Assessment of Alopecia on Both Genders in Selected Colleges among Sjm Group of Institution in Chitradurga

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ABSTRACT
INTRODUCTION: Alopecia is the partial or complete loss of hair—especially on the scalp—either in patches (alopecia areata), on the entire head (alopecia totalis), or over the entire body (alopecia universalis). The known reasons may be genetic background, hormonal dysfunction or imbalance, infections. There may be a relationship between iron depletion and diffuse hair loss in home parenteral nutrition patients at higher risk of anaemia. This study helps to Acknowledge the influence of lifestyle and health habits on the hair fall, and to understand the causes of Alopecia.

OBJECTIVES: To assess the reasons of alopecia. To evaluate the medications taken for alopecia. To create awareness on alopecia.

MATERIALS AND METHODS: The data was collected from four colleges of SJM Institute. The research design adopted for this study is cross-sectional study. The study was conducted to investigate Assessment of Alopecia in selected health care college students of SJM institute of Chitradurga. All participants were asked to complete an online questionnaire. A total of 274 responses were recorded.

RESULTS: A total of 274 responses were recorded in which 134 (48.9%) participants were female and 140 (51.1%) participants were male. Out of 274 participants, 98 (35.8%) participants experience alopecia at the age group of 19-21(majority), 54 out of 134 female participants have experienced alopecia due to hormonal issues, 223 out of 274 experienced alopecia in stressed out conditions, lifestyle habits, nutrition requirement and Genetics also influence on hair fall.

Conclusion: The alopecia or hair fall is not a minor issue and it is clear that hair habits, hormonal issues, stress, lifestyle habits, nutrition requirement and Genetics influence on hair fall. it influences on self-esteem and confidence so proper awareness acknowledging the need of professional guidance.

I.   INTRODUCTION
Alopecia is in which characterized by hair loss happens can be in whole body and scalp. It can be due to varies reasons. The reasons can be known are not known (idiopathic). The known reasons may be genetic background, hormonal dysfunction or imbalance, infections. There are two types of alopecia in that is scarring and non-scarring alopecia. [1]

In recent times onset of alopecia cannot be only based on genetic background, even behavioral changes and life style like heavy metals smoking alcohol dietary insufficiency, stress, sleeping habits, scalp health managements can be reason.[2] Depending on the specific pathogenesis of hair loss and geographic location, a number of psychiatric and medical comorbidities, including but not limited to thyroid disease, lupus erythematosus, diabetes mellitus, atopic dermatitis, sinusitis, coronary artery disease, anxiety, depression, and suicidality, have been identified in association with alopecia.[5]

The most common treatment for most known or unknown reasons is topical minoxidil for most types of alopecia. Topical minoxidil ranging from 0.01%- 15% is used for AGA it might lead to regrowth of hair by 17-70%.[3] Even hair loss can be due to deficiency in nutrients, protein malnutrition can lead in skin and hair changes less intake of carbohydrates can also lead in hair loss[4].Diet and nutrition deficiencies can cause decreased hair structure and increased hair fall[6].

Data collection for diagnosis is like amount of hair shed and duration and hair loss since when, about patient diet, their life style , distribution of hair in scalp to known the reason for

hair fall. For female they concentrate about their menstrual cycle and the thyroid hormones[9].

Hair on scalp is about 1lakh to 1.5 lakh and the hair loss depends upon the individual person, if the count of hair fall is about 50-100 it is said normal if it is more than that is has to be diagnoiced and treated.Any kind of physical trauma such as surgery, a car accident, child birth or a severe illness, even the flu, can cause temporary hair loss. This can trigger a type of hair loss called 'telogen effluvium[10].

Pollution is on the rise all over the world and more so in Indian metros. Air pollution can contribute to scalp irritation, redness, itching, excessive sebum secretion, dandruff, pain in the hair roots and hair loss. The combination is defined as sensitive scalp syndrome. The condition can mimic or overlap androgenic alopecia. The possibility should be suspected to be discovered. Use of antioxidants, frequent scalp wash with mild shampoos, use of special EDTA shampoos and use of coconut oil or hair serum, are the remedies that can protect the hair from environmental damage[13].

Androgenetic alopecia (AGA) is one of the most common chronic problems seen by dermatologists and tricologists. It is characterized by progressive hair loss, especially of scalp hair, and has distinctive patterns of loss in women and men, but in both genders, the central scalp is most severely affected. It often begins at sexual maturity.Asian patients with AGA have different types of hair loss and family histories when compared with Europeans, which is why the treatment pattern might differ. Therefore, prevalence, hair loss patterns, familial factors, androgen receptor gene polymorphisms of AGA patients, and management are different[14].

