Original Research Article

Assessment of quality of life in patients with female pattern hair loss in a tertiary care hospital in India

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ABSTRACT

Background: Female pattern hair loss (FPHL) is the most common cause of hair loss in women. 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.
Methods: After obtaining consent from patients 66 females filling in inclusion criteria were selected for study. Data was collected from OPD case papers once and a fifteen-minute interview regarding the illness and symptoms was conducted as per the questionnaires (Hairdex, VAS, DLQI) to evaluate the QoL.
Results: The QoL subscales results showed the younger age group (≤30 years) was more affected in all Hairdex subscales. They fared significantly poorly with higher scores than older patients (>30 years) as far as symptom score and stigmatization were concerned (p<0.05). Even DLQI scores was highest in patients less than 20 years of age. Mean dermatology life quality index (DQLI) score of younger subjects was significantly higher than older subjects (p<0.05).
Conclusions: Our study showed that there is statistically significant decrease in QoL in patients with FPHL more so in younger patients. Younger patients seem to be more stigmatized, have poor functioning and emotional stability.

Keywords: FPHL, Androgenetic alopecia, QoL

INTRODUCTION

Women's hair is referred to as their 'crowning glory' and remains as a symbol of femininity even today. However, fewer than 45% of women go through life with a full head of hair. Psychologists and dermatologists have observed that even clinically imperceptible hair loss in general is capable of damaging the QoL of patients due to the loss of self-image and diminished self-esteem.[1] A study has shown that 52% of women were very-to-extremely upset by their hair loss, compared with 28% of men.[2] FPHL also known as female androgenetic alopecia is a common cause of hair loss in women characterized by diffuse reduction in hair thickness and is androgen dependent with a genetic predisposition. Although there are many studies on QoL of males with androgenetic alopecia there are very few studies focusing the same on women with FPHL especially in an Indian context. FPHL may begin at any age following puberty and it is widely acclaimed that the prevalence increases post-menopause with a possible hormonal influence.[3] In community-based study from China, prevalence of FPHL was 6.0% across all age

groups ranging from 1.3% in age group of 18-29 years, increasing steadily with age to 10.3% in 7th decade and 11.8% thereafter; with positive family history in 19.2%.[4] Overall, prevalence of mid-frontal hair loss increased with age and affected 57% of women aged 80 years and above.[5] No concrete data are available from Indian subcontinent.[6]

There are different clinical patterns and classifications of FPHL, knowledge of which facilitates patient management and research. Patients with FPHL uncommonly report symptoms of itching, burning, or pain of scalp; however, presence of inflammation (particularly around hair follicle ostia), scaling, inflammatory papules or pustules, fibrosis with loss of follicular ostia, and/or broken, fragile hairs should prompt a workup to rule out scarring-type alopecia.[7]

A thorough history, clinical examination, hair loss evaluation tests, dermoscopy, and scalp biopsy can help in establishing diagnosis. Various biochemical tests may be needed in patients with hyperandrogenism. Treatment includes medical and surgical modalities. Topical minoxidil is still considered first line of treatment.[8]

While many studies have investigated the epidemiology and clinical features of FPHL, very few studies have focused on its impact on QoL and only a few publications have assessed QoL in alopecia patients using the Hairdex score. According to Schmidt et al who evaluated 50 female patients with diffuse alopecia and AGA by Hairdex, diffuse hair loss had a negative impact on functioning, emotion, self-confidence, and stigmatization.[2] One of the studies conducted in China investigated 125 FPHL patients with a total DLQI score of 9.62±5.92, which was close to 10 (>10 indicates a very severe impact).[3] This value was higher than that in a previous study, which reported a value of 5.74±6.14 in male patients; however, the value is similar to the score for decubitus, while exceeding the scores for atopic dermatitis and psoriasis.[4] Collective evidence has suggested that FPHL impairs the QoL of female patients to the same extent as certain lifelong skin disorders such as psoriasis. Studies by Cash et al and van der Donk et al reported that those seeking treatment for FPHL experienced social anxiety disorder more severely than in male patients.[2,5] Evidence has suggested that patients with hair loss experience significantly impaired QoL, however, few studies have focused on women with FPHL. The current study presents instructive and meaningful information to dermatologists and hair experts with regard to the benefits of integrating psychological factors of a patient into their clinical treatment.

METHODS

Study design

Cross sectional study, observational questionnaire-based study design was used.

Study site

Outpatient department of dermatology of HBTMC and Dr. R. N. Cooper hospital, Juhu, Mumbai, Maharashtra, India.

Study duration

Study conducted for two months (February 2021 to April 2021).

