

Hair Loss in Foreign Medical Students and Alter its Intensity during the Covid-19 Pandemic in Georgia

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Abstract – The current millennial and generation Z are known to experience more stress than any generation before them. A fraction of individuals belonging to these generations is current foreign medical students, where medicine is known to be one of the stressful courses one can study. When this extreme stress is met with genetic predisposition, nutritional deficiencies, internal diseases, and inappropriate hair care practices hair loss can be quite aggressive. An online survey consisting of 15 questions was conducted to find if these factors contribute to foreign medical students experiencing hair loss at a very young age and if the current chaotic environment of the covid-19 pandemic has accelerated hair loss. 81.7 % (n=156) foreign medical students belonging to ages 17 to 25 years started to experience hair loss ($p = 0.0127$), where stress (54.5 % (n=85)), nutritional deficiencies and internal conditions (37.5 % (n=58)) have been responded to be contributing factors for their condition. Interestingly, 54.5 % (n=85) students are experiencing hair loss after moving to Georgia ($p=0.04$). Despite all the acknowledgment of cause for their conditions, 92.3 % (n=144) of foreign medical students have responded to not undergo any treatments to manage and control hair loss. Additionally, 33.3 % (n=52) of students stated that they have noticed more progression in hair loss during this pandemic. If these students continue to ignore undergoing treatments then they might experience more progression in hair loss.

Keywords – Hair loss; Foreign medical students; Stress; Micronutrients deficiency; Pandemic; Hair loss intensity; Coronavirus

I. INTRODUCTION

In Homo sapiens, hair plays a very important role, in current times hair is a symbol of class, intellect virility and is often associated with youthfulness and vitality [1]. As we age we experience changes in our hair and scalp health, these changes are multifactorial with contributions from genetic predisposition, pathological states, stress, pharmacotherapy, and nutritional inadequacies [2]. Over the generations there has been a rapid increase in stress due to various factors and generations such as millennials and Generation Z are more increasingly living under stress [3]. This stress has the potential to alter the immune response and transiently hamper hair growth [4].

Over the last few decades, malnutrition around the world has increased and younger populations are increasingly becoming malnourished. Currently, micronutrient deficiency is becoming more prevalent. Micronutrients are known to impact both hair structure and hair growth [5], thereby linking micronutrient deficiency to hair loss. Several internal diseases are also a key contributor to hair loss [6].

Certain hair care practices that have become popularized over the last few decades can also cause hair fragility leading to breakage [7]. All these factors can contribute to premature hair loss in younger ages more specifically in millennials and generation Z.

Medicine is known to be one of the most stressful courses one can study. A huge fraction of millennials and generation Z are current medical students amongst them International students tend to experience the most stress. Additionally, the recent SARS-CoV-2 emergencies had made situations way worse by impacting the lives of individuals around the globe in several ways.

This survey aims to study if factors such as transition from home country to foreign country, extreme stress, nutrient deficiencies, internal diseases, and hair care practices can contribute to premature or progressive hair loss in foreign medical students and if the recent SARS-CoV-2 emergencies have altered the intensity of hair loss in them.

II. METHODS

The cross-sectional survey was administered online through google docs to gather information from students. A team of two medical students of Tbilisi State Medical University under the supervision of Dr. Luiza Gabunia, Director of Scientific Research-Skills Centre, and Associate Professor of Medical Pharmacology Department, designed the survey questionnaire. The 15-item questionnaire was constructed that can be finished filling within 5 minutes. The link to the survey was shared with representatives of each year of the international faculty of TBILISI STATE MEDICAL UNIVERSITY. This survey required an email log-in for participation. The questionnaire was self-administered using google docs online. Electronic consent for participation was required at the initial page of the survey with the reassurance of maintaining the anonymity of the responses.

The statistical analysis was performed using the Microsoft excel 2016, and quantpsy.org. Regression analysis was done to see relation of hair loss in foreign medical students in Georgia. A chi-square test was performed to examine the relation of hair loss after moving to Georgia. P values less than 0.05 were considered as a statistical significance.

The following questions were asked in the survey:

- 1) We would like to know if you would be interested in filling this form.
- 2) Please select the year you are studying
- 3) Gender
- 4) Please select your age
- 5) Have you been experiencing any hair loss lately or have you been dealing with hair loss for quite some time now?
- 6) How long have you been suffering from hair loss?
- 7) Did your hair loss intensity alter during the COVID-19 pandemic?
- 8) Did you start experiencing Hair loss after moving to Georgia?
- 9) Some studies have shown that stress leads to hair loss. If you often feel stressed then do you think your stress may be the cause for your hair loss?
- 10) Do you suffer from any below-listed conditions?
- 11) Are you concerned that you would be losing more hair in the future?
- 12) Do you use hair care products available in Georgia?
- 13) Are you taking any precautionary measures to prevent or manage hair loss?
- 14) Do you think, with proper treatment and manageable steps you will be able to control your hair loss?
- 15) Do you think, with proper treatment and manageable steps you will be able to control your hair loss?