Alopecia can also be an important feature which affects the quality of life of these patients in particular when it evolves in scarring alopecia. Among autoimmune diseases, connective tissue diseases and bullous disorders[15].

Improved hair counts, calibre of the hair and report regrowth over the areas of hair loss in a smoker, with the use of minoxidil 2%, use of antioxidants and nutritional support using lower than recommended, once in three days, divided dose of Vitamins as a cyclical therapy[17].

The differential diagnosis of hair loss includes a number of disorders causing scarring or non-scarring alopecia. immobilization of the head during surgery and following prolonged stays on intensive care units, can lead to pressure alopecia[19].

Anti-cancer and arthris treatment drugs, drugs given for blood pressure regulation like beta blockers, oral contraceptives and some NSAIDS. Other that drugs even scalp health can cause hair fall like dandruff, excess of oil production, tinea capitis[20].

There may be a relationship between iron depletion and diffuse hair loss in home parenteral nutrition patients at higher risk of anaemia[23]

Male-pattern hair loss (MPHL) is a genetically determined progressive nature that causes a gradual conversion of terminal hair into vellus hair. The prevalence increases with increasing age [24].forwomen hair follicles (HF) is uniquely hormone sensitive. It is associated with hair fall when increase in TSH levels to hair loss. TSH targets HF. TSH alter the mesenchymal function of HF.[24]

The major approach to prevent or minimize CIA is by scalp cooling. Unfortunately, most published studies on scalp cooling are rather small, lack an optimal control group, or have no exact description of the duration and the method of scalp cooling.[25]

In men and women, the most common causes of iron deficiency anaemia are gastrointestinal blood loss and malabsorption.[28]

Topically administered minoxidil is mostly used for the treatment of androgenetic alopecia in women.[31]

This study helps to Acknowledge the influence of lifestyle and health habits on the hair fall, and to understand the causes of Alopecia

II. MATERIALS AND METHODOLOGY
1 MATERIALS
a Source of data:
Selected students from different colleges of SJM Institute.
b Inclusion Criteria:
College students in age group of 18-26
c Exclusion Criteria:
Students who were not from SJM group of institution.
2 ETHICAL APPROVAL
The study received ethical approval from the Institutional Ethics Committee of SJM College of Pharmacy, Chitradurga.

3 METHODS OF COLLECTION OF DATA:
a Study design-This is a Cross-sectional study.
b   Study site-Selected SJM Institutes in Chitradurga, Karnataka.

(Pharmacy, Medical, Dental)

c Study duration-The study was conducted over a period of six months.

d Statistical analysis-Descriptive statistical analysis has been carried out in the present study. Data are presented as mean ± standard deviation (SD) and as frequency distribution. A chi-square test was conducted to examine the association for categorical variables

Statistical software:

The statistical analysis was performed using the IBM SPSS Data Analysis Version 22.0 for windows and GraphPad Prism 9 (La Jolla, CA, USA) has been used to generate graphs and Microsoft Excel for tables.

4 STUDY PROCEDURE:

The study commenced after getting approval from the Institutional Ethics Committee.

Participants are college students randomly selected, pertaining to three different courses (Pharmacy, Medical, and Dental) at selected SJM Institute in Chitradurga.

The study was conducted to investigate Assessment of Alopecia in selected health care college students of SJM institute of Chitradurga.

All participants were asked to complete an online questionnaire.

Before filling the online survey, participants provided with information and consent regarding the purpose of the study.

a Development of Questionnaire

The development of questionnaire was carried out systematically by review of related literatures, using search engines like Google Scholar and Pubmed. The articles were selected to provide a wider view of existing evidence of Alopecia and causes of alopecia on related behavior such as eating, physical activity, sleep, stress among people .The questionnaire consist a set of 27 questions which included personal and demographic questions such as age, gender, habits such as smoking and alcohol. The questions were categorized as lifestyle practices, physical activity, stress, sleep, smoking habits, medications and their treatment plan. The online data collection form was prepared using Google Form and distributed among college students with the help of social media platforms like WhatsApp and Facebook.

III. RESULTS

A total of 274 responses were recorded in the study and they are analyzed for their status about hair health and their lifestyle practices. The questionnaire was designed to assess their lifestyle and their hair health. Alopecia is due to multiple factors and even it can be a symptom or a disease. Hair fall happens gradually and it is hard to diagnose the reasons. To assess the reasons of students facing hair diffuse. To provide awareness related alopecia because most problems related to hair are reconsidered for good looks than health.

