

## Hair loss among Saudi Females, Taif University, Taif, Saudi Arabia

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### ABSTRACT

**Background:** the female pattern hair loss is the most common cause of hair loss in female, which is androgenic pattern, medical treatment such as anti-androgenic therapy and topical preparation may simply arrest progression of female pattern hair loss or in some women stimulate partial growth of hair, but the response is slow. This study aimed to determine the most common causes of hair loss among female with regard to the age, the effect of some drugs, balanced diet, average amount of hair loss per day.

**Objectives:** this study aimed to determine the most common causes of hair loss among Saudi females.

**Materials and method:** this was a cross sectional study of the women aged 20-50 years designed in a questionnaire form involved series of questions with multiple choices answers. It was conducted in Saudi Arabia in October 2017. The data entry were done by using Microsoft Excel, while the analysis was done by using SPSS version 23 and we used it in test correlation coefficient Spearman with measuring the mean value for all questions. **Results:** data were analyzed via using SPSS program, version 23 and we used it in test correlation Coefficient Spearman between Q1 AND Q9=0.146 week positive and p-value=.087 >0.05 we didn't reject the null hypothesis. Correlation Coefficient Spearman Q23 and Q29=.008 no relation and p-value=0.927>0.05 we didn't reject the null hypothesis. In Q3 the mean was =6.83 and Q7; the mean was =2.50. **Conclusion:** in KSA we found the unbalanced diet to be the most effective factor that leads to hair loss among out sample size. In the present study we need to educate the population about the importance of balanced diet for maintaining of healthy hair and skin.

**Keywords:** female pattern hair loss, causes, diet, risk factor.

### INTRODUCTION

Telogen effluvium is a non-scarring alopecia described as a widespread shedding of telogen club hair from the scalp. Most of the cases initiate the symptoms between 8–12 weeks after the exposure of any trigger events, for examples: pregnancy, major sickness or after a complicated surgery, most of the cases improved within 3–6 months. And its diagnosis is often retrospective diagnosis <sup>(1)</sup>.

Hair shedding is, therefore, a common consequence of the normal hair cycle. The amount of hairs that are shed depends on several internal and external factors and the conscious perception of hair shedding can vary by individual. It is logical to think that the amount of shedding should also depend on the total hair density and that women with thin hair and reduced hair density, as for instance women with advanced female pattern hair loss (FPHL), shed less than women with early FPHL or women with normal hair density, whether or not active hair loss is taking place. However, there are no specific studies on hair shedding in women with severe FPHL. Hair shedding could be normal or abnormal. Most of the women think that the normal amount of hair shedding is abnormal

which became now the major complains in the clinics, sometimes it is related directly with the

advanced age which led to create a lot of fabrications for the cultivation of hair or shampoos and creams. On the other hand, the abnormal shedding may be due to serious diseases like: FPHL, acute and chronic telogen effluvium, alopecia areata, anagen effluvium, and cicatricial alopecias <sup>(2,5)</sup>. The term FPHL is preferred to androgenetic alopecia as the majority of women with FPHL do not have increased levels of male hormones, nor other signs of increased androgen effect, and do not respond to anti-androgens with dramatic hair regrowth <sup>(6)</sup>. Female pattern hair loss (FPHL), characterized by a diffused reduction in hair thickness, is the most common cause of hair loss in women and affects >50% of women at the age of 80 <sup>(7)</sup>. Furthermore, an epidemiological survey in northern China suggested that the incidence was 6.0% in females, lower than that in Western countries <sup>(8)</sup>.

However, due to the large population in China, the number of women with FPHL in China is high. Although it is a mild dermatological disorder, psychologists and dermatologists have observed that even clinically imperceptible hair loss is capable of damaging the quality of life

(QoL) of patients due to the loss of self-image and diminished self-esteem<sup>(9,10)</sup>. Women with hair loss have reported experiencing adverse psychosocial reactions, including irritability, anger, anxiety and depression, due to the significant sexual and social functions of the appearance of their hair<sup>(11,14)</sup>.

**RATIONALE**

This paper seeks to implement the development of more effective way of balanced diet for maintaining healthy hair and skin programs for Saudi females.

**Study design**

This was a cross sectional study of the women aged 20-50 years designed in a questionnaire form and involved a series of questions with multiple choices answers. It was conducted in Saudi Arabia in three-weeks period in October 2017.

