SJIF Impact Factor: 6.711

WORLD JOURNAL OF ADVANCE HEALTHCARE RESEARCH

ISSN: 2457-0400
Volume: 9
Issue: 9
Page N. 22-29
Year: 2025

Review Article

www.wjahr.com

SCALP HEALTH CHALLENGES AMONG WOMEN WEARING THE HIJAB: A NARRATIVE REVIEW

Sama Mustafa Mohammed Ali*[1] and Rosol J. Mohammed[2]

[1,2]Al_Karkh University of Science, Baghdad, Iraq.

Article Received date: 10 July 2025 **Article Revised date**: 30 July 2025 **Article Accepted date:** 20 Aug. 2025

***Corresponding Author: Sama Mustafa Mohammed Ali**

Al_Karkh University of Science, Baghdad, Iraq.

ABSTRACT

Background: Wearing the hijab is a cultural and religious practice observed by millions of Muslim women worldwide. However, prolonged scalp coverage may lead to various dermatological concerns due to factors such as limited ventilation, moisture retention, and mechanical stress on hair follicles. **Objective:** This narrative review aims to synthesize the existing literature on scalp health challenges faced by hijab-wearing women, highlight contributing factors, and propose evidence-informed strategies for prevention and management. **Methods:** A comprehensive search of peer-reviewed articles, clinical reports, and cultural studies was conducted to identify relevant literature on scalp dermatoses, hijab practices, microbiome studies, and healthcare access issues among hijab-wearing women. **Main Findings:** Common scalp issues include seborrheic dermatitis, dandruff, traction alopecia, scalp acne, folliculitis, and microbial infections. Contributing factors include fabric type, wearing the hijab on wet hair, tight hairstyles, reduced hygiene, and poor scalp ventilation. Cultural and social factors, such as modesty and healthcare hesitancy, further complicate access to dermatological care. **Conclusion:** Scalp problems among hijab-wearing women are multifactorial, involving physiological, environmental, and sociocultural dimensions. Addressing these challenges requires a multidisciplinary approach involving dermatological care, culturally competent healthcare services, and public health education. Further research is needed on microbiome differences, fabric impacts, and effective interventions tailored to this population.

KEYWORDS: Scalp dermatoses, head cover, hijab practices, scalp acne, seborrheic dermatitis, dandruff, traction alopecia.

1. INTRODUCTION

The hijab, which means "veil," is a traditional head covering worn by Muslim women worldwide.[1] The headgear is seen as a symbol of cultural and religious identity, signifying piety and modesty[2], among urban middle-class Muslim women particularly.[3] Therefore, women who wear the cephalic garment on a daily basis are more likely to experience worsening scalp disorders, the most common of which are pediculosis capitis, folliculitis, seborrhea, and traction alopecia.[4]

Some women who wear the hijab complainant of scalp issues, including as itching, dandruff, and hair loss, these issues may be linked to severe and chronic occlusion-induced degradation of the skin barrier. Increased permeability and elevated skin pH values could be the consequence of excessive water accumulation in the occluded stratum corneum.[5]

The main characteristic of the scalp are large follicles holding terminal hair with numerous sweat glands, sebaceous glands, and blood vessels in compare with other skin areas.[6-8]

When the scalp is consistently covered by fabrics like the hijab, it can experience occlusion-related skin problems.[9] Occlusion restricts moisture evaporation[10], resulting in up to a 50% rise in skin hydration.[11] This can lead to the swelling of corneocytes[12] and heightened water absorption into the lipid layers between skin cells[11-12], ultimately increasing the permeability of the stratum corneum and raising the scalp's pH.[13-14]

When scalp hydration and pH are not properly regulated, the skin barrier becomes compromised.[15-16] This disruption can reduce its ability to retain moisture and may trigger inflammation and epidermal hyperproliferation.[17-18] As a result, the rate of skin cell

turnover may decline, delaying the keratinization process and leading to symptoms such as dryness, itching, irritation, and dandruff.[17,19]

Despite these concerns, most dermatological research tends to overlook the impact of cultural and lifestyle practices—like hijab-wearing—on scalp health. This oversight highlights the urgent need for targeted studies that explore and compile the specific scalp health challenges experienced by women who wear the hijab.

