



Review of quality of life studies in women with alopecia



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ABSTRACT

Alopecia is a dermatologic condition that affects the pilosebaceous unit in both men and women. In addition to a thorough medical history and physical examination, a host of diagnostic tools may be warranted to differentiate nonscarring and scarring alopecias. Female pattern hair loss represents the most common form of hair loss experienced by up to 40% of women by a certain age. Although alopecia is a benign disorder, even the most negligible amount of hair loss can be devastating to a patient's self-esteem, self-image, and overall quality of life. We present this comprehensive review of quality of life studies in women with alopecia to describe the multitude of feelings and emotions associated with the disorder and remind dermatologists of the psychological impact it can have on women.

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Alopecia is a dermatologic condition that affects the pilosebaceous unit in both men and women. There are several causes of alopecia; thus, a thorough medical history review, physical examination, laboratory evaluation, and scalp biopsy may be needed to establish a specific diagnosis. The most common cause of hair loss in women is female pattern hair loss (FPHL; also known as androgenetic alopecia; Fig. 1). The term FPHL is preferred because the relationship with androgens and inheritance is not clear in all women who have the phenotype of patterned, nonscarring, central scalp hair loss, especially given the early and late onset subtypes (Olsen, 2001). Alopecia occurs in approximately 12% of young female patients by 30 years of age and 30 to 40% of women by 60 to 69 years of age (Herskovitz and Tosti, 2013). The clinical picture may progress to greater severity in patients who present with alopecia at an earlier age compared with those whose hair loss begins later in life. The overall frequency and severity also increases with age (Olsen et al., 2003). Although alopecia is a benign disorder, even the most negligible amount of hair loss can be devastating to a patient's self-esteem, self-image, and overall quality of life.

Alopecia can be divided into two classifications: nonscarring and scarring (cicatricial). Common causes of nonscarring alopecia include FPHL, telogen effluvium, anagen effluvium, and alopecia areata (AA).

Scarring alopecias permanently destroy the pilosebaceous unit and are divided into primary and secondary causes. Primary scarring alopecias include lichen planopilaris (LPP), frontal fibrosing alopecia (FFA), central centrifugal cicatricial alopecia, chronic cutaneous lupus erythematosus (DLE), dissecting cellulitis, folliculitis decalvans, tufted folliculitis, and pseudopelade of Brocq. Secondary scarring alopecias occur when the hair follicles become an innocent bystander as a result of an infiltrative process such as infection (dermatophytes), trauma (burns or radiation), inflammatory processes (sarcoidosis), or malignancy (Olsen et al., 2003).

FPHL represents the most common form of hair loss experienced by women (Cash, 1999; Cash et al., 1993). FPHL is a nonscarring (noncicatricial) form of hair loss that is characterized by either diffuse central thinning with the frontal hair line preserved, accentuation along the frontal scalp in a Christmas tree-like pattern given the shape of the alopecic patch (Olsen, 1999), or recession of the hairline along the bilateral temporal regions (similar to Hamilton-type classification; Cash et al., 1993; Hamilton, 1951; Herskovitz and Tosti, 2013; Katoulis et al., 2015; Zhuang et al., 2013).

Medical treatments including a topical minoxidil 2% solution or foam and topical minoxidil 5% solution or foam (Blume-Peytavi et al., 2007) are available over the counter and approved by the U.S. Food and Drug Administration (FDA) for the treatment of FPHL. Oral spironolactone (antiandrogen; Famenini et al., 2015) and oral finasteride (5- α reductase inhibitor) are other effective treatments for patients with FPHL but these therapies are not specifically approved for this indication (Kelly et al., 2016). Cosmetic treatments include low-

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level laser therapy (Afifi et al., 2017; Avci et al., 2014) with either the FDA-cleared LaserComb (Schweiger et al., 2010), the iGROW helmet device (21 lasers diodes and 30 LEDs, 655 nm red laser; Esmat et al., 2017), Capillus hair regrowth laser cap or Theradome, platelet-rich plasma (PRP) injections (supported by preliminary data but still experimental; Laird et al., 2017; Puig et al., 2016), and hair restoration (Callender et al., 2014; Kelly et al., 2016; Rogers, 2015).

Even though alopecia is not life threatening and considered cosmetic in many cases, the effects on patients' quality of life (QoL) are real. Throughout time, hair has evolved to not only represent beauty, youth, and health, it has also provided individuals with a sense of self-identity and self-esteem. To some individuals, hair may have a connection to a particular time period, ethnic group, social status, and even a sense of power. For women, hair portrays femininity and self-confidence. Williamson et al. (2001) demonstrated via the Dermatology Life Quality Index (DLQI) that the impact on QoL in patients with alopecia was equal to those with psoriasis. Although hair loss is considered a benign process, the loss has been shown to have a serious impact on individuals' self-esteem, psychological social experiences, and overall QoL (Cash, 1999; Katoulis et al., 2015). A variety of measures to assess the effects of hair loss on patients' lives are given in Table 1, which serves as a reference for all methods discussed in this article.

Over the years, more studies have investigated and quantified the impact of alopecia on QoL. One study assessed the QoL in 125 women with FPHL and the effectiveness of topical minoxidil to improve the patients' QoL (Zhuang et al., 2013). At the time of the initial visit, all 125 women completed the Visual Analogue Scale (VAS) to assess their perception of hair loss severity and response to treatment (range, 0–100; high score supports complete satisfaction) as well as the Dermatology Life Quality Index (DLQI) questionnaire (a 10-question, validated, dermatology-focused questionnaire) to assess the impact of the skin disease on their QoL (range, 0–30; low score equals low impact on QoL).