**Inclusion criteria**

All the Saudi female aged from 20-50 years.

**Exclusion criteria**

We excluded 10 subjects for refusal to participate and missing data.

**Data analysis**

The data entry was done by using Microsoft Excel, while the analysis was done by using SPSS version 23 and we used test correlation coefficient Spearman with measuring the mean value for all questions because we wanted to know the effect of hair loss.

**Ethical consideration**

Before conduction of the study, all necessary approvals were obtained from **Taif University**.

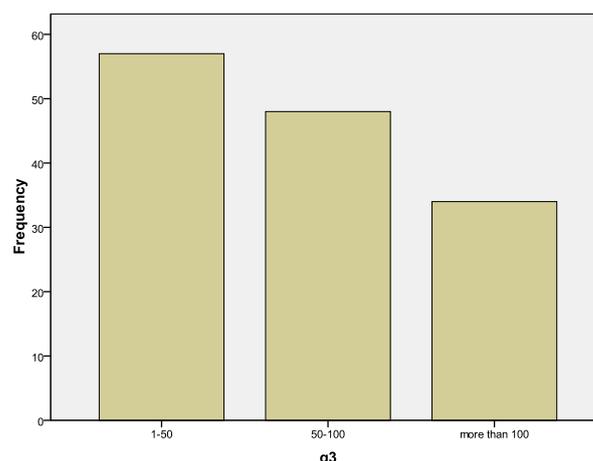
**RESULTS**

Data were analyzed via using SPSS program, version 23 and we used it in test correlation Coefficient Spearman between Q1 AND Q9=0.146 week positive and p-value=.087 >0.05 we don't reject the null hypothesis.

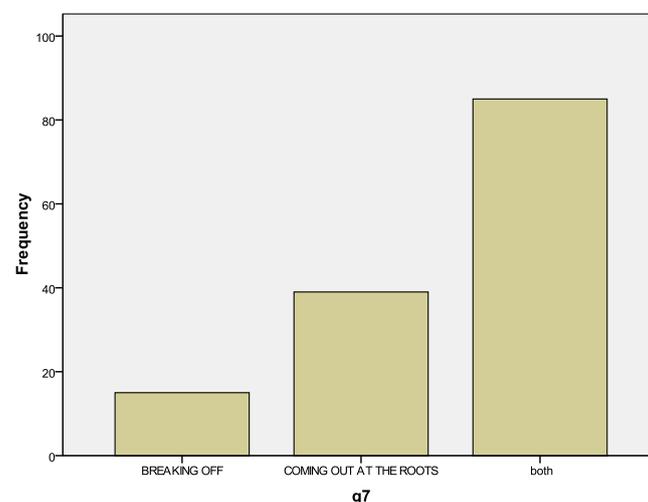
Correlation Coefficient Spearman Q23 and Q29=.008 no relation and p-value=0.927>0.05 .

We didn't reject the null hypothesis. In Q3 the mean was =6.83 and Q7 : the mean was =2.50.

**Unbalanced diet was found to be the most effective factor that led to hair loss among out sample size.**



**Figure 1: in Q3 the mean was =6.83**



**Figure 2: in Q7 the mean was =2.50**

**DISCUSSION**

FPHL has been defined as nonscarring progressive miniaturization of the hair follicle and subsequent reduction of the number of hairs, usually with characteristic pattern distribution especially in the central, frontal and parietal scalp regions that occurs in genetically predisposed women. The underlying path physiology remains unclear, but there was evidence that genetic, hormonal and possibly environmental factors are involved<sup>(16)</sup>.

Androgenetic alopecia has possible association with altered androgen metabolism and familial occurrence<sup>(16)</sup>. Most prevalence age related of hair loss among female, association between some types of drugs use and hair loss and the role of family history in FPHL. FPHL is the most common cause of alopecia in women. It was once estimated that 21 million have some degree of FPHL<sup>(15)</sup>

The frequency of FPHL varies among population groups and increases with age <sup>(16)</sup>. However, comparison between prevalence studies is hampered by the lack of universally accepted criteria for the diagnostic definition of the disease <sup>[16]</sup>. FPHL can appear at any time before or after the onset of puberty this incidence is increases with advancing age <sup>(15)</sup>. Some studies showed incidences of 12% in females around 30 years old and of 30-40% in the female population between 60 and 69 years old <sup>(18,19)</sup>. A study showed that 210 (45%) were diagnosed with FPHL out of four hundred and sixty-three new patients with alopecia were seen in the hair clinic. The mean age of the patients was 45.5 years. The youngest individual was 8 years old and the oldest was 86 years old. About 90 patients were above the age of 50, 76 were between the age of 30 and 40, and 44 were under the age of 30. The average time from the onset of hair loss to seeing a hair specialist was 4.1 years <sup>(15)</sup>.