The objective of this narrative review is to explore and analyze the current understanding of scalp health challenges among women who wear the hijab. By identifying the most common scalp conditions including common disorders such as seborrheic dermatitis, dandruff, telogen effluvium, and traction alopecia, in addition to, contributing factors, and potential preventive or management strategies, that align with the religious and cultural practices of Muslim women.

2. Scalp Anatomy and Physiology

The scalp consists of layers of soft tissue that cover the top of the skull. Anatomically, it is located above the face in the front and is bordered by the neck on the sides and back. It stretches from the supraorbital foramen at the forehead to the occipital protuberances and superior nuchal lines at the back of the head. Functionally, the scalp serves both aesthetic and protective roles—it supports hair growth and acts as a physical barrier against external irritants. Structurally, it is made up of five distinct layers: the skin, a connective tissue layer, the galea aponeurotica, loose areolar tissue, and the pericranium.[20]

Beyond its protective function, the scalp holds significant aesthetic value. Hair on the scalp helps retain body heat and also contributes to personal appearance and sexual signaling. The outermost layer of the scalp is the skin, which is thick and rich in hair follicles and sebaceous glands. These follicles may extend into the dense connective tissue beneath, where the scalp's nerves, blood vessels, and lymphatic structures are located. Beneath this lies the galea aponeurotica, or epicranial aponeurosis—a tough, immobile connective tissue layer that connects with the occipitofrontalis muscle. Firmly anchored to the dense connective tissue layer, it helps maintain the scalp's structural integrity and prevents excessive stretching, which is particularly advantageous during surgical procedures. The fourth layer, the loose areolar connective tissue, provides mobility to the scalp and acts as a flexible divider between the upper three layers and the deepest layer, the pericranium. The pericranium itself is a dense irregular connective tissue layer tightly bound to the skull bone (calvarium) and houses blood vessels crucial for nourishing the bone.[21-23]

The scalp's skin also contains dense clusters of immune cells around the hair follicles, which can react to imbalances by overproducing sebum, eventually leading to hair thinning.[24] When the scalp is frequently covered, as with habitual head coverings, it can experience poor ventilation and continuous tension, this can trigger excessive sebum production and gradual shrinkage of hair follicles and dermal papillae.[25] As a result, many women in this situation commonly report symptoms such as a receding hairline, itchiness, and dandruff—prompting dermatological consultations.[26]

3. Common Scalp Problems Among Hijab-Wearing Women

When the scalp is consistently covered by fabric materials such as the hijab, it can become susceptible to skin issues caused by occlusion.[27] Occlusion limits the outward diffusion of moisture, leading to a significant increase—up to 50%—in skin hydration. This elevated moisture level can cause corneocytes (skin cells) to swell and enhance water absorption within the lipid layers between cells.[28-29] Over time, prolonged disruption of the skin barrier may trigger inflammation and excessive growth of the epidermis, these changes can reduce the rate of skin cell turnover, slowing the keratinization process and resulting in symptoms such as dryness, itching, irritation, and dandruff.[30] This section will focus on the most commonly reported scalp conditions in women who wear the hijab, organized by their clinical features.

3.1 Seborrheic Dermatitis

Seborrheic dermatitis (SD) is a prevalent, long-term inflammatory skin condition that primarily affects young adults, though it can also occur in children. Among teenagers and adults, its symptoms can vary from mild flaking on the scalp to more extensive white or yellowish patches in areas with high sebaceous gland activity, such as the scalp, face, and upper torso.[31] The repeated use of the same turban, hijab, or hair tools like combs can contribute to the development of seborrheic dermatitis or fungal scalp infections. Dermatologists should educate patients about these risks and recommend appropriate adjustments that respect their religious practices—for instance, advising the removal of head coverings during sleep, the use of antifungal shampoos as a preventive measure, or altering hair styling methods by loosening the headscarf or tying the hair gently to minimize tension on the scalp.[32]