III. RESULTS

100% participation was seen by the students. A total of 191 responses were collected from foreign medical students studying in Tbilisi State Medical University after informed consent.

8.4 % (n=16) of 1st year, 17.8 % (n=34) of 2nd year, 16.9 % (n=32) of 3rd year, 24.6 % (n=47) of 4th year, 25.7 % (n=49) of 5th year and 6.8 % (n=13) of 6th year have filled the questionnaire (Figure 1). Among them, a total of 68.6 % (n=131) are female students and 30.4 % (n=58) are male students. These students belonged to 17-25 years of age (Figure 2).

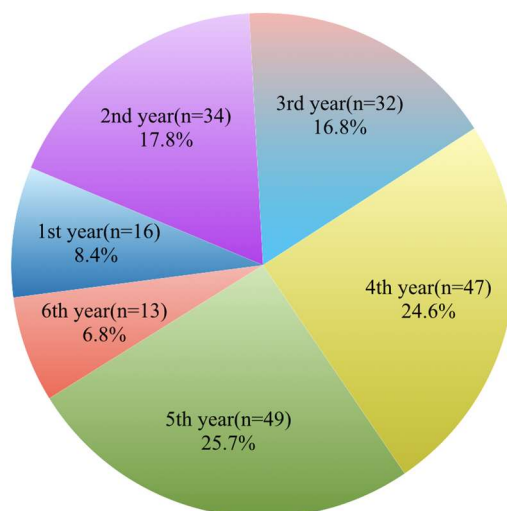


Fig. 1. Participants from each medical year.

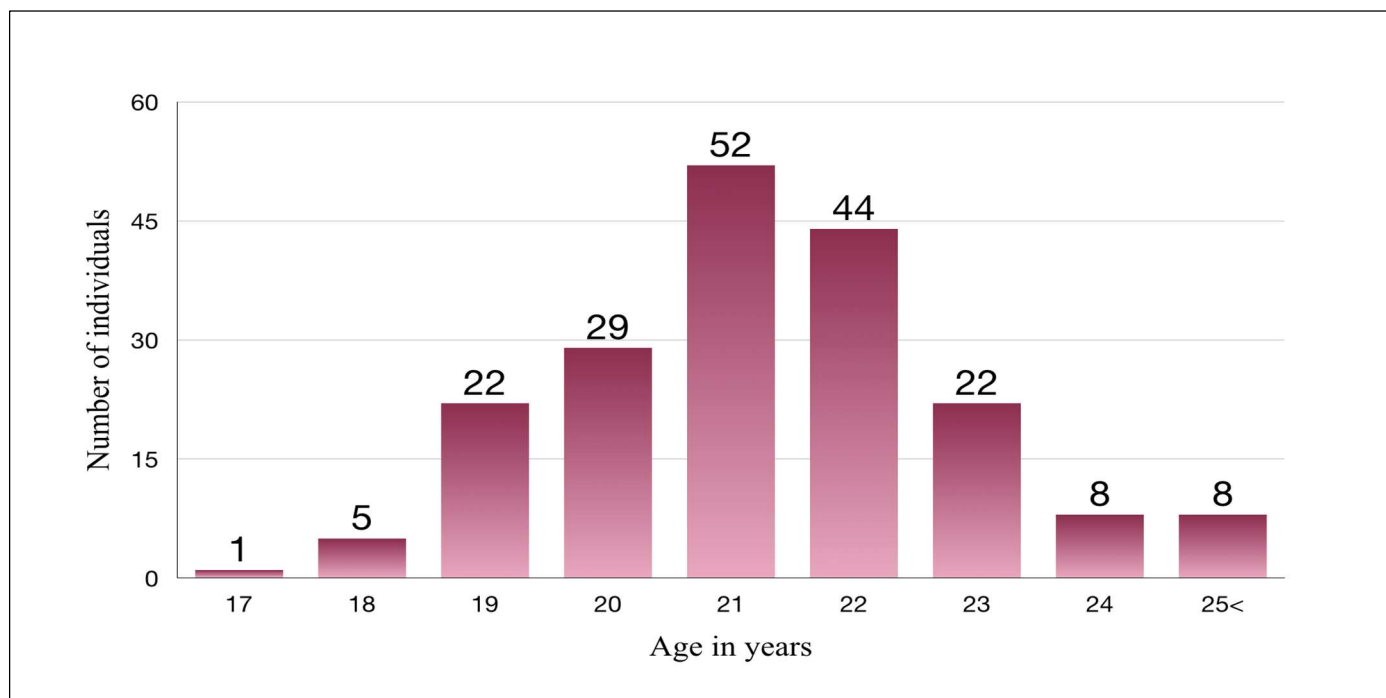


Fig. 2. Number of participants according to age.

