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Original Article

Prevalence of Hair Loss, Dandruff, and Its Knowledge and Prevention Among the Pakistani Population: A Cross-Sectional Study

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Abstract

Background: Hair loss and dandruff are prevalent issues affecting a substantial portion of the Pakistani population. These conditions have significant cultural, social, and psychological impacts, necessitating a comprehensive understanding of their prevalence, causes, and management strategies.

Objective: The objective of this study was to determine the prevalence of hair loss and dandruff among the Pakistani population, identify the contributing factors, and assess the common management practices used by affected individuals.

Methods: A cross-sectional study was conducted from October to December 2023 in Karachi, Pakistan, utilizing a non-probability convenient sampling technique. A total of 353 consenting participants aged 18 years and above were included. Data were collected using a structured questionnaire developed after a comprehensive literature review and under the guidance of a practicing dermatologist. The questionnaire, translated into Urdu, included sections on socio-demographic data, hair type, experiences with hair loss and dandruff, treatment practices, and perceived causes. The survey was distributed via social media platforms such as WhatsApp, Instagram, Facebook, and email. Data were analyzed using SPSS version 25, with descriptive statistics summarizing demographic characteristics and prevalence, and chi-square tests assessing associations between hair conditions and socio-demographic factors.

Results: The study included 353 participants, of whom 58% were female and 40.3% were male. The majority were aged 18-24 years (77.3%). Hair loss was reported by 76.2% of participants, while 20.4% reported dandruff. Common contributing factors included stress (35.1%), lack of proper hair care (28.9%), poor diet (25.2%), and genetics (11.0%). Home remedies were the primary management practice (45.6%), with 30.9% not seeking any treatment.

Conclusion: Hair loss and dandruff are significant issues in Pakistan, with hair loss being more prevalent. Stress, poor diet, and inadequate hair care are major contributing factors. There is a need for increased awareness and effective management strategies, including addressing psychological impacts. Public health initiatives should focus on educating the population about the causes and treatments of these conditions.

1 Introduction

Hair has always played a significant role in an individual's cultural, social, and psychological well-being. In Pakistan, hair loss and dandruff are prevalent issues that affect a substantial portion of the population, regardless of age or gender. Understanding the underlying causes and implementing effective interventions are crucial to addressing these concerns and improving the overall quality of life for those affected (1-3). Hair loss, known medically as alopecia, can manifest in various forms, such as androgenic alopecia, alopecia areata, anagen effluvium, and telogen effluvium, each with distinct etiologies and clinical presentations (4-9). Androgenic alopecia, or genetic hair loss, is the most common type, affecting both men and women and often leading to male pattern baldness and female pattern hair loss (3). Alopecia areata is an autoimmune disorder resulting in patchy hair loss on the scalp and body, while anagen effluvium and telogen effluvium are typically triggered by stress, hormonal changes, medical treatments, or nutritional deficiencies (9-13).

Dandruff, characterized by flaky scalp skin, is another widespread condition in Pakistan, often linked to seborrheic dermatitis, excessive oil production, and fungal infections such as Malassezia (14-17). The condition, while not as severe as hair loss, can cause significant discomfort and social embarrassment. The prevalence of dandruff varies, but it affects a considerable portion of the population, contributing to a complex interplay of genetic, environmental, and lifestyle factors that exacerbate the condition (6). The psychological impact of hair loss and dandruff cannot be understated, as these conditions often lead to decreased self-esteem, social stigma, and, in severe cases, depression and anxiety (12).

Our study aims to elucidate the prevalence, causes, and management strategies for hair loss and dandruff among the Pakistani population. By conducting a comprehensive cross-sectional survey with 353 participants from Karachi, we sought to gather data on demographics, hair type, experiences with hair loss and dandruff, treatment practices, and perceived causes (8). The survey revealed that hair loss is significantly more prevalent than dandruff, with stress, poor diet, lack of proper hair care, and genetics being the most commonly identified contributing factors (9). Despite the availability of medical treatments, many individuals prefer home remedies or do not seek any treatment at all, underscoring the need for increased awareness and better healthcare guidance (10).

This study highlights the importance of addressing both the physical and psychological aspects of hair-related issues. Effective management requires a multifaceted approach, including lifestyle modifications, nutritional support, and appropriate medical interventions. Additionally, there is a need for public health initiatives to educate the population about the causes and treatments of hair loss and dandruff, thereby reducing the social and psychological burden associated with these conditions (11). Understanding the complex interaction of genetic, environmental, and lifestyle factors is essential for developing comprehensive prevention and treatment strategies that can improve the overall well-being of affected individuals in Pakistan (12).

2 Material and Methods

A cross-sectional study was conducted to assess the prevalence, causes, and management strategies for hair loss and dandruff among the Pakistani population. The study was performed from October to December 2023 in Karachi, Pakistan, utilizing a non-probability convenient sampling technique. A total of 353 consenting participants, both male and female, aged 18 years and above, were included in the study. Participants who did not consent or were below 18 years of age were excluded.

