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Research Article

Epidemio-clinical Profile of Alopecia in Women in Kinshasa

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Abstract

Context: Alopecia is a major concern among women in sub-Saharan Africa. Unfortunately, data on this pathology are almost non-existent in the Democratic Republic of Congo.

Objective : To describe the epidemioclinical profile of alopecia in women in the city-province of Kinshasa

Methods: Cross-sectional study analyzing data collected from 100 women with alopecia frequenting open-air hair salons, during a period of 6 months. The parameters of interest were sociodemographic and clinical.

Results: The median age was 30.5 years (interquartile range of 22 years). Singles (50%), students (28%) and followers of revival churches were the most numerous (49%). The majority of women did not consume alcohol (76%) or tobacco (99%) and almost all were free of chronic diseases (96%). Half of the women had alopecia that had been evolving for more than 4 years (50%). Alopecia gradually set in in the majority of women (81%) and 86% of women had localized forms, with a preferential bitemporo-frontal topography (41%). Most women were unaware of the circumstances of the onset of their alopecia (55%) and traction alopecia was the most common clinical form (80%).

Conclusion: Traction alopecia is the prerogative of young women in Kinshasa. This survey highlights the importance for young women in our environment to allow adequate rest time between two hairstyles to avoid continuous tension on the same area of the scalp, to use soft styling accessories, to minimize the use of chemicals and heating devices on fragile hair.

Keywords: Alopecia; Women; Hair Salons; Kinshasa

Introduction

Alopecia is a loss of hair beyond the physiological threshold of renewal, which is not limited to the scalp and can occur on any part of the body [1]. It is a frequent sign in dermatology whose etiologies are multifactorial: traumatic, inflammatory, nutritional, infectious, iatrogenic, genetic or even psychological.

Worldwide, 2% of the world's population is estimated to suffer from alopecia [2].

Clinically, alopecia is classified into two main groups: scarring and non-scarring alopecia, the latter being the most common [1]. As for the clinical forms, they depend on the different etiologies. The clinical forms that women of African descent develop in particular have their origin in the physical, chemical and mechanical trauma that frizzy hair must undergo in order to shape it. These are traction alopecia, central centrifugal vertex scarring alopecia and acquired trichorrhexia nodosa [3,4].

The techniques that promote traumatic alopecia in women of African descent are: straightening, braids on relaxed hair, shampoos, dyes, the use of heat, the addition of strands in the braids, the low frequency of hydration, the short rest period between two hairstyles. Wearing traction hairstyles for more than two weeks, the pain felt after hairdressing increases the risk of alopecia. The persistence of using these practices aggravates alopecia [5-7].

Although not a life-threatening condition, alopecia can seriously impair quality of life, especially by inducing anxiety and reducing self-esteem in women. It could constitute a social handicap and cause significant physical suffering in those affected [8,9].

In Sub-Saharan Africa in general and in the Democratic Republic of Congo in particular, several factors argue in favor of a high prevalence of alopecia in women, including: media pressure, hair habits, social pressures, precariousness, use of hair care products of dubious quality, ... etc.

Unfortunately, data in sub-Saharan Africa is rather scarce and almost non-existent in our country, the Democratic Republic of Congo (DRC). However, in this sub-region, the share of the cosmetics market is very important and activities related to this sector constitute a strong potential for absorbing unemployment.

As women represent the majority of the Congolese population [10], it seemed appropriate to carry out this study in order to describe the epidemio-clinical profile of alopecia among women frequenting open-air hairdressing salons located within the confines of the large markets of the city province of Kinshasa.

Methods

Nature, setting and period of the study

This was a descriptive cross-sectional study carried out among women attending open-air hair salons in the city of Kinshasa during the period from April 2024 to September 2024. It was carried out in 20 open-air hairdressing salons located within the confines of 4 large markets in the city province of Kinshasa.

Sampling

This was a convenience sampling. Our target population has been grouped into 4 districts: Tshangu, Funa, Mont-Amba and Lukunga. For each district, we considered a large market: the Freedom Market for the Tshangu district, the Gambela market for the Funa district, the Kianza market for the Mont-Amba district and the Great Market commonly known as Zando for the Lukunga district. At each location, we chose 5 hair salons, which allowed us to accidentally pull the women who showed up for hair care at the selected hair salons.

Inclusion criteria

This study included any woman of Congolese origin, using hair care and/or various styling methods, with alopecia and consenting verbally or in writing (through parents or guardians for minors) to participate in the study.