81.7 % (n=156) respondents stated that they are dealing with hair loss ($p=0.0127$) (Figure 3) and 59.6 % (n=93) stated to have been dealing with hair loss for more than a year, most of these students were studying 4th and 5th year of medicine at the time of conducting the survey (Figure 4).

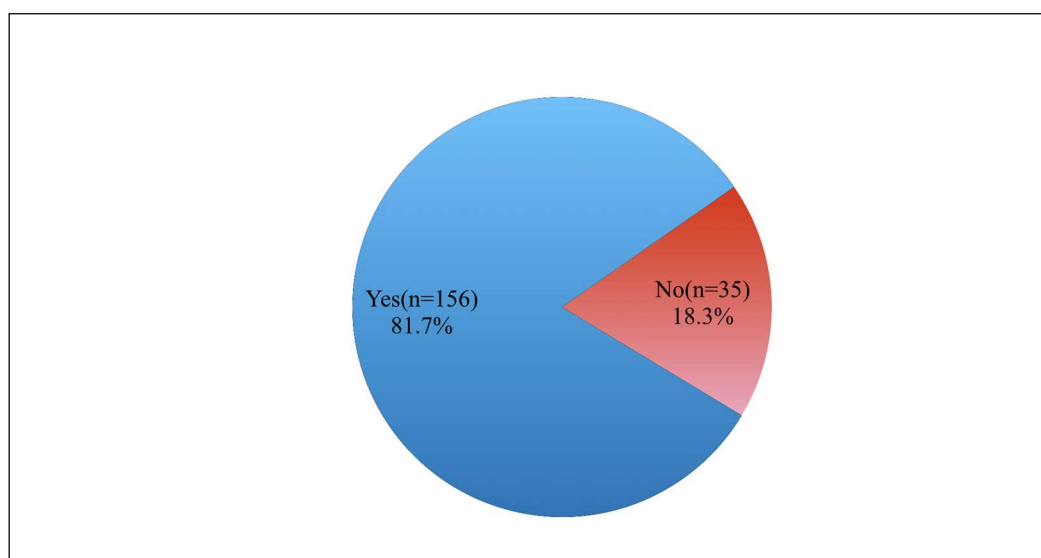


Fig. 3. Participants experiencing hair loss.