3.1 EPIDEMOLOGIC PROFILE
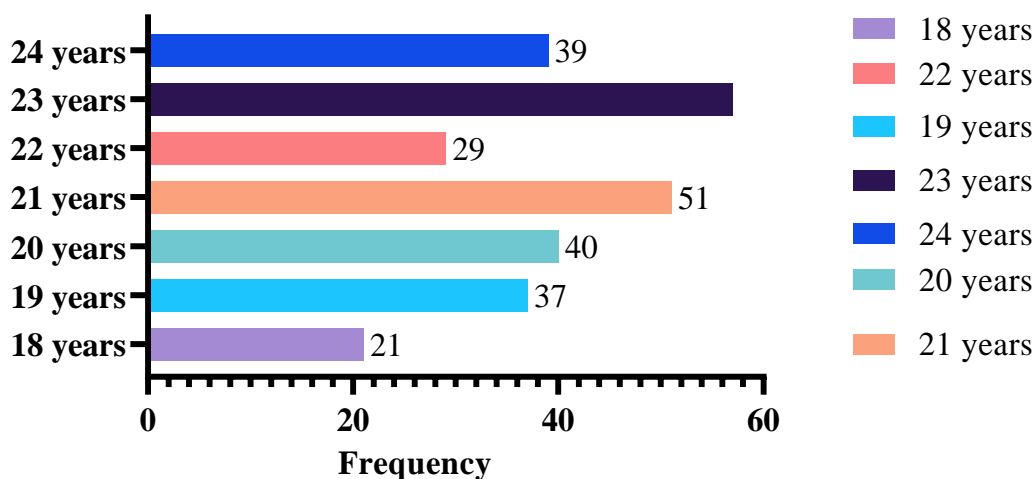
3.1. a. Age Distribution:

The participants enrolled in the study were between the age group 18 to 24. In which the majority of the participants were 23 (20.8%). The mean age of the study population is 21.30±1.87.

Age group in years	Frequency	Percentage(%)
18	21	7.7
19	37	13.5
20	40	14.6
21	51	18.6
22	29	10.6
23	57	20.8
24	39	14.2

Total	274	100.0

**Table No: 1 Age distribution**

Age of Participants

Graph No: 1 Age distribution

5.1. b. Gender wise distribution

The study population comprised of male population of 140 (51.1%) and female population of 134 (48.9%). Table 2 shows the gender wise distribution in the study population.

Gender	Frequency	Percentage(%)
Female	134	48.9
Male	140	51.1
Total	274	100.0

Table No: 2 Gender distribution of participants
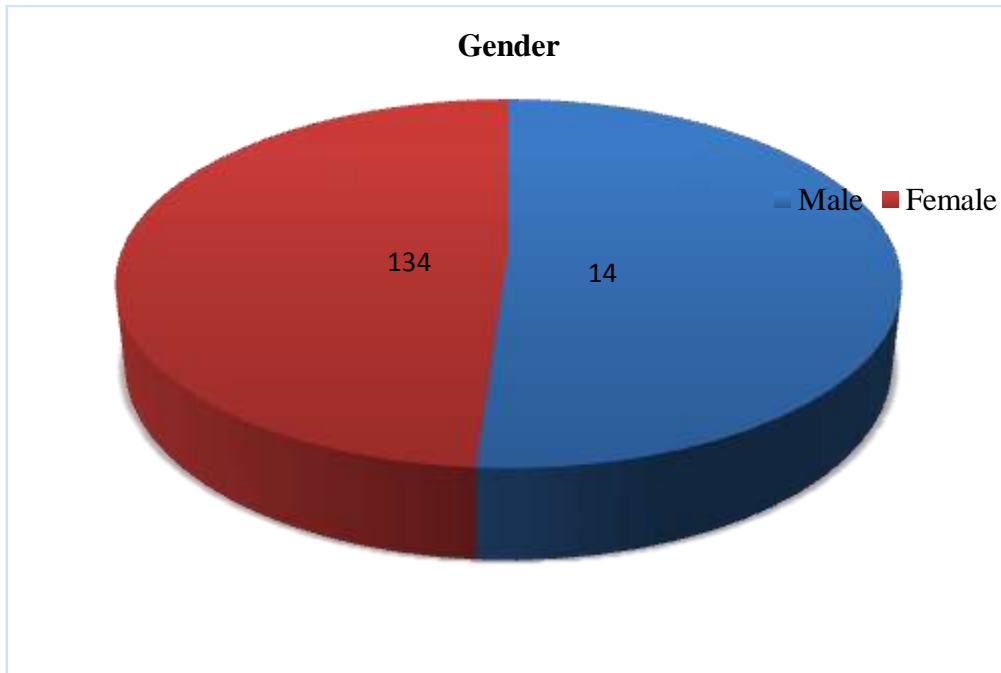
Gender

Graph No: 2 showing gender distribution

Assessment of reasons for hair fall
Duration since hair fall started

Hair fall is a gradual and mostly does not occurs in sudden, androgenic alopecia happens gradually in both male and female. About 60% of people have been experiencing the gradual loss of hair.