3.2 Dandruff

Dandruff, also known as ***Pityriasis capitis***, is a non-inflammatory variant of seborrheic dermatitis characterized by excessive flaking of the scalp, it lies on the more active end of the natural skin-shedding process.[33] Dandruff is highly prevalent, affecting up to half of the global population.[34]

A 2020 study conducted in Jakarta found that hijab-wearing women frequently experienced scalp issues, including itching (59.4%), dandruff (56.3%), and hair loss (6.3%), these conditions can have psychological

impacts, potentially reducing self-esteem and negatively influencing overall quality of life.[35]

3.3 Hair Loss (Telogen Effluvium and Traction Alopecia)

While some degree of hair shedding is normal, excessive hair loss often leads to emotional distress and concern. In Indonesia, where most Muslim women wear the hijab, this head covering is considered one of the possible contributors to hair loss. One common condition linked to this issue is **telogen effluvium (TE)**—a hair growth disorder in which the anagen (growth) phase ends prematurely, leading to widespread, non-scarring hair shedding, and TE has multiple potential triggers.[36]

Another relevant condition is **traction alopecia (TA)**, a form of hair loss caused by repeated pulling or tension on the hair. This type of hair loss is more closely linked to hairstyling practices rather than hair type. Risky styles include tight buns, ponytails, pigtails, braids, chignons, cornrows, dreadlocks, and the use of weaves or hair extensions—especially when applied to chemically relaxed hair, these hairstyles, often worn under the hijab, can lead to pain, inflammation, crusting, or folliculitis, increasing the risk of TA.[37]

3.4 Fungal and Bacterial Infections

The scalp's microbial environment, including both fungal and bacterial populations, plays a crucial role in maintaining or disrupting scalp health. Therefore, understanding and managing the scalp microbiome is essential when addressing scalp-related conditions.[38]

Among the most prevalent bacterial species found on the scalp are *Propionibacterium acnes*, *Staphylococcus capitis*, and *Staphylococcus cohnii*. According to Lousada et al., the dominant bacterial genera within hair follicles include *Propionibacteria*, *Staphylococci*, and *Pseudomonads*.[39] Watanabe et al. also identified similar bacterial species on the hair shafts of healthy individuals.[40] These microorganisms are typically most concentrated in the vertex and occipital regions of the scalp.

In terms of fungal populations, studies have identified *Ascomycota* and *Basidiomycota* as the most abundant fungal phyla on the scalp. While *Ascomycota* tends to dominate in healthy individuals, *Basidiomycota* has been more frequently associated with those experiencing dandruff.[41] The most common fungal species include *Malassezia globosa* and *Malassezia restricta*, which are particularly prevalent within the hair follicles. The genus *Malassezia* has been strongly linked to scalp disorders such as seborrheic dermatitis, psoriasis, and androgenetic alopecia.[39]

3.5 Scalp Acne and Folliculitis

Scalp acne

Scalp acne is a common inflammatory disorder that involves the hair follicles, often aggravated by occlusion, heat, sweat, and microbial growth. In hijab-wearing women, unique factors such as reduced scalp ventilation, moisture retention, and fabric-related friction can contribute to or exacerbate scalp acne.[42]

Folliculitis is an inflammatory condition affecting the hair follicles, typically caused by *Staphylococcus aureus* (S. aureus) or other non-infectious triggers. It is characterized by the presence of erythematous papules and follicular pustules centered around hair follicles on areas of the skin that grow hair.[43] Conditions like folliculitis decalvans and dissecting cellulitis represent the severe end of the scalp acne spectrum, often resulting in permanent hair loss if left untreated.[44]

4. CONTRIBUTING FACTORS

4.1 prolonged covering and sweat accumulation

Wearing the hijab for extended or frequent periods can restrict airflow to the scalp, potentially disrupting the scalp's microbial balance and leading to the accumulation of sebum, dead skin cells, and dandruff. Continuous friction from the head covering may also harm hair follicles, increasing the risk of folliculitis. Therefore, maintaining good scalp hygiene is essential. Infections have been identified as the second most common scalp condition, likely influenced by factors such as hot and humid climates, overcrowded living conditions, and inadequate environmental hygiene.[45]