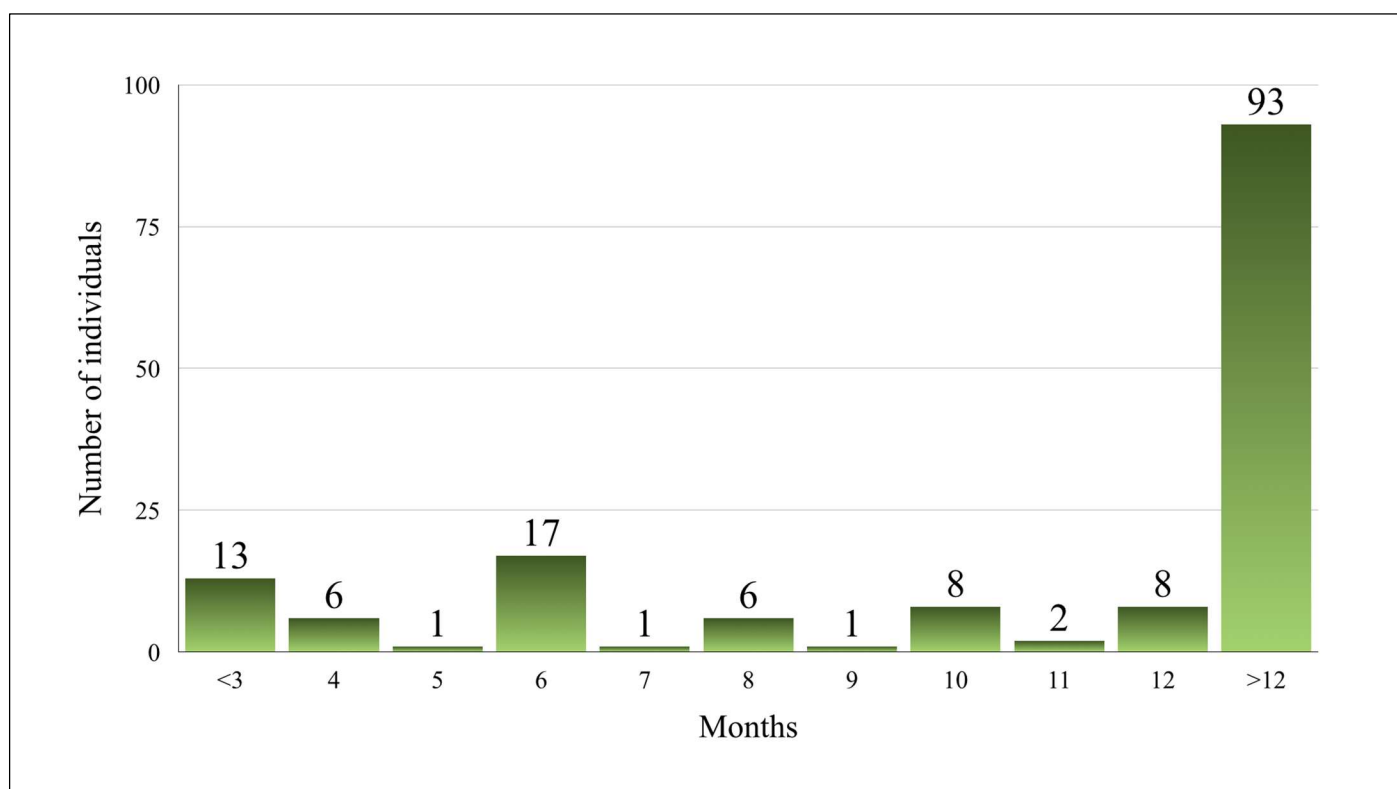


Fig. 4. Duration of hair loss.

33.3 % (n=52) of respondents responded that their hair loss intensity altered after the pandemic started, 30.8 % (n=48) responded to have observed no changes and 35.9 % (n=56) were not sure if they noticed any changes (Figure 5).

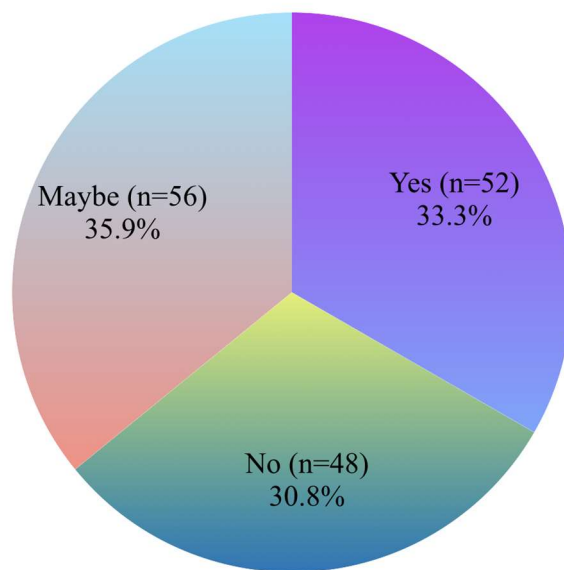


Fig. 5. Altered hair loss intensity after pandemic.

This altered intensity might be due to the chaos caused by sudden changes in lifestyle and its impact on mental and physical health.

A total of 54.5 % (n=85) responded to have experienced hair loss after moving to Georgia (p=0.04) that is after starting medical school (Figure 6). This can be primarily due to sudden weather changes and lifestyle changes.

Academic year	Experiencing Hair loss	No Hair loss	Maybe	
1	4	7	2	
2	11	7	10	
3	14	9	2	p=0.04
4	23	12	4	
5	26	8	6	
6	7	1	3	

Fig. 6. Experiencing hair loss after moving to Georgia.

Stress and internal causes -

54.5 % (n=85) responded that they think stress is the cause of their hair loss (Figure 7). 10.9 % (n=17) responded to be dealing with vitamin d deficiency, 10.3 % (n=16) responded to be dealing with iron deficiency, 7.1 % (n=11) of female participants responded to be dealing with Polycystic ovary syndrome (PCOS). Several respondents also stated to be dealing with biotin deficiency, zinc deficiency folate deficiency, and diabetes (Figure 8).