Responses	Number of participants	Frequency
Didn't notice	75	27.4
From 10 years	36	13.1
From 6 months	33	12.0
From college	130	47.4
Total	274	100.0

Table No: 3 Duration since hair fall started
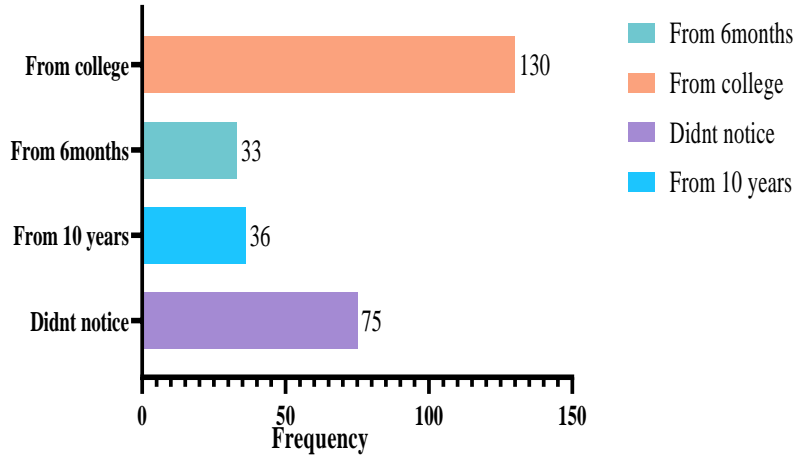
Graph No: 3 Depicting duration since hair fall started

The age they experienced Alopecia

Hormonal changes can occur in both male and female, it happens mostly for younger adults. Thus causing increased hair fall. The most population experienced increased hair fall at the age of 19-21 yrs. (35.8%) and 16-18 yrs. (31.4%). About 67.2% of population experienced hair fall at age group of 17-21yrs.

Age group	Frequency	Percentage (%)
16-19 years	86	31.4
19-21 years	98	35.8
21-23 years	64	23.4
23-25 years	26	9.5
Total	274	100.0

Table No: 4 Age of increased event of alopecia
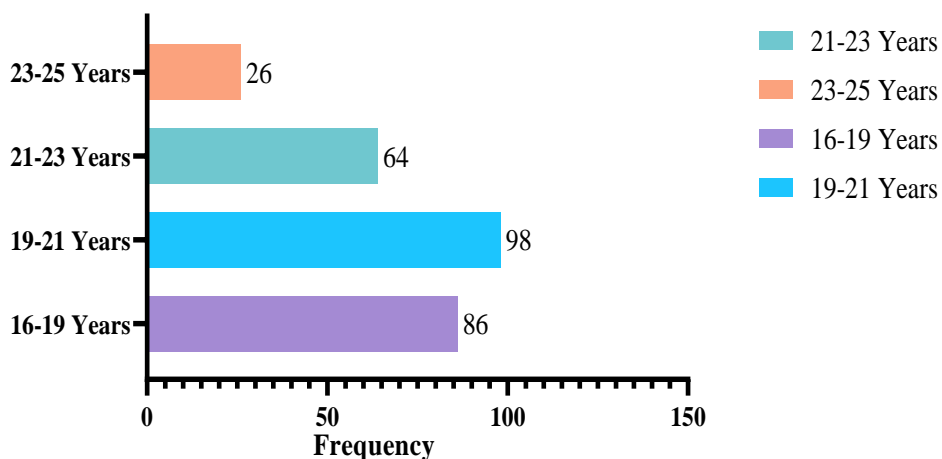
Graph No: 4 Depicting Age of increased event of alopecia
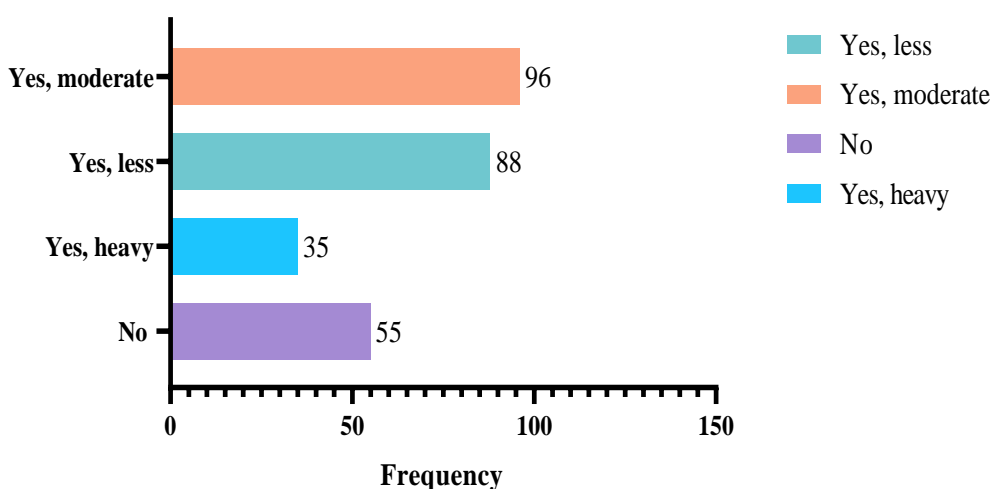
Incidence of Dandruff

Dandruff can also be the cause of hair fall. Dandruff is mainly caused by oily scalp and later due to yeast formation that feeds on oily scalp, unhealthy scalp etc.