Source data

Data collected from OPD case papers and approximately 15-minute interview with the patient.

Sample size

Sample size was calculated considering total patients visiting dermatology OPD over a duration of 2 months. Patient load of FPHL in dermatology OPD was 8 patients per week. Sample size of 66 patients was calculated using 95% confidence level and 5% confidence interval as per sample size calculator.

Inclusion criteria

Females between 18 to 60 years of age diagnosed with FPHL by the dermatologist were included in study.

Exclusion criteria

Females who are pregnant or lactating, who are on drugs causing hair loss, who have undergone chemotherapy recently and with concomitant medical/surgical illness were excluded.

Study procedure

Permission for conducting study was obtained from head of department of dermatology at HBTMC and Dr. R.N. Cooper hospital and the institutional ethics committee (IEC).

The 66 female patients fulfilling the inclusion criteria were selected and enrolled in the study after obtaining their written informed consent.

Data was collected from OPD case papers once and a fifteen-minute interview regarding the illness and symptoms was conducted as per the questionnaire to evaluate the QoL.

Patient demographic characteristics: Patient initials, age, educational level, marital status were noted.

Occupation and disease characteristics: Diagnosis, duration and severity were noted.

Questionnaires

Dermatology life quality index (modified DLQI):[1] The modified DLQI consists of ten questions with four alternative responses with corresponding scores of 0, 1, 2 and 3 respectively. The total score ranges between 0-30 where a higher score indicates lower QoL.

Visual analog scale (VAS): The VAS is a simple tool for measuring the satisfaction of patients regarding the state of their hair loss and the effect of treatment. The patient's evaluation will be scored from 0(completely dissatisfied) to 100(completely satisfied).

Hairdex:[12] Hairdex is an instrument developed to measure QoL in patients with disorders of hair and scalp. Scale includes questions under five categories: a) emotions; b) functioning; c) symptoms; d) self-assurance and stigmatization.[13] The modified-Hairdex questionnaire includes 48 items and was adapted and translated from the validated German Hairdex.[2] Patients will respond to each question on a scale from 0-4. Higher score indicates lower QoL.

Statistical analysis

Data was analyzed using descriptive statistics. Categorical data was given as number and percentages. Continuous data was presented as mean (±SD). Fisher's exact test was applied. P<0.05 considered as significant.

RESULTS

A total of 66 subjects with mean age 34.8 (±12.3) years were enrolled in the study. Table 1 shows age distribution of study participants.

Table 1: Age distribution of study subjects.

Age group (in years)	N (%)
≤20	8 (12.1)
21-30	20 (30.3)
31-40	19 (28.8)
41-50	10 (15.2)
>50	9 (13.6)

The 30.3% subjects were between 21-30 years of age while 28.8% were between 31-40 years. Mean duration of alopecia was 2.4 (±2.3) years based on Table 2.

Table 2: Duration of alopecia.

Duration	N (%)
<6 months	10 (15.1)
6-12 months	21 (31.9)
>12 months	35 (53)

Table 3 shows distribution of study subjects based on socioeconomic status which was done using modified B.

G. Prasad classification. A total of 24.2% subjects belonged to social class IV while 21.2% each belonged to social class I and V. 69.7% subjects were married while 30.3% were unmarried.

Table 3: Distribution of study subjects based on socioeconomic status.

Social class	N (%)
I	14 (21.2)
II	11 (16.7)
III	11 (16.7)
IV	16 (24.2)
V	14 (21.2)

Table 4 shows distribution of study subjects based on Hairdex score. QoL subscales results showed younger age group (≤30 years) more affected in all Hairdex subscales (Table 5). They fared significantly poorly with higher scores than older patients (>30 years) as far as symptom score and stigmatization were concerned (p<0.05)
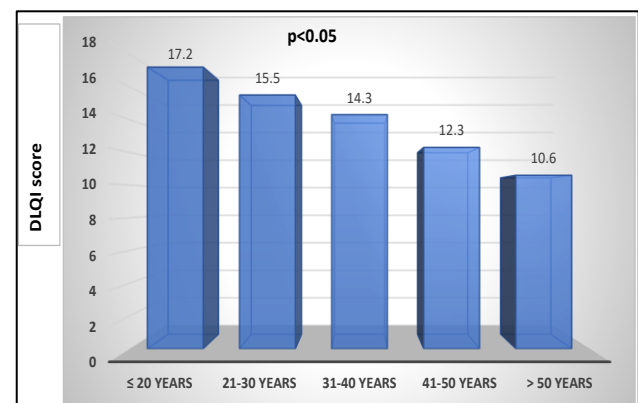

Figure 1: DQLI according to age groups.