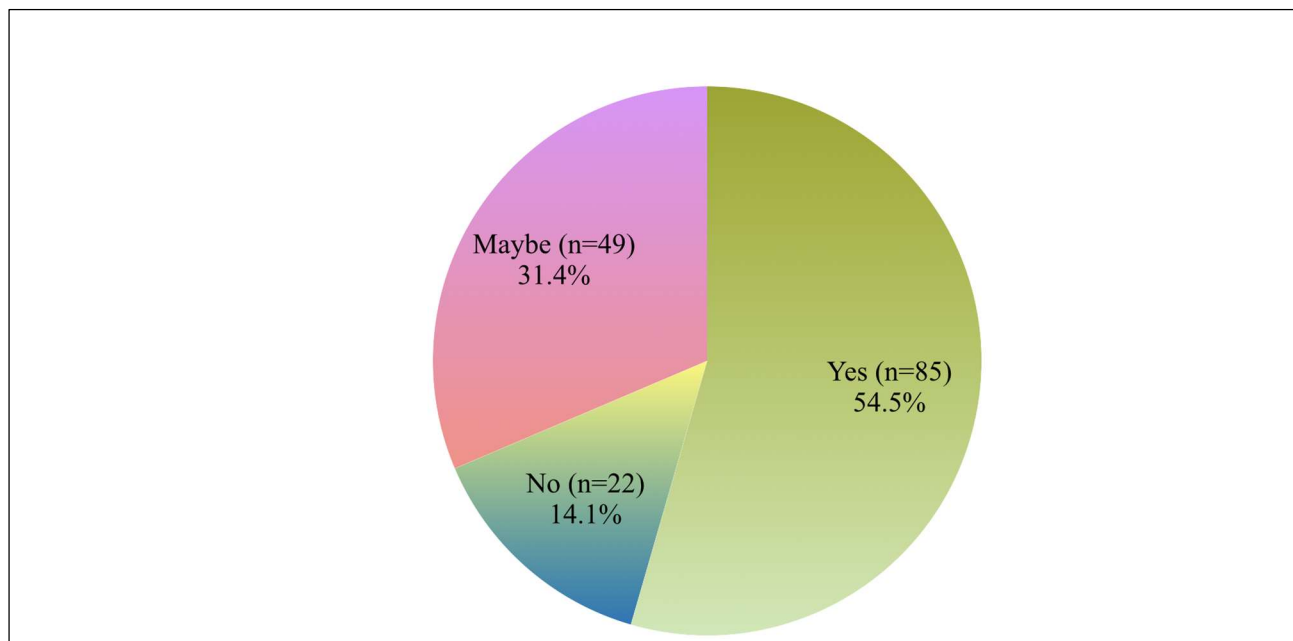


Fig. 7. Hair loss due to stress.