In the study population for about 79.9% (219) of the people suffer from heavy (12.8%), moderate (35%) and mild dandruff (32.1%).

Responses	Frequency	Percentage (%)
No	55	20.1
Yes, heavy	35	12.8
Yes, less	88	32.1
Yes, moderate	96	35.0
Total	274	100.0

Table No: 5Incidence of Dandruff

Graph No: 5 Depicting incidence of Dandruff

Hair fall during menarche.

In the study population 134 are female comprising of 48.9 % (134). In female population there are chances of hormonal imbalances that causing hair fall. About 40.25 % (54) of the female population have noticed decrease in hair volume since their menarche.

Responses	Frequency	Percentage (%)
Maybe , didn't observe	27	20.2
No	53	39.55
Yes, at times of cycle	24	17.91
Yes, gradually	30	22.34
Total	134	100.0

Table No : 6Hair fall during menarche
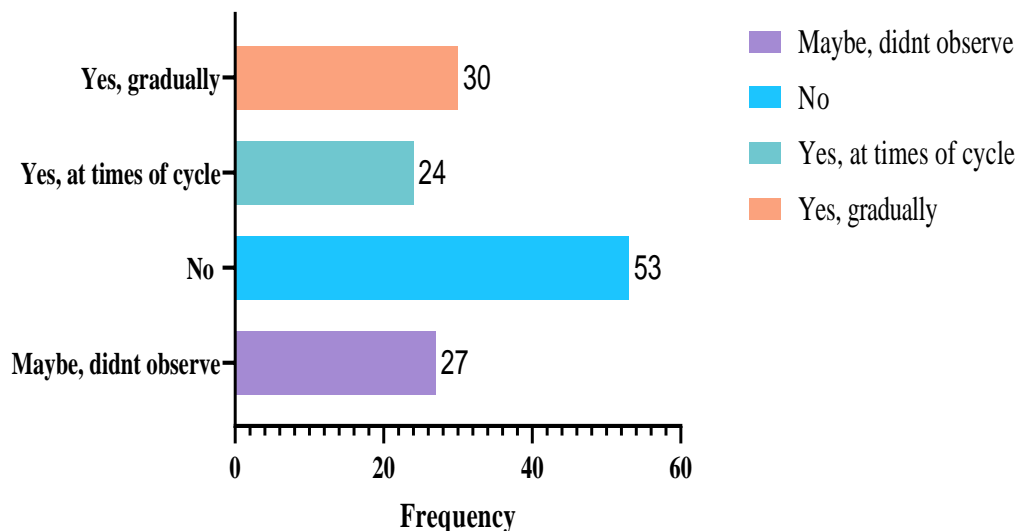
**Graph No: 6 Depicting Hair fall during menarche**

Influence of stress and anger on hair fall

In study population about 81.4 %(223) of people have noticed increased hair fall when they are stressed relatively: moderate 29.9 %(82), strongly 28.5 %(78), mild 23 %(63). Stress could be due to many reasons like environmental, educational, and emotional etc.

Responses	Frequency	Percentage (%)
No	51	18.6
Yes not much but slightly	63	23.0
Yes, moderately	82	29.9
Yes, strongly	78	28.5
Total	274	100.0

**Table No: 7Influence of stress and anger on hair fall**
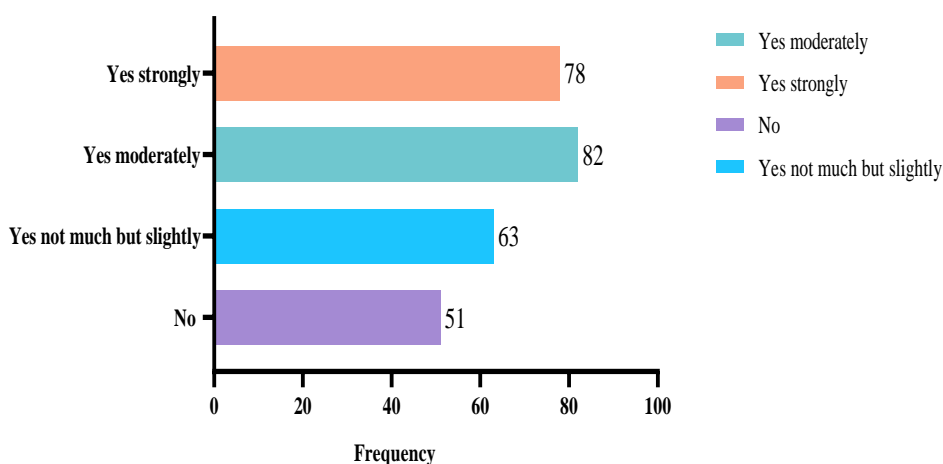
Graph No: 7 depicting the influence of stress and anger on hair fall