DQLI score differed significantly in subjects with different age groups (Figure 1: p<0.05) with highest score in subjects less than 20 years of age.
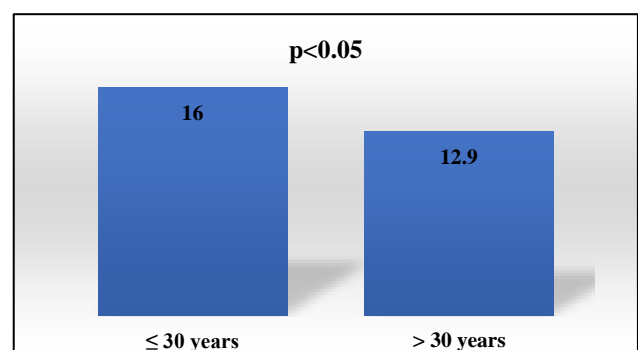

Figure 2: DQLI in age below and above 30 years.

The mean DQLI score of younger subjects was significantly higher than older subjects (Figure 2: p<0.05).

Table 4: Comparison of Hairdex score according to age groups.

Hairdex score	Age groups (in years)	Mean (±SD)	P value
Emotional score	≤20	30.1 (±6.4)	0.144
	21-30	29.2 (±6.4)	
	31-40	26.3 (±9.5)	
	41-50	25.5 (±9.3)	
	>50	23.3 (±10.6)	
Functional score	≤20	30 (±7.8)	0.103
	21-30	30.1 (±8.9)	
	31-40	27.8 (±9.2)	
	41-50	25.1 (±7.2)	
	>50	19.5 (±9.8)	
Symptom score	≤20	15.8 (±6.9)	0.023
	21-30	14.5 (±6.4)	
	31-40	14.9 (±5.9)	
	41-50	13.2 (±5.4)	
	>50	11.1 (±5.3)	
Self-assurance score	≤20	15.6 (±4.4)	0.397
	21-30	16.6 (±6.8)	
	31-40	15.8 (±3.3)	
	41-50	14.6 (±4.8)	
	>50	17.3 (±10.8)	
Stigmatization score	≤20	18.3 (±6.7)	0.008
	21-30	16.3 (±4.7)	
	31-40	14.6 (±7.1)	
	41-50	13.2 (±6.7)	
	>50	11.7 (±5.2)	

Table 5: Hairdex score in subjects with ≤ 30 years versus > 30 years.

Hairdex score	Age groups (in years)	N	Mean (±SD)	P value
Emotional score	≤ 30	28	27.1 (±8.5)	0.18
	>30	38	25.3 (±9.5)	
Functional score	≤ 30	28	27.2 (± 9.2)	0.29
	>30	38	25.1 (±9.2)	
Symptom score	≤ 30	28	14.1 (±6)	0.01
	>30	38	13.5 (±5.7)	
Self assurance score	≤ 30	28	16 (±6.1)	0.63
	>30	38	15.8 (±6.1)	
Stigmatization score	≤ 30	28	15 (±6.2)	0.001
	>30	38	13.6 (±6.5)	

Table 6: Comparison of QoL subscales according to marital status.

QoL subscales	Age groups	N	Mean (±SD)	P value
DLQI	Unmarried	20	17 (±5.3)	0.01
	Married	46	13 (±4.7)	
VAS	Unmarried	20	28.2 (±23.7)	0.38
	Married	46	20.1 (±20)	
Hairdex emotional score	Unmarried	20	29.4 (±7.3)	0.79
	Married	46	26.1(±8.9)	
Hairdex functional score	Unmarried	20	30.6 (±8.6)	0.2
	Married	46	25.7 (±9.1)	
Hairdex symptom score	Unmarried	20	14.7 (±6.5)	0.01
	Married	46	13.9 (±5.9)	
Hairdex self-assurance score	Unmarried	20	15.6 (±4.3)	0.35
	Married	46	16.3 (±6.7)	

QoL subscales	Age groups	N	Mean (±SD)	P value
Hairdex stigmatization score	Unmarried	20	17.4 (±5.7)	0.002
	Married	46	13.9 (±6.2)	

Table 7: Comparison of QoL subscales according to duration in years.