Non-inclusion criteria

Women of non-Congolese origin who refused to participate in the study were not included.

Parameters of interest

Socio-demographic parameters

These were age, religion practiced, marital status, profession.

Clinical parameters

These included history (alcohol consumption, tobacco consumption, chronic disease), duration of alopecia, mode of onset, circumstances of onset, plaque count, size, location, distribution, associated inflammatory signs and clinical form.

Data collection

The data were collected by the investigator on a pre-established and previously tested data collection sheet. The form included a questionnaire to be administered to each participant and a part to transcribe the data relating to the physical examinations.

Operational and concept definitions

The following operational definitions were used for this study:

- **Woman with alopecia:** Any woman with hair loss
- **Profession:** This is the occupation, trade or any activity carried out by a woman, classified into 5 modalities: Pupils/ Student, unemployed, public sector employee, self-employed, without profession
- **Alcohol and tobacco use:** Qualitatively defined by presence or absence

Statistical analyses

Data processing and analysis were carried out using SPSS 27.0 software. and they are summarized in the form of tables. The statistical analyses were essentially descriptive.

Ethical considerations

This study has been approved by the Ethics Committee of the School of Public Health of the University of Kinshasa (Approval No.: ESP/CE/158/2024). Our investigation was carried out in strict compliance with the rules of ethics and deontology, while guaranteeing confidentiality.

Results

The analysis involved 100 women with alopecia. The median age was 30.5 years (22-year interquartile range). Table I summarizes the socio-demographic characteristics of the respondents.

Table I: Socio-demographic characteristics.

Variable	Number (n = 100)	Frequency (%)
Age		
13-22	19	19
23-32	35	35
33-42	15	15
≥ 43	31	31
Marital status		
Single	50	50
Married	42	42
Divorced	4	4
Widow	4	4
Religious affiliation		
Revival Church	49	49
Protestant	25	25
Catholic	24	24
Brahmanist	2	2
Occupation		
Students	28	28
Independent	26	26
Employees	19	19
Unemployed women	18	18
No profession	9	9
Tobacco consumption		
Yes	24	24
No	76	76
Alcohol consumption		
Yes	1	1
No	99	99

The age group of 23 to 32 was in the majority. Half of the women were single (50%) and the largest number attended school (28%). Nearly half (49%) belonged to revival churches.

The majority of women did not consume alcohol (76%) or tobacco (99%) and almost all (96%) were free of chronic diseases (Table II).

The data concerning the characteristics of alopecia are included in Table III below, which reveals that half of the women had alopecia older than 4 years (50%). Alopecia gradually set in in the majority of women (81%) and 86% of women had localized forms, with

Table II: Participants' backgrounds.

Variables	Workforce (n = 100)	Frequency (%)
Alcohol consumption		
Yes	24	24
No	76	76
Tobacco use		
Yes	1	1
No	99	99
Chronic illness		
Yes	4	4
No	96	96

Table III: Clinical features of alopecia.

Variable	Effective (n = 100)	Frequency (%)
Duration		
0-9 years	83	83
10-19 years	15	15
≥ 20 years	2	2
Distribution		
Localized	86	86
Released	14	14
Mode d'installation		
Brutal	19	19
Progressive	81	81
Etiology		
Trauma	41	41
Ignored	55	55
Menopause	1	1
Post partum	3	3
Topography		
Bitemporo-frontal	41	41
Bitemporal	17	17
Vertex	16	16
Bitemporofronto-atrial	4	4
Parietal	3	3
Thunderstorm	3	3
Front	2	2
Other	4	4
Inflammatory Signs		
Yes	29	29
No	71	71
Clinical forms		
Traction alopecia	80	80
Androgenic alopecia	12	12
Congenital alopecia	2	2
Effluvium telogène	2	2
A. Centrifugal scarring plant	2	2

a preferential bitemporo-frontal topography (41%). Most women were unaware of the circumstances of the onset of their alopecia (55%) and traction alopecia was the most common clinical form (80%).

Discussion

The objective of this study was to describe the epidemioclinical profile of alopecia in women in Kinshasa. The condition most often affects young women, particularly those under the age of 32, in school and single. Traction alopecia was the most common clinical type in this group.

Age data described a larger proportion of women in the 23 to 32 age group. This observation is in agreement with the results described by Sani., *et al*. [11] in Ibadan and Dégboé., *et al*. [12] in Cotonou. These authors found a more abundant population in the 20 to 29 and 25 to 40 age groups, respectively. This female segment of the working population is indeed very important in our country according to demographic studies [10]. However, this predominance could also be explained by the high activity in hair care in this age group.