In the current study, the incidence of 75.8% was reported in female around 20-30 years old, 15.7% were between 30-40 years old whereas 8.5% were between 40-50 years old. FPHL develops at any age. The earlier it presents the more intense the clinical picture tends to be <sup>(15)</sup>.

In 2001, a US study conducted with 1,008 Caucasoid women revealed 3% prevalence in the third decade of life. Prevalence showed a gradual increase with age, reaching 32% in the ninth decade of life. Overall prevalence was 19%.18 in 2001 <sup>(18)</sup>.

A study conducted in England with 377 patients showed that 6% prevalence among women under 50 years of age. The highest prevalence was found among women over 70 years of age 38%.19 <sup>(19)</sup>.

An Australian study conducted with 717 women found 13% prevalence in the third decade of life and 54% prevalence in the eighth decade of life. Overall prevalence was 32%.20 <sup>(20)</sup> however, a study conducted with 4601 Korean women in 2001 found an overall prevalence of 5.6% and progressively higher frequencies with increasing age <sup>(21)</sup>. A similar prevalence rates was achieved on Chinese women. In 2010, a population study involved 8446 <sup>(22)</sup>.

A study conducted in Taiwan with 26,226 women showed lower overall prevalence of FPHL in Caucasoids. However, FPHL prevalence in Caucasoid women was still higher than in Korean or Chinese women.23 <sup>(16)</sup>. However, there are no published data over the prevalence of FPHL in African women <sup>(23)</sup>.

Pathogenesis of hair loss is not completely understood but nutritional deficiencies are implicating on it. With women with hair loss iron deficiency is noted most commonly. This observation is supported by the results of **Dinesh et al.** <sup>(23)</sup>. The study also showed that deficient transferrin saturation and ferritin levels are more in patients with TE and FPHL. Thus, iron deficiencies noted here may actually be related to gender rather than the type of hair loss. We described that patients showed 71% had ferritin level above 30 µg/L. (normal range: 15–180 µg/L). Our results demonstrated that 45.1%, of women had history of anemia or low iron and 54.9%, denied any history of anemia or low iron.

### Family history

Female-pattern hair loss has a strong genetic predisposition, with a polygenic inheritance from either or both parents <sup>(11)</sup>. A family history was recorded in 178 of 210 patients with FPHL (85%). Overall, 91 of the 178 (51%) patients reported a family history of AGA in paternal relatives, 35 (20%) in maternal relatives, and 42 (24%) in both sides of the family. Thirty, (14%) patients denied any family history of AGA, ten patients reported AGA only in their siblings, and two patients were uncertain of the history of AGA in the family <sup>(15)</sup>.

Another study found that patients with FPHL often report family members affected by the disease (40-54%), especially in cases with early clinical presentation (<40 years) <sup>(19)</sup>. The present study showed that 35.9% reported positive family history in her siblings, 34% recorded positive family history in both parent, 29.5% denied any history of FPHL or thing of hair in family, and only 0.6 of women present without notable family history

Family segregation is not yet fully understood, however, the high prevalence of FPHL and the fact that FPHL manifests with varying degrees of intensity and has its onset at different ages, suggested a polygenic pattern with incomplete penetrance <sup>(17)</sup>.

An external factor such as testosterone levels, psychological stress, hypertension, diabetes mellitus, smoking, multiple marriages, lack of photoprotection, higher income and little physical activity Besides genetics, may also be important for the development of FPHL. However, the exact role of these factors in the causal model of FPHL still need be determined <sup>(20)</sup>.

### CONCLUSION

Knowledge among Saudi female was good, although there was some misconception. In KSA

we found the unbalanced diet to be the most effective factor that leads to hair loss among our sample size. In the present study we need to educate the population about the importance of balanced diet for maintaining of healthy hair and skin.

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