Nutrition for hair
The metabolism depends on nutrition if there is depletion of nutrient it effect hair growth and hair health. In the study population we have about 63.1 %(173) people who do not consume the required amount of food nutrition, relatively: very less 6.9 %(19), moderately 22.3 %(61), not enough 33.9 %(93).

Responses	Frequency	Percentage (%)
No	19	6.9
Yes	101	36.9
Yes in less proportion	61	22.3
Yes not completely	93	33.9
Total	274	100.0

Table No: 8Nutrition for hair
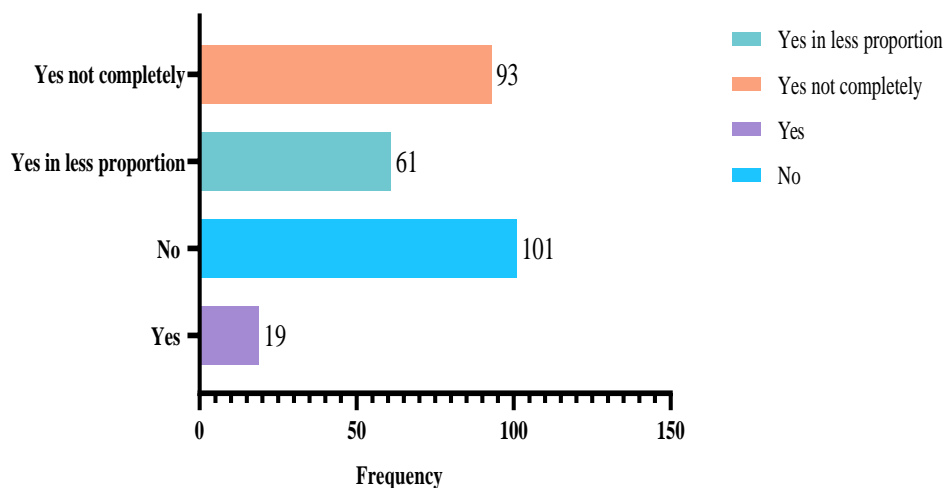
Graph No: 8 depicting nutrition in study population

Influence of smoking on hair fall
In the study population about 14.6% (40) have been constantly exposed for smoking. The most of people 72.3 %(234) are non-smokers**.** People who smoke can have their hair follicles damaged

Responses	Frequency	Percentage (%)
No I don't smoke	198	72.3
Yes 4-5 cigarettes' per day	27	9.9
Yes a pack a day	13	4.7
Yes occasionally	36	13.1
Total	274	100.0

Table No: 9Influence of smoking on hair fall
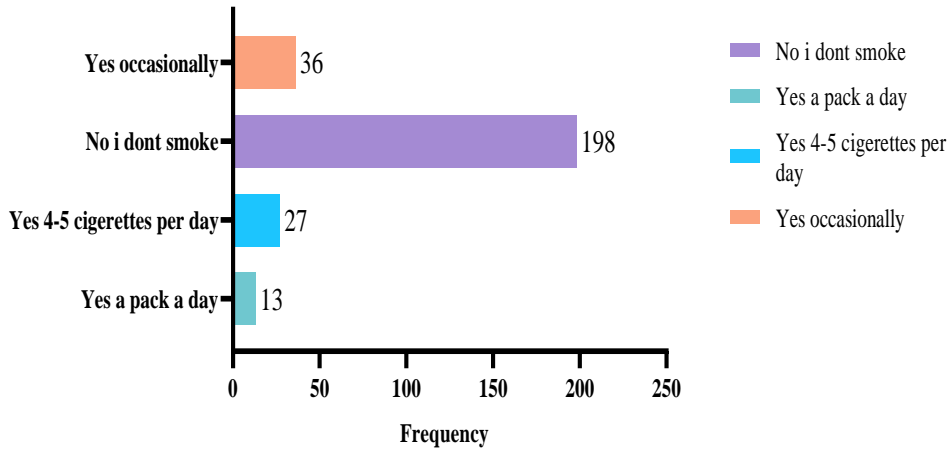
Graph No: 9 Depicting the influence of hair fall in study population
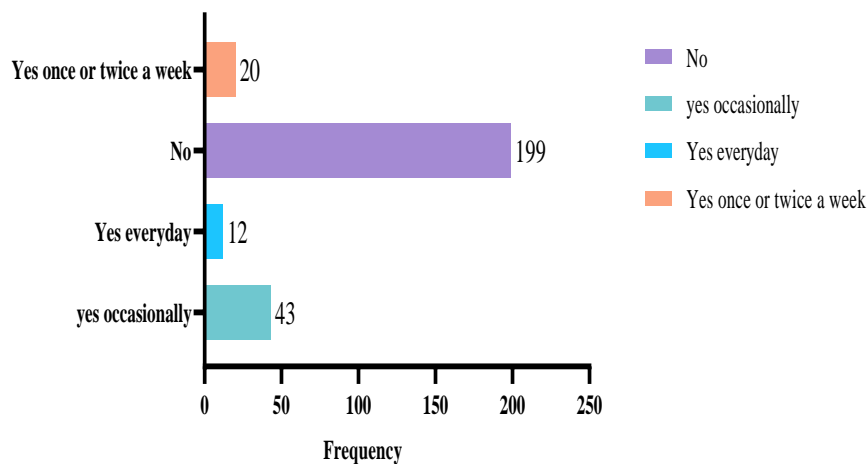
Alcohol consumption