As in a previous study in Burkina Faso [13], the present study found a high rate of female students in the group or children attending school. The young age of women could explain this predominance.

Half of the women were single in this study. This could be explained by the negative impact of this pathology on the physical and mental domains, as well as on the interhuman relationships of those affected. Indeed, these people may suffer from interpersonal and social stigma, which can have an influence on their quality of life. These different factors could limit access to marriage.

All women attended churches, and among these, revival churches were the preferred places. The profile of women's religious denominations differs greatly from that of the Congolese population in general, as reported by the recent Target study [14]. According to this study carried out in 2020, Catholics and Protestants remain in the majority in the DRC. From this point of view, our study has a selection bias, which could limit the extrapolation of our results.

About one in five women (24%) consumed alcohol during this survey. Excess alcohol dehydrates the body because it stimulates exudation. This can lead to drying out of the hair fibers which become dry and brittle. Nevertheless, it should be noted that the deterioration in hair quality does not manifest itself directly after a glass of alcohol. The impact results from excessive, abusive and regular alcohol consumption [15]. It can also be caused by the accumulation of other aggravating factors with alcohol, such as tobacco, the consumption of which was found in one participant.

Half of the women had alopecia lasting ≥ 4 years. This situation could not only be due to ignorance, but also to the problem of accessibility to health facilities in sub-Saharan Africa. These women most often start by treating their hair loss with locally made cosmetic formulations before thinking of consulting a dermatologist. This long duration could explain the great disparities observed in the number and size of plaques observed in these women.

Just over half of women (54%) did not know the origin of their hair loss. Niang., *et al*. [16], as well as Nnoruka [17] had made the same observation in their studies. It is therefore common to meet women who do not know the source of their alopecia and continue to adopt dangerous hair practices in sub-Saharan Africa.

The importance of trauma in this study is consistent with many surveys in sub-Saharan Africa [11,12,16,17]. The various treatments and hair styles used by women during this survey explain this predominance.

The predominant locations of alopecia were the temporal and frontal regions, results in agreement with Dlova., *et al*. [18] in South Africa and Callender., *et al*. [19] in a study conducted in women of African descent in the United States. Indeed, these areas are on the front line and repeatedly subjected to trauma, particularly in traction alopecia.

The majority of women in this study had localized alopecia, results that are at odds with those described by Niang., *et al*. [16] in Senegal and Nnoruka in Nigeria [17]. These authors found a greater number of women with diffuse alopecia. This difference could be explained by the types of study: only women admitted to hospitals

in the studies carried out in Senegal and Nigeria, in the community in our study. Women with diffuse alopecia will tend to go to the hospital because of the severity.

The prevalence of traction alopecia corroborates numerous studies carried out in African, Afro-Caribbean and African-American women [3,4,20]. This could be explained by the distinctive structural properties of their hair and the various treatments and hair styles they use. In fact, the particularities of frizzy hair in terms of its structure, growth and density predispose it to this type of alopecia [3].

Finally, excessive pulling of the hair by various hairstyles may be responsible for traction folliculitis [21,22], which may explain the presence of inflammatory signs observed in 29% of participants.

The observations made during this inquiry must, however, be interpreted with caution. Indeed, the first limitation is the cross-sectional nature of the study, which prevents any extrapolation of the results to the general population. Second, the bias introduced by our small sample size.

Despite methodological limitations, the observations made during this survey are a wake-up call for appropriate messages to caregivers, women using hair practices and professionals in the field.

Conclusion

In Kinshasa, alopecia most often affects young women and traction alopecia is the most common clinical type. This survey therefore highlights the importance for women in our environment to allow adequate rest time between two hairstyles to avoid continuous tension on the same area of the scalp, to use gentle styling accessories, to minimize the use of chemicals and heating devices on fragile hair.

Authors' Contribution

- **Mutombo Tshitupa Mira:** Principal Investigator, contributed to the design, data collection, writing, and English version of the abstract.
- **Iteke Mohesa:** Participated in the writing, literature review, discussion, and critical revision of the manuscript.
- **Kakiesse Musumba Veronique:** Participated in the design, literature review and critical revision of the manuscript.
- **Odimba Tundanonga René:** Participated in the entry and correction of the manuscript
- **Matanda Nzanza Richard:** Supervised the design, writing and interpretation of the results.

Conflict of Interest

The authors claim to have no conflict of interest.

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