Although hijab use may theoretically pose occlusion-related risks, research indicates it does not significantly impact scalp hydration or pH levels. The scalp's structural features—particularly the presence of hair and sebaceous glands—may help preserve skin barrier function. Additionally, scalp hair helps regulate body temperature and manage sweat, potentially mitigating the negative effects of occlusion. Interestingly, individuals with straight hair tend to sweat more than those with curly hair.[46]

4.2 Wearing hijab while hair is wet

Wearing the hijab over wet hair is a frequent practice among hijab-wearing women, often driven by time limitations or daily obligations. However, this behavior may negatively affect scalp and hair health.[47] The trapped moisture creates a favorable environment for microbial proliferation, particularly fungal and bacterial species, which can result in a higher occurrence of folliculitis, scalp irritation, and hair shedding due to follicular infections. Moreover, wet hair is structurally weaker and more susceptible to damage. Covering it while still wet increases mechanical stress on the hair shaft, potentially causing breakage and the formation of split ends.[48]

4.3 hijab fabric type

Hijabs are commonly made from materials such as 100% cotton, rayon, or polyester blends, in either knit or woven forms. When selecting hijab fabrics, Muslim women

often prioritize factors like drape, comfort, and hygiene.[49]

Depending on the context or occasion, other considerations may also influence fabric choice. Selecting appropriate hijab material is crucial, as the fabric's structure and thickness significantly impact heat and moisture regulation. These properties affect the fabric's permeability to air and moisture, which in turn influences thermal comfort.[50]

Although wearing a hijab in hot climates may increase thermal stress by reducing heat dissipation through convection and evaporation, this effect has yet to be conclusively confirmed through scientific research. Conversely, hijabs may offer thermoregulatory benefits by shielding the head from direct solar radiation, similar to the use of hats or parasols.[51]

4.4 Tight Hairstyle

Hair care practices play a significant role in maintaining the health of both the hair and scalp. Traction alopecia is a type of progressive hair loss that results from sustained tension applied to the hair follicles, most often associated with tight hairstyles.[53]

Women who consistently wear tight ponytails or buns beneath the hijab are at risk of experiencing continuous mechanical stress on the scalp, particularly in the frontal and temporal regions. Over time, this tension can lead to hair thinning, receding hairlines, and, in severe cases, irreversible follicular damage.[54]

The scalp is rich in inflammatory cell populations around hair follicles, which may respond to physical stress or irritation by increasing sebum production, contributing to inflammation and subsequent hair loss. Chronic occlusion and mechanical tension from prolonged hijab use can exacerbate this process, ultimately reducing the size and function of hair follicles and dermal papillae. As a result, affected individuals commonly present with symptoms such as a receding hairline, itching, and dandruff during dermatological evaluations.[45]

4.5 hygiene practice

Proper hygiene practices are essential for maintaining a healthy scalp. Continuous hijab use may reduce scalp ventilation, disrupt the balance of the scalp microbiome, and promote the buildup of sebum, dead skin cells, and dandruff. Additionally, persistent friction between the fabric and scalp can damage hair follicles.[43] potentially leading to folliculitis. Studies suggest that scalp health tends to be better among males, possibly due to more frequent hair washing—often once or twice daily. In contrast, hair-washing frequency among females varies, with many washing their hair every one to two days. This discrepancy may stem from lower awareness of scalp care compared to facial skincare.[55]

Hijab-wearing women who neglect adequate scalp hygiene are particularly vulnerable to conditions such as dandruff and flaking, seborrheic dermatitis, fungal infections like tinea capitis, traction alopecia (associated with tight hairstyles and repetitive friction), and folliculitis.[56]

5. Cultural and Social Considerations

The hijab should not be viewed solely as a religious requirement or symbol—it also carries broader cultural, social, ethical, and even secular significance. These multifaceted aspects can sometimes pose challenges to the early detection of scalp conditions hidden beneath the hijab and may hinder access to proper medical care.[57]