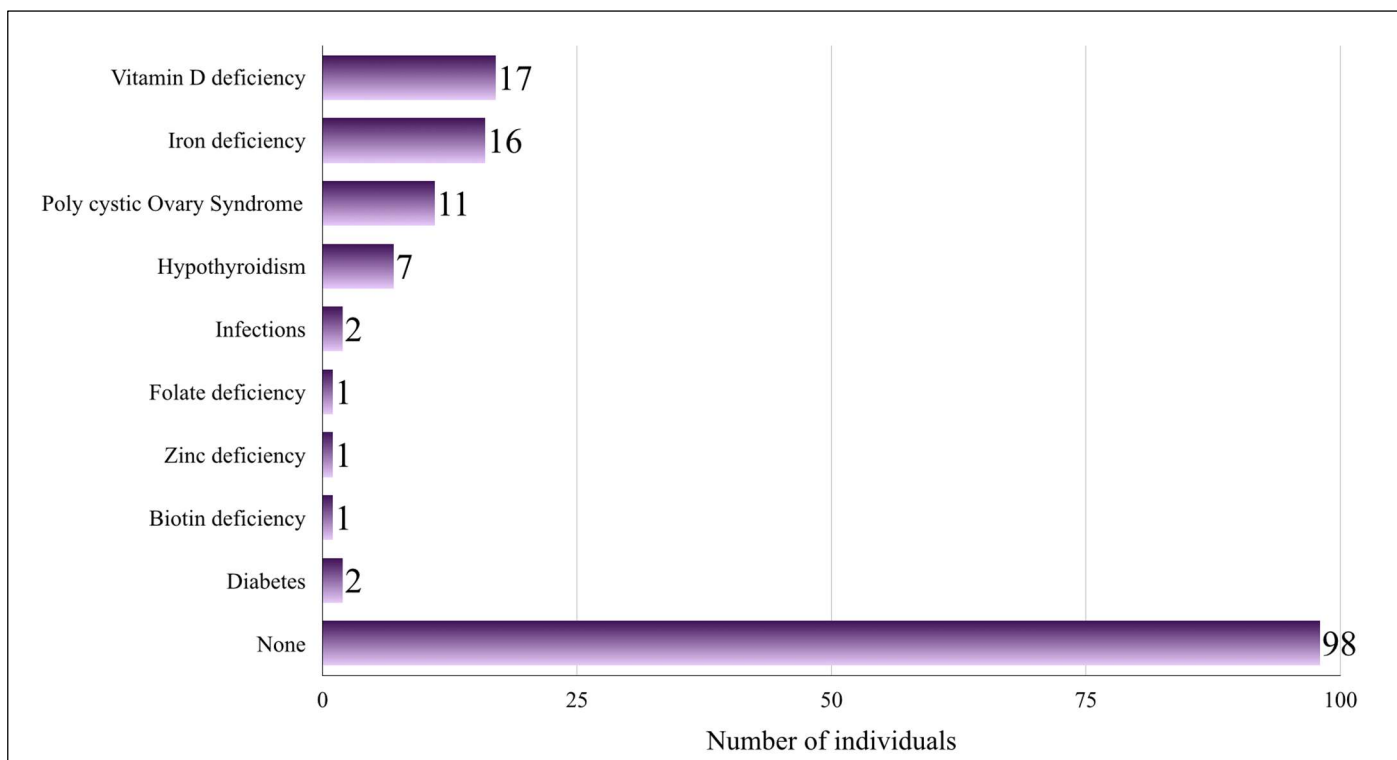


Fig. 8. Deficiencies and diseases in participants.

76.3 % (n=119) stated that they are concerned that they might be losing more hair in the future (Figure 9) only 34 % (n=53) of all the respondents stated that they use hair care products available in Georgia (Figure 10).

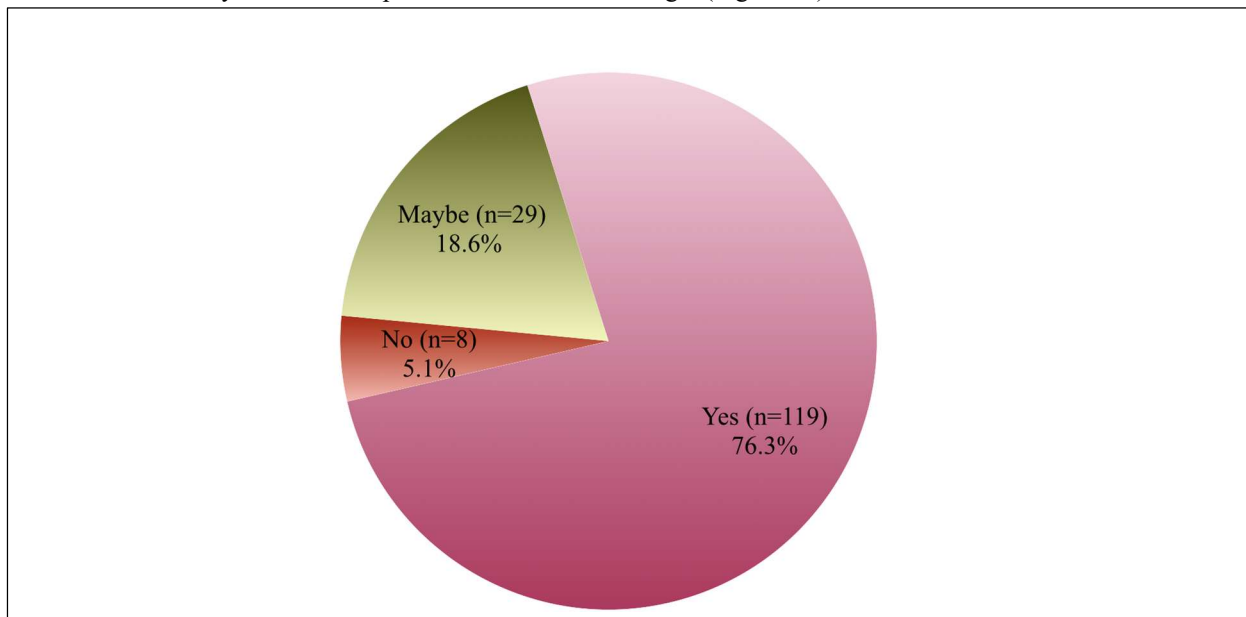


Fig. 9. Participants concerned losing more hair in future.

