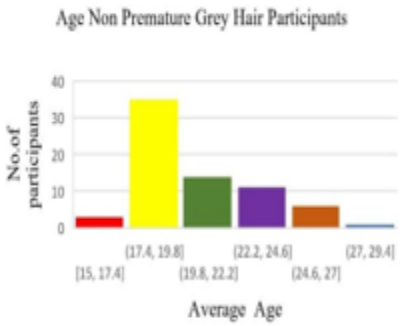
Figure 01: Grey hair pics collected from one of the subjects.

Results:

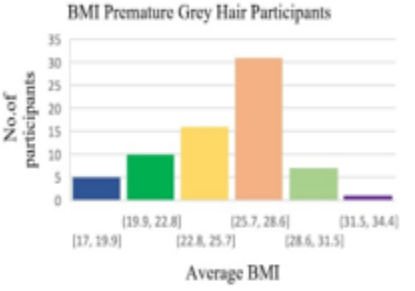
TABLE-1: Consists of Graphs



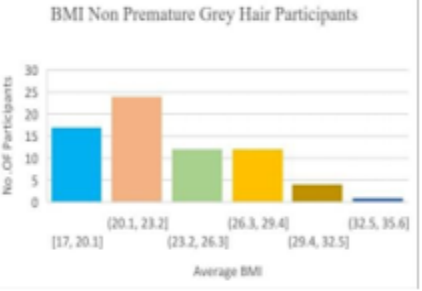
GRAPH-1: The above graph shows the average age for premature grey hair.



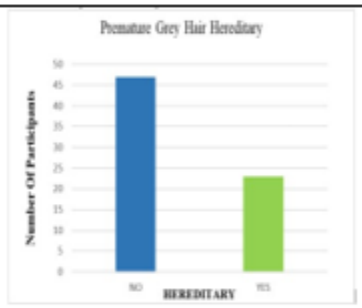
GRAPH-2: The above graph shows the average age for non-premature grey hair.



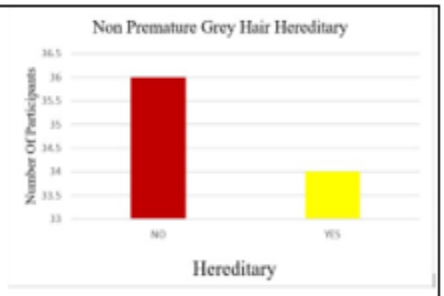
GRAPH-3: The graph shows the average BMI for premature grey hair.



GRAPH-4: The graph shows the average BMI for non-premature grey hair.



GRAPH-9 The graph shows premature grey hair among individuals having hereditary



GRAPH-10: The graph shows non-premature grey hair among individuals having hereditary

TABLE 2: Shows parameters measured among premature grey hair and non-premature grey hair.

S: NO	Parameters measured	Premature Gray Hair (mean)	Non-Premature Gray Hair Age(mean)
1.	Age BMI	21.3623188	20.4142857
2.	Gender (female, male) Smoking (yes, no)	25.1	23.4714286
3.	Alcohol (yes, no) Complications(yes) (yes-	0.39, 0.60	0.66, 0.30
4.	pod)	0.056, 0.915	0.29, 0.6
5.	(yes-thyroid) (yes-anemia) (yes-hair	0.47, 0.49	0.56, 0.42
6.	fall) (yes-headache)	0.28, 0.71	
	Daily Water Intake		
	Daily physical activities (yes, no) Diet (veg, non-veg)	0.15	0
	average sleep time dandruff (yes, no)	0.3	0.1
	family history	0.25	0.2
		0.1	0
7.		0.1	0
8.		2.5litres	3.8litres
		0.21,0.7	0.87,056
9.		0.81, 0,18	0.67,0.32
10		4 hours	5 hours
11		0.61,0.32	0.53,0.46

TABLE 3: The given table shows the statistical significance of the study.

• Premature grey hair age: The T-value is 1.041401. • Non premature gray hair age: The T-value is 1.207043. • Premature gray hair BMI: The T-value is 19.974058 • Non premature gray hair BMI: The T-value is 1.082864.	• The value of P is .150689. The result is insignificant at P < .05. Premature grey hair age. • The value of P is .115769. The result is insignificant at P < .05. Non premature gray hair age. • The value of P is <0.00001. The result is significant at P < .05 with premature gray hair BMI.

The T-value is 1.082864. The value of P is .282639. The result is not significant at P < .05. Mean of females 0.39 of premature gray hair females. The mean of male: 0.60 of premature gray-haired males.

Discussion: In the literature on Factors Associated with Premature Hair Greying in a Provisional adulthood Population done by Swagata Chakrabarty the state of one's skin and hair greatly influences their viewpoint. [10] The length, color, and style of one's hair have a significant impact on how one feels about oneself and how one seems. [11] Weathering of the hair shaft and aging of the hair follicle are two major factors that contribute to hair aging. [12] Degeneration of the hair fiber occurs during the weathering of the hair shaft and advances from the root to the tip. [13] Greying, diminished melanocyte function, and decreased hair production are signs of aging hair follicles. [14] Thyroid, PCOD, malnutrition, anemia, genetics, and obesity, are more responsible for premature grey hair. [15]

Conclusion: PHG seems to be linked to thyroid, PCOD in women, malnutrition, anemia, in males it is linked with genetics, and obesity, lifestyle as there are potential risk factors for premature grey hair.

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Conflict of Interest: International Journal of Current Research and Review

Authors Contribution:

Sireesha Katta - Contributed valuable ideas for the research, and prepared the manuscript by analyzing the data.

Naga Surya Pavan Boddu - Collected the data from subjects.

Dr. Ramarao Nadendla - Guided and provided the required facilities for performing the research.

Dr. T. Jai Divya - Contributed valuable ideas for the research, and guided in preparing the manuscript, and data analysis.

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