Consumption of alcohol can lead to decrease in absorption of nutrients. In study population about 11.7% (32) of people consume alcohol regularly, and 72.6% (199) of people don't consume alcohol. There are chances for 32 people to have their hair thin due to their life style.

Responses	Frequency	Percentage (%)
No	199	72.6
Yes , everyday	12	4.4
Yes, occasionally	43	15.7
Yes, once or twice a week	20	7.3
Total	274	100.0

Table No : 10Alcohol consumption



Graph No: 10 depicting alcohol consumption

Family history

Most people suffering from gradual hair loss have family history of either a parent or both.

In study population 49.3% (135) have either one or both parents having diffuse hair and 50.7 %(139) have normal hair volume.

Responses	Frequency	Percentage (%)
Both don't have good volume and thick hair	33	12.0
Both have normal hair	139	50.7
Both have thin and fine hair	42	15.3
One have thin and fine hair and other have thick hair	60	21.9
Total	274	100.0

Table No: 11 Family history
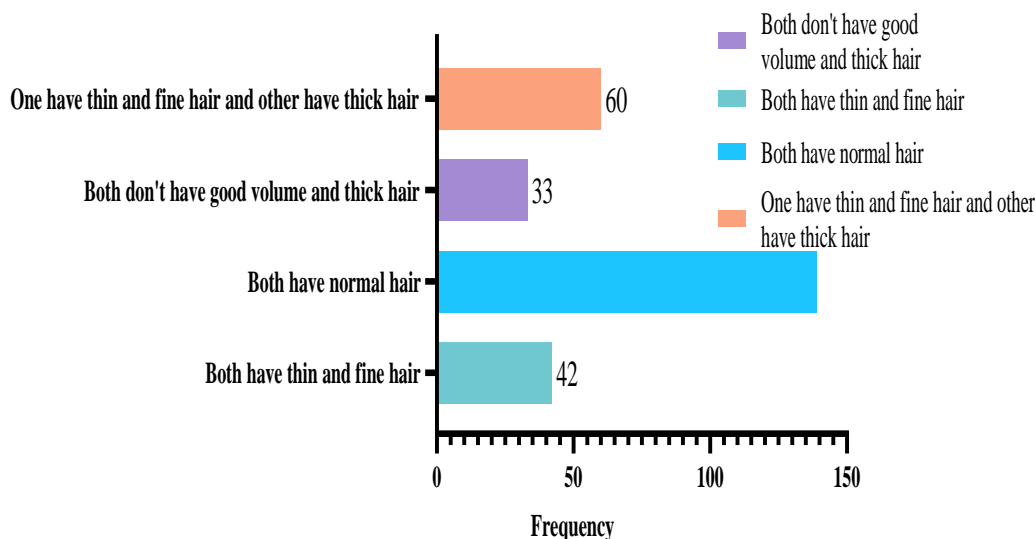
Graph No: 11 Depicting Family history of Hair pattern in study population
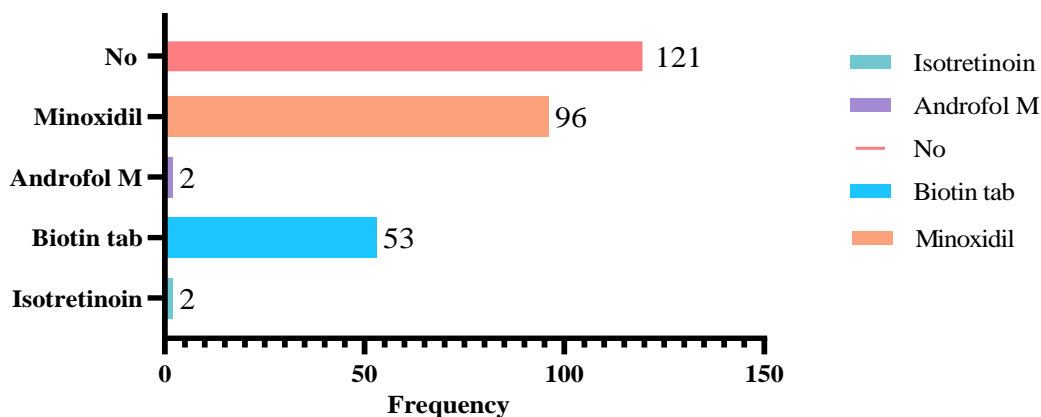
Medication taken for alopecia.