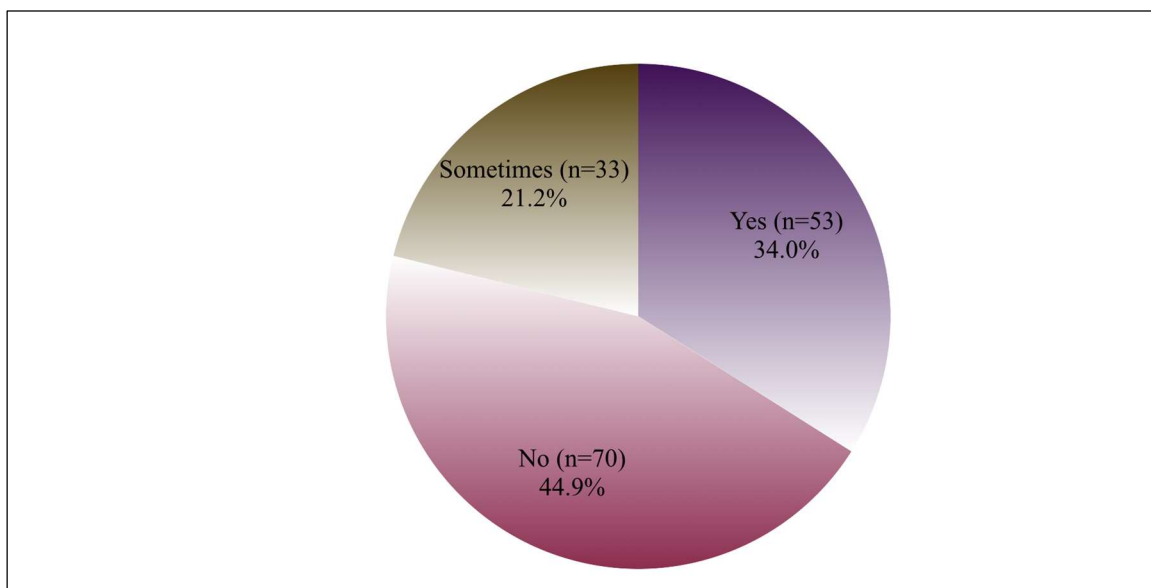


Fig. 10. Participants using hair care products available in Georgia.

57.1 % (n=89) stated that they are taking several manageable measures to control hair loss and 71.2 % (n=111) believe that with proper treatment and manageable steps they can control their hair loss, but surprisingly 92.3 % (n=144) of respondents dealing with hair loss are not undergoing any treatments to manage and control hair loss (Figure 11).