QoL subscales	Duration of alopecia	N	Mean (±SD)	P value
DLQI	Less than 1 year	18	12.2 (±4.6)	0.00
	More than 1 year	48	14.9 (±5.3)	
VAS	Less than 1 year	18	25.6 (±24.7)	0.00
	More than 1 year	48	21.4 (±20.1)	
Hairdex emotional score	Less than 1 year	18	24.6 (±10.2)	0.00
	More than 1 year	48	28 (±7.7)	
Hairdex functional score	Less than 1 year	18	24.2 (±9.4)	0.00
	More than 1 year	48	28.3 (±8.9)	
Hairdex symptom score	Less than 1 year	18	11.9 (±5.6)	0.00
	More than 1 year	48	14.9 (±6)	
Hairdex self-assurance score	Less than 1 year	18	17.3 (±6.7)	0.00
	More than 1 year	48	15.6 (±5.8)	
Hairdex stigmatization score	Less than 1 year	18	15.4 (±6.8)	
	More than 1 year	48	14.8 (±6.1)	

Table 6 shows the distribution of study subjects based on QoL subscales. The QoL subscales results showed unmarried women were more affected in all QoL subscales. Unmarried patients affected significantly than married patients as far as DLQI, Hairdex symptom score and Hairdex stigmatization were concerned (p<0.05)

Table 7 shows distribution of study subjects according to the duration of alopecia and the comparison of QoL subscales according to it. Duration in years was significantly associated with DLQI, VAS and all Hairdex subscales as p<0.05.

DISCUSSION

The present study was evaluated for QoL in patients with FPHL. Collective evidence has suggested that FPHL impairs the QoL of female patients to the same extent as lifelong skin disorders such as psoriasis.[1] There are many studies on QoL of males with androgenetic alopecia however there are no published studies of it in females especially in an Indian context. Two studies conducted by Sawant et al and Bade et al in tertiary care hospitals in India showed the impact of androgenetic alopecia on QoL of males.[12,14]

QoL due to hair loss was assessed by administration of Hairdex which has questions under five categories: emotions, functioning, self-assurance, stigmatization and symptoms. The QoL subscales results showed the younger age group (≤ 30 years) was more affected in all Hairdex subscales. They fared significantly poorly with higher scores than older patients (>30 years) as far as symptom score and stigmatization were concerned (p<0.05). Even DLQI scores was highest in patients less than 20 years of age. The mean DQLI score of younger

subjects were significantly higher than older subjects (p<0.05). Also, unmarried women were found to be more affected in all QoL subscales. Unmarried patients affected significantly than married patients as far as DLQI, Hairdex symptom score and Hairdex stigmatization were concerned (p<0.05). In a country like India, a lot of importance is given to physical appearance especially when finding suitors for marriage which could be a reason for the poor symptom score and more stigmatization in the unmarried and younger patients group as compared to married and older patients group who are more stable in their lives. Feeling of 'stigmatization' which includes 'feeling like an outsider' and being laughed at by others could be due to peer pressure in younger age groups and the need for social acceptance. The increasing influence of fashion and media can make thinning hair source of distress resulting in anxiety, depressed mood, isolation and embarrassment. Our findings are in contrast to the aforementioned studies in males in which younger patients seem to retain better QoL inspite of androgenetic alopecia.

The mean duration of alopecia was 2.4 (±2.3) years. Duration in years was also significantly associated with DLQI, VAS and all Hairdex subscales as p<0.05. Patients who had FPHL for more than 1 year had higher scores in DLQI and lower VAS score indicating poor QoL which correlates with a published study conducted in males which showed higher scores in individuals with longer duration of condition.[2] Our findings are also consistent with another study done in males by Cash et al who found greater degree of psychological impact of hair loss among younger men and those with earlier onset hairloss.[2]

The study provides valuable insights into psychological aspects related to FPHL. However, the observations of

our study should be interpreted in light of following limitations. One of the major limitations of our study was a small sample size. The patients in our study were from a single tertiary hospital in a metropolitan city of India so our results might not be generalized to other hospitals, community people or other tier two/smaller cities of India.

CONCLUSION

There is evidence to suggest that patients with hair loss experience a significantly impaired QoL, however, very few studies have focused on women with FPHL. Our study showed that there is statistically significant decrease in QoL in patients with FPHL more so in younger patients. Younger patients seem to be more stigmatized, have poor functioning and emotions stability. The psychological factors should be integrated into the clinical treatment by dermatologists. This could be done by spending sufficient time on consultation and answering any questions the patient may have regarding hair loss to ease their concerns and correct any impractical expectations regarding the improvement of hair quantity and time taken for regrowth. The additional burden of expenditure involved in treating this condition must also be considered by healthcare providers while prescribing treatment. There should be further multicentric large scale studies concerning the impact of FPHL on the QoL, self-esteem and self-image in the future.

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