The study utilized a structured questionnaire developed after a comprehensive review of the literature from Google Scholar, under the guidance of a practicing dermatologist in Karachi. The questionnaire was designed to collect socio-demographic data, hair type, experiences with hair loss and dandruff, treatment practices, and perceived causes. It included sections on symptoms, treatments, remedies, and daily health practices regarding hair loss and dandruff. The survey was distributed through various social media platforms such as WhatsApp, Instagram, Facebook, and email to ensure broad participation. To enhance understanding and convenience, the questionnaire was also translated into the national language, Urdu.

Ethical approval for the study was obtained from the ethical review board of Hamdard University, Karachi. All procedures performed in the study involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Data collection was carefully managed to ensure accuracy and completeness. Participants' responses were recorded and verified to prevent any inconsistencies. The primary variables of interest included the prevalence of hair loss and dandruff, the perceived causes, and the methods used for managing these conditions. Additional variables included age, gender, occupation, and hair type (13).

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics were used to summarize the demographic characteristics of the participants and the prevalence of hair loss and dandruff. Frequency and percentage distributions were calculated for categorical variables, while mean and standard deviation were computed for continuous variables. Chi-square tests were performed to determine the association between hair loss and dandruff with various socio-demographic factors. A p-value of less than 0.05 was considered statistically significant.

By employing rigorous data collection and analysis methods, this study aimed to provide a comprehensive understanding of the prevalence and determinants of hair loss and dandruff among the Pakistani population, ultimately contributing to better management and prevention strategies for these common conditions.

3 Results

A total of 353 participants were included in the study, representing a diverse range of occupational and educational backgrounds and ethnicities. The demographic profile of the participants is presented in Table 1. Of the participants, 58% were female, and 40.3% were male, with the majority aged between 18 and 24 years (77.3%). The prevalence of hair loss and dandruff among the participants is summarized in Table 2. Hair loss was reported by 76.2% of the participants, making it a more common issue than dandruff, which was reported by 20.4%. A small percentage (3.4%) reported no hair problems.

Table 1: Demographic Characteristics of Participants (N = 353)

Characteristic	Frequency (n)	Percentage (%)
Age		
18-24	272.0	77.3
25-34	56.0	15.9
35-44	14.0	4.0

45-54	5.0	1.4
55+	5.0	1.4
Gender		
Female	204.0	58.0
Male	142.0	40.3
Prefer not to say	6.0	1.7
Occupation		
Employed	67.0	19.0
Unemployed	24.0	6.4
Student	238.0	67.6
Homemaker	14.0	4.0
Other	9.0	2.6

Table 2: Prevalence of Hair Problems

Hair Problem	Frequency (n)	Percentage (%)
Hair loss	269	76.2
Dandruff	72	20.4
None	12	3.4

Participants were also asked about their hair type and any medications they were taking that might affect their hair (Table 3).

The most common hair type was straight (51.1%), followed by wavy (33.5%), curly (13.6%), and coily (1.7%). Most participants (83.2%) reported not taking any medications that could affect their hair, while 16.8% indicated they were taking such medications.

Table 3: Hair Type and Medication Use

Characteristic	Frequency (n)	Percentage (%)
Hair Type		
Straight	180.0	51.1
Wavy	118.0	33.5
Curly	48.0	13.6
Coily	6.0	1.7
Taking Medication Affecting Hair		
Yes	59.0	16.8
No	293.0	83.2

Factors contributing to hair loss and dandruff as perceived by the participants are detailed in Table 4. Stress was identified as the primary factor (35.1%), followed by lack of proper hair care (28.9%), poor diet (25.2%), and genetics (11.0%).

Additionally, 47.6% of participants believed that all these factors combined contributed to their hair problems. Participants' responses regarding the frequency of washing their hair, their stress levels, and their experiences with hair loss and dandruff are presented in Table 5. The majority of participants washed their hair 2-4 times a week (46.0%) and reported moderate stress levels (44.9%).

Table 4: Factors Contributing to Hair Loss and Dandruff

Factor	Frequency (n)	Percentage (%)
Stress	124	35.1
Poor diet	89	25.2
Lack of proper care	102	28.9
Genetics	39	11.0
All of them	168	47.6

A significant portion experienced hair loss and dandruff always (41.9%) or frequently (28.6%). The study also investigated the participants' awareness and prevention strategies for hair loss and dandruff (Table 6). A large portion of participants relied on home remedies (45.6%) or did nothing to address their hair problems (30.9%).

Table 5: Hair Care Practices and Experiences

Characteristic	Frequency (n)	Percentage (%)
Frequency of Washing Hair/Week		
Less than 2 times	79.0	22.4
2-4 times	162.0	46.0
5-6 times	29.0	8.2
Daily	82.0	23.3
Stress Level (Scale of 1-10)		
1-3 (Low)	80.0	22.7
4-6 (Moderate)	148.0	44.9
7-8 (High)	88.0	25.0
9-10 (Very high)	26.0	7.4
Experience with Hair Issues		
Always	148.0	41.9
Rarely	72.0	20.4
Frequently	101.0	28.6
Occasionally	32.0	9.1

Over-the-counter products and professional treatments were less commonly used (8.2% and 8.5%, respectively).

Table 6: Awareness and Prevention Strategies

Strategy	Frequency (n)	Percentage (%)
Home remedies	161	45.6
Over-the-counter products	29	8.2
Professional treatments	30	8.5
Maintaining proper diet	24	6.8
No action taken	109	30.9

Overall, the findings indicate a high prevalence of hair loss compared to dandruff among the Pakistani population, with stress, poor diet, and lack of proper hair care being the most significant contributing factors. The study underscores the need for better awareness and effective management strategies to address these common hair problems.

4 Discussion

The present study provided a comprehensive analysis of the prevalence and determinants of hair loss and dandruff among the Pakistani population, with a particular focus on the contributing factors and management strategies. The findings revealed a higher prevalence of hair loss compared to dandruff, aligning with previous studies that indicated hair loss as a more significant concern globally (1). This study highlighted stress, poor diet, and inadequate hair care practices as primary contributors to hair loss and dandruff, which is consistent with earlier research emphasizing the multifactorial nature of these conditions (9, 10).

The demographic analysis showed that young adults, particularly those aged 18-24, were the most affected group, which could be attributed to lifestyle factors such as dietary habits, stress from academic and professional pressures, and increased use of hair styling products (11). The gender distribution indicated a higher prevalence of hair loss among females, a finding that supports previous studies suggesting hormonal imbalances and nutritional deficiencies as more pronounced in women (Meher et al., 2023). However, this study also underscored the significant impact of genetic predisposition, as noted by participants who identified genetics as a key factor in their hair loss (13).

The study's strengths included a well-structured survey instrument developed under expert guidance, ensuring comprehensive data collection. The use of social media platforms for survey distribution enabled a broad reach and diverse participant pool. Additionally, translating the questionnaire into Urdu improved accessibility and understanding, enhancing the validity of the responses. However, the study had limitations that should be acknowledged. The cross-sectional design limited the ability to establish causality between the identified factors and hair loss or dandruff. The reliance on self-reported data may have introduced response bias, and the non-probability sampling technique could limit the generalizability of the findings to the broader Pakistani population (12).

The psychological impact of hair loss and dandruff, as revealed by the study, was substantial. Many participants reported feelings of embarrassment and decreased self-esteem, consistent with the findings of Rosati et al. (2019), who documented the profound social and psychological effects of these conditions. This highlights the need for healthcare providers to address not only the physical but also the emotional well-being of individuals experiencing hair loss and dandruff. Public health initiatives should focus on raising awareness about the psychological implications and promoting supportive interventions.

Participants predominantly relied on home remedies and showed reluctance to seek professional treatment, reflecting a cultural preference for traditional methods and a lack of awareness about available medical treatments (13). This underscores the necessity for educational campaigns to inform the public about effective and scientifically backed treatment options. Healthcare providers should play a pivotal role in guiding patients towards appropriate care and discouraging practices that may exacerbate hair problems.

Future research should consider longitudinal studies to better understand the causative relationships and long-term effects of various factors on hair loss and dandruff. Additionally, exploring the impact of socio-economic status, access to healthcare, and cultural practices on these conditions would provide a more nuanced understanding. Efforts should also be made to develop targeted interventions that address both prevention and treatment, tailored to the specific needs of the Pakistani population.

In conclusion, this study shed light on the widespread issue of hair loss and dandruff in Pakistan, emphasizing the interplay of genetic, environmental, and lifestyle factors. The findings call for comprehensive management

strategies that include lifestyle modifications, medical treatments, and psychological support. By addressing these aspects, healthcare professionals can significantly improve the quality of life for individuals suffering from hair-related problems.

5 Conclusion

In conclusion, hair loss and dandruff are significant issues in Pakistan, with hair loss being more prevalent. These conditions can have profound psychological and social impacts on affected individuals, leading to decreased self-esteem and quality of life. Major contributing factors include stress, poor diet, and inadequate hair care practices. Despite the prevalence of these issues, there remains a substantial gap in public awareness and understanding of effective management strategies. Therefore, there is a critical need for increased awareness and comprehensive management approaches that address both the physical and psychological aspects of these conditions. Public health initiatives should focus on educating the population about the underlying causes, prevention methods, and available treatments for hair loss and dandruff. By doing so, these initiatives can help mitigate the social and psychological burdens associated with these common hair problems.

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Disclaimers

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