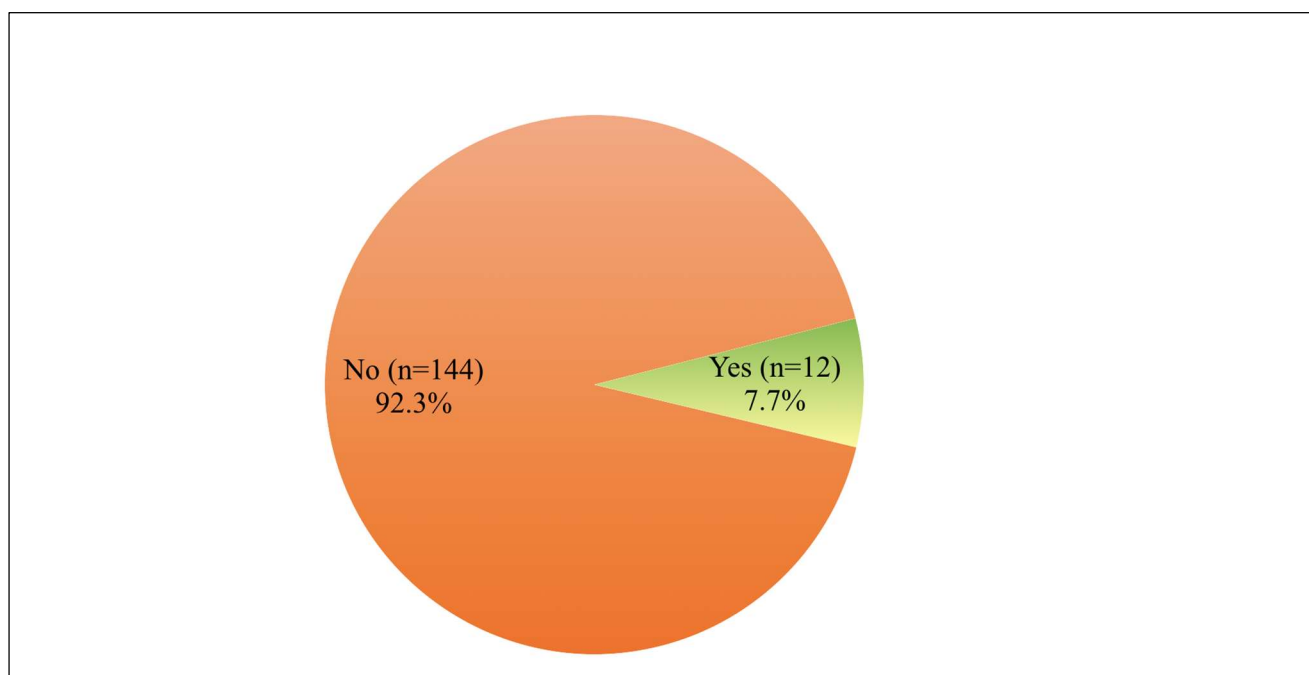


Fig. 11. Participants undergoing any treatments to manage and control hair loss.

IV. DISCUSSION

Hair is a protein filament that is one of the charismatic features for humans and is also an indicator of good health. Hair plays a prominent role especially in individuals in their early twenties. As our lives have become more fast-paced and overstretched health has taken a backseat, especially in those who just started adulthood. And life is extremely disquiet in medical students, more so in the foreign in medical students [8].

This survey aims to study if foreign medical students deals with progressive hair loss after moving out of their home country and if extreme stress, nutrient deficiencies, internal diseases, hair care products are contributing factors and also if the current pandemic has altered their condition. This self-designed survey was distributed to all foreign students studying at Tbilisi State Medical University. A total of 191 students filled the questionnaire.

It is quite surprising to see 54.5 % (n=85) students experiencing progression in hair loss after moving to Georgia ($p=0.04$), from the first year of their course, that is students as young as 17 years of age. Hair loss is noticed to be a major problem among students of all academic years of medicine and most common among the 6th year students (Figure 12).

Academic Year	Total participants(n)	Participants experiencing hair loss	% of hair loss	
1	16	13	81.25	
2	34	28	82.35	
3	32	25	78.13	$p=0.0127$
4	47	39	82.98	
5	49	40	81.63	
6	13	11	84.62	

Fig. 12. Hair loss intensity according to academic year.

As many students experienced hair loss after moving abroad to attend their courses, it can be the impetus to other factors such as stress and internal conditions. Micronutrients are important for healthy hair structure and hair growth. Studies have shown that nutritional deficiencies can lead to hair loss [5], [6], [9], [10].

Stress is known to contribute to inflammation that can result in hair loss more so at periods of excessive stress [4], [8]. This stress when combined with nutritional deficiencies such as vitamin D, folate, zinc, biotin, iron, and internal diseases like diabetes, PCOS and hypothyroidism can accelerate hair loss which can be studied through this survey as well. The current circumstances with the covid-19 pandemic has made the situation worse in certain individuals already dealing with hair loss. 33.3 % (n=52) stated to notice alteration in hair loss intensity amid pandemic, which is due to added crisis like constant tension of lack of practical exposures mostly among clinical year students due to restrictions and online mode of conducting classes.

Despite the optimism that their hair loss can be controlled and managed, it is interesting to notice that majority of the students are not undergoing any treatment.

This survey brings forth that foreign medical students are more prone to experience hair loss due to their complex lifestyle which is often hectic.

The limitations of this study include undisclosed ethnicity of the students, type of hair loss, genetic predisposing factors to hair loss, hair care products used, fewer male participants, and kind of management measures are taken by the students.

V. CONCLUSION

Hair loss can be multifactorial with contributors such as genetic predisposition, pathological states, stress, pharmacotherapy, weather, and inappropriate hair care practices. Data from this survey shows that these factors like stress and nutritional deficiencies are indeed a few contributors to hair loss experienced by foreign medical students. 81.7 % (n=156) belonging to age groups 17 to 25 years are experiencing hair loss ($p=0.0127$). These existing factors in addition to new confusing and uncertain atmosphere in student's life amid the COVID-19 pandemic has also played a role in altering the intensity of hair loss as seen in 33.3 % (n=52) of students. It is also important to note that 62.8 % (n=98) students stated not to suffer from any diseases and deficiencies yet, experiencing progressive hair loss after moving to Georgia ($p=0.04$). Therefore, factors like adapting to new geographical area and lifestyle changes play an important role in hair loss condition.

Though optimistic 71.2 % (n=111) that hair loss can be prevented, students have also shown concern that they might experience more hair loss in the future 76.3 % (n=199). Despite this concern, 92.3 % (n=144) of students responded that they are not undergoing any treatment to control hair loss. With the right precautions and the treatment took under the supervision of a professional such as an esthetician and dermatologist hair loss progressive hair loss can be prevented and controlled at a young age.

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