5.1 Barriers to Discussing Scalp Issues

As healthcare environments become increasingly culturally and religiously diverse, it is essential for clinicians to practice with cultural awareness and sensitivity.[58] Religious and cultural beliefs significantly shape how individuals perceive health, wellness, and their interaction with healthcare services. This relationship between faith and healthcare is particularly pronounced in Muslim populations, who make up nearly one-fourth of the global population.[59]

To support hijab-wearing patients at risk of traction alopecia, healthcare professionals should recommend practical, respectful strategies—such as using looser hairstyles, choosing hijab materials like cotton or jersey (which are less prone to slipping), or wearing adjustable under-caps. If hair is tied in a ponytail or bun under the hijab, it is also helpful to change its position regularly. When hair loss is already present, appropriate medical treatments can be explored. These approaches allow for effective hair care and treatment while honoring the patient's religious values.[60]

5.2 Hesitancy to Visit Dermatologists

Muslim women continue to face barriers when accessing dermatological care. Enhancing cultural competence—by understanding Islamic values related to spirituality, modesty, diet, privacy, health behaviors, and alternative remedies—can help overcome some of these challenges and improve the quality of care provided. Many Muslim women may prefer to be examined by a female dermatologist, have a family member present during the consultation, or restrict examination to body areas they are comfortable revealing. While most dermatologists will treat Muslim women during their careers, navigating dermatological care for this group can present difficulties, particularly for non-Muslim providers unfamiliar with the intersection of religious and cultural considerations. This dynamic presents an important opportunity to deliver more personalized care by fostering cultural sensitivity and tailoring services to meet the specific needs of Muslim patients.[61] As healthcare continues to evolve—whether in-person or through telemedicine—it is increasingly important to address these gaps and ensure that care respects and

accommodates the cultural preferences of Muslim women.[62]

5.3 Modesty and Healthcare Access

Providing effective care for Muslim patients in healthcare settings involves an understanding of their cultural and religious values. Key considerations include dietary restrictions, concepts of modesty and privacy, limitations on physical contact, and the prohibition of alcohol. These differences can pose challenges for non-Muslim healthcare professionals. This practice highlights the importance of delivering care that respects Islamic perspectives on health and illness, while also ensuring patient confidentiality is upheld.[63] Taking into account the privacy female need when removing the hijab during clinical health care.

6. Management and Prevention

Effective management and prevention of scalp problems in hijab-wearing women requires a multifaceted approach that considers environmental, cultural, and lifestyle factors. Such as

- Improved Scalp Hygiene and Care. Wash the hair regularly with medicated or antifungal shampoos, especially in hot and humid environments. Avoid reusing the same hijab or comb without thoroughly cleaning them. Ensure hair is dehydrated before wearing the hijab to prevent bacterial and fungal growth.
- Choosing Breathable Hijab Fabrics and natural fabrics such as cotton or chiffon instead of synthetic materials that trap heat and moisture. Avoid thick or multilayered hijabs in hot climates to prevent heat retention and sweat accumulation.
- Avoid tight buns or consistently pulling the hair in the same direction to reduce the risk of traction alopecia. Alternate the position of ponytails or knots (left, right, center) to relieve constant pressure on one area. Wear loose hairstyles under the hijab to reduce mechanical stress on hair follicles.
- Uncover the hair daily in a private setting to allow proper ventilation.
- Consider shampoos containing zinc pyrithione, ketoconazole, or salicylic acid to manage dandruff and seborrheic dermatitis. Avoid heavy oils that may clog follicles, especially for oily scalp types.

Managements

- Educate hijab-wearing women about scalp care through community health programs, especially regarding:
- The importance of proper hygiene,
- Risks of wearing the hijab with wet hair,
- Suitable fabric choices,
- Signs of scalp conditions requiring medical attention.

7. CONCLUSION

This narrative review has explored the unique scalp health challenges experienced by female who wear the hijab, emphasizing several factors like inhibit water diffusion to the outside of the scalp, reduced ventilation, tight hairstyles, the type of shampoo in addition to the bad type of synthetic fabric can contribute to conditions like seborrheic dermatitis, dandruff, traction alopecia, scalp acne and folliculitis. In addition, the Cultural and social considerations include Hesitancy to Visit Dermatologists, Modesty and