Medication taken by the study population are different few are based on the doctor advice and few may be on self because only 21.2 %(58) have visited doctor. Where people not on medication are 44.2% (121) and others are on medication respectively Androf M of 0.7 %(2), Isotretinoin of 0.7 %(2), Biotin tab of 19.3 %(53) and Minoxidil of 35 %(96).

Medications	Frequency	Percentage (%)
Androfol M	2	0.7
Biotin tab	53	19.3
Isotretinoin	2	0.7
Minoxidil	96	35.0
No	121	44.2
Total	274	100.0

Table No: 12 Medication taken for alopecia

Graph No: 12 Depicting the medications taken by study population in alopecia

IV. DISCUSSION

A cross sectional study was carried out to assess the reason, medications and to provide awareness on alopecia. The total of 274 people participated in answering the questionnaire all the participants are students of SJM group of institution.

We have categorised the people based on demographic details like age and gender

The study aim to assess the reasons of alopecia in students with 48.9% female and 51.1% male population. Regarding reasons it is different for both male and female in some aspects.

Reasons such as influence of stress and anger on hair fall about 81.4% experience hair fall respectively moderate of 39.9% and mild stress of 23% and heavy stress of about 28.5%. It is explained stress causes hair fall in experiment conducted previously by **Soorih Shaikh et al.** they have categorised people stress into three categories and measured hair fall based on stress.

In student life the adequate nutrition availability or consumption depends on the lifestyle and their food habits about 63.1% of participants in the study population lack proper nutrition required. In previous studies conducted by **Emily L Guo and Rajini kata** explains effect of nutrition on hair growth and deficiency leading to hair loss or alopecia.

In female hormonal imbalance starts to occur after they reach menarche, 48.9% (134) are female participants and out of them 40.25(54) have noticed hair fall since menarche. In previous studies conducted by **Carolyn thiedke. C**explained the influence of hormones in female alopecia. Article by **Eniko Bodo** explains the hormonal issues of female influencing on hair fall

Smoking also plays a role in alopecia about 14.6% of the population are exposed to smoking and they may have hair follicular damage due to smoking as explained in previous study done by **Rajesh singhrajputh**.

Genetics also plays a vital role in hair growth about 49.3% of the population might have alopecia due to this, About this is explained by **DeepaniRatnayak** and **Rodney Sinclar.**

Being in dusty area like chitradurga there are high chances of pollution, it might also lead to dandruff and dust accumulation on scalp. About 79.9% of the participants are experiencing dandruff and they might experience alopecia as mentioned in the previous study done by **K Srivastava etal**

V. CONCLUSION

The present study is aimed to assess reasons for alopecia and medications taken among college students of SJM institutions. According to the findings of study college students experience increased hair fall due to various reasons and they even undergo thinning of hair.

Further studies are required to provide proper treatment and guidance according to the reasons and awareness should be provided for the students to motivate on visiting doctors for their treatment. According to the study the percentage of students visiting the doctor is only 21.2% (58) out of 274 students, they do not consider alopecia as a condition were they need to visit a doctor.

From our study it's clear that hair habits, other reasons such as hormonal issues, stress, lifestyle habits, nutrition requirement and Genetics influence on hair fall.

Avoiding alcohol, smoking and exposure to polluted environment and chemical treatments

can reduce environmental stress on hair, on following this with proper treatment can lead to regrowth and structuration of hair.

Improper hair hygiene is the major cause leading to hair fall. According to the study it concludes that the college students have high exposure to improper lifestyle and hair hygiene that causes alopecia.

Concisely the study concludes that hair fall is not a minor issue it even influences on self-esteem and confidence so proper awareness acknowledging the need of professional guidance.

VI.   ACKNOWLEDGEMENTS

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