The initial VAS score to evaluate patients' perception of hair loss was 57.78 ± 18.06 . The initial DLQI score was 9.62 ± 5.92 (Zhuang et al., 2013). This was a clinically significant correlation in severity of hair loss regardless of the age and disease duration of patients. The group of patients with the greatest severity also had the highest DLQI score, which supports that FPHL has maximum impact on QoL, and the lowest VAS score, which is a reminder for dermatologists to consider both the objective rating and subjective satisfaction when assessing clinical severity.

After the 12-month follow-up visit, 31 women from the same study were assessed after they received topical minoxidil treatment. The VAS indices prior to and after topical minoxidil treatment were 50.81 ± 14.61 and 72.52 ± 12.79 , respectively, which shows an increase in satisfaction with the therapy. The DLQI scores prior to and after treatment were 8.94 ± 5.65 and 4.45 ± 3.36 , respectively, which were statistically significant. This study proved that treatment with topical minoxidil may improve the QoL in women with FPHL with regard to how they feel during their daily activities and leisure time (Zhuang et al., 2013).

Another study of 285 men and women with either FPHL (20.7%) or telogen effluvium (79.3%) found that 75% of women displayed signs of a personality disorder, relative to 10.3% of the population base in Italy (on the basis of the diagnostic criteria of the Diagnostic Statistical Manual Mental Disorders, Revised Third Edition [DSM-III-R]). Both the Personality Disorders Questionnaire-Revised (PDQ-R; a validated self-rated 152-item true/false questionnaire) and the 6-point Symptom Checklist-90 (SCL-90, measures psychopathologic response to alopecia with scores that range from 0 for not at all to 5 for very much) were used to assess for personality disorders (Fossati et al., 1993). In a follow-up study, 76.3% of 116 patients with FPHL self-reported a personality disorder that overwhelmingly

exceeded the population estimate (on the basis of both the PDQ-R and SCL-90 scales; Maffei et al., 1994).

In an initial study, van der Donk et al. (1991) compared 58 women with FPHL to women who sought treatment for other nonapparent dermatologic conditions and male patients with FPHL (using standardized psychological techniques via several self-reporting 5–6 point scales that assessed hair problems, dermatological complaints, self-esteem, and self-rated depression). The researchers found that women with FPHL experienced poor social adequacy and increased psychosocial problems, which they attributed to their hair loss, than patients in the comparable groups (van der Donk et al., 1991).

The same authors conducted a follow-up study that was composed of 58 women with FPHL who opted to participate in the psychological standardized interview portion of the study (Van Der Donk et al., 1994). The interview consisted of two parts. The first portion included open-ended questions on topics related to alopecia and the second portion consisted of close-ended questions about the participant's behavior and feelings in certain situations related to their hair loss. In 88% of the study participants, alopecia had a negative effect on their daily life, 50% experienced social problems, and 75% reported that their hair problems caused a negative self-esteem (Van Der Donk et al., 1994).

Cash et al. (1993) conducted a study of 60 men and 96 women with FPHL to assess the psychological impact of diagnosis within each group using a series of standardized inventories including the 13-item Social Desirability Scale that assesses the influence of defensive response sets, the 69-item Multidimensional Body-Self Relations Questionnaire that assesses body image attitudes, the 16-item Texas Social Behavior Inventory that assesses social self-esteem, the 24-item Levenson Locus of Control Scale, the 13-item Self-Consciousness Scale, two 10-item indices to assess life satisfaction, and the 15-item Impact of Event Scale that measures the past week's stressfulness of the condition for which the patient sought treatment. A total of 52% of women ranked their emotional stress due to FPHL as very-to-extremely upsetting. They also reported increased social anxiety, poorer self-esteem, a negative body image, and a sense of powerlessness because of their diagnosis (Cash, 1999).

Another case-controlled prospective study of 115 women with FPHL and 97 age-matched control patients found that even female sexual function was considerably compromised as a result of FPHL on the basis of a Turkish version of the Female Sexual Function Index that looks at six specific domains, including desire, arousal, lubrication, orgasm, satisfaction, and pain scores. A score of 2 was the lowest possible and 36 was the highest possible. A higher score indicates better function (Sancak et al., 2016).

For men, pattern hair loss may be the result of a normal phenomenon, but women believe just the opposite. Many authors have discussed that patients' reactions to their diagnosis have more to do with self-perception than the objective clinical course because of the aforementioned feelings and the effects FPHL has on women's self-image. At times, women use extraordinary measures to cope with and mask their diagnosis as well as feelings of being less attractive, including concealing thin areas with remaining scalp hair, covering thin areas with a hat, or using cosmetic products to camouflage the areas of hair loss (Cash, 1999). Patients may also avoid situations that can aggravate their distress, such as windy weather or brightly lit environments, to minimize bringing attention to themselves (Cash, 1999; Fossati et al., 1993). Compensatory measures such as men growing a beard, exercising to change one's physique, and buying expensive clothes are also steps taken with the hope of improving one's self-esteem (Famenini et al., 2015).

Several treatment options are available for patients with FPHL, including topical minoxidil (foam or solution; Blume-Peytavi et al., 2007), oral spironolactone (Famenini et al., 2015), oral finasteride

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