

Epidemiology of Dandruff, Scalp Pruritus and Associated Symptoms

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Dandruff, or pityriasis capitis, is the most common symptom of seborrhoeic dermatitis (1). Dandruff is usually defined as excessive flaking of the scalp. People reporting dandruff often have seborrhoeic dermatitis, but can also have other diseases, such as psoriasis or eczema. Although it is considered a very common condition, no published epidemiological study evaluating the frequency of dandruff could be found in the literature. Scalp pruritus is also frequent and is often associated with dandruff. The aim of this study was to evaluate the prevalence of dandruff, scalp pruritus, and other associated symptoms, in the French population.

MATERIAL AND METHODS

A survey was conducted by the Council Survey Analysis (CSA) Health poll institute on a sample of 1,703 people representative of the French population of age ≥ 15 years, who were recruited by the poll institute. Participants were interviewed by telephone and selected according to the national quota method (gender, age, occupation of the head of the family, geographical density and region). Interviews were double-checked by follow-up calls to 20% of the interviewees, and if this procedure revealed any abnormal finding in even a single questionnaire, all interviews conducted by the interviewer concerned were reassessed. No abnormal finding was observed. Participants responded to questions on dandruff, pruritus and other subjective symptoms (pain, prickling, burning and tightness), without being given definitions of these words. Medical history and socioeconomic data were also recorded. The response rate was 100%.

Quantitative variables were compared between groups by using a Student's *t*-test (for two groups) or using an analysis of variance (ANOVA) (for > 2 groups). If the conditions required for these tests were not met, non-parametric Wilcoxon and Kruskal-Wallis tests were performed. Qualitative variables were compared using a χ^2 or Fisher's exact test if conditions for application were not met. Statistical analyses were performed using the SAS software version 8.2 (SAS Institute, Cary, USA).

RESULTS

Of the 1,703 subjects, 16.6% reported excessive scalp flaking (20.7% of men and 12.8% of women). The prevalence of dandruff decreased with age: 21.6% in the age range 15–24 years, 19.7% in the age range 25–34 years, 17.4% in the age range 35–49 years, 14.3% in the age range 50–64 years, and 11.7% among people over 65 years old ($p < 0.01$). Itching, prickling, tightness and pain were significantly more frequent in people reporting dandruff (Table I). Itching was reported in more than half of those with dandruff and one-third of those with prickling, and was described as weak in 60.4% of subjects with dandruff, moderate in 28.3%,

Table I. Scalp symptoms among subjects who reported dandruff ($n = 282$) and those who did not ($n = 1421$)

Symptom	All subjects, %	Dandruff, %	No dandruff, %	<i>p</i> -value
Itching	21.49	51.06	15.62	<0.0001
Prickling	14.91	31.91	11.51	<0.0001
Tightness	4.46	8.51	3.56	<0.001
Pain	3.88	6.74	3.31	<0.01
Burning	2.35	4.26	1.97	0.02

and severe in 11.3%, without any significant difference between these patients and those with pruritus without dandruff. Patients with dandruff presented significantly more symptoms than those without dandruff: 49.3% (vs. 18.4%) reported one or two symptoms, and 8.9% (vs. 3.2%) reported ≥ 3 symptoms ($p < 0.0001$).

DISCUSSION

The prevalence of dandruff in the French population was high. No other study evaluating the prevalence of dandruff among adults could be identified. Some studies were performed on the prevalence of seborrhoeic dermatitis in adults, with the following results: 2.1% in France (2), 11.6% in the USA (only 2.8% clinically significant) (3). A British study showed an incidence of 54 per 100,000 population over the years 2001 to 2005 (4). In this study, the methodology used was similar to that used in our study, although the question assessed was about "red spots and flaking skin on the face" and not scalp lesions. Other studies from Australia and the USA were performed on preschool-aged children (5) and children under the age of 10 years (6), respectively. Dandruff was diagnosed in 18% of children under the age of 2 years and among 6% of children in the age range 2–10 years.

Dandruff is considered as very frequent, and appears to be more frequent among men than women and more frequent among young people than older people. However, this point should be confirmed. A study suggested that seborrhoeic dermatitis could be more frequent among elderly people, especially in case of dependency, but did not report specific data on dandruff (7).

The symptomatology subjective of dandruff is poorly described. Itching is sometimes described in reviews and is very frequent, thus it is important to be aware of this symptom in dandruff. Prickling is never cited as a symptom of dandruff, and this study is the first to highlight its high frequency.

Itching, prickling and, sometimes, additional, subjective symptoms are specific to a sensitive scalp (8).

Dandruff was initially considered as a possible manifestation of skin sensitivity (9). A recent study presented strong arguments for excluding dandruff from symptoms of scalp sensitivity (10), because a broad majority of subjects reporting scalp sensitivity did not report dandruff. In our study, patients with dandruff reported symptoms of scalp sensitivity more often than did those subjects without dandruff, although the direct association between these clinical manifestations remains to be demonstrated. Dandruff is the most common symptom of seborrhoeic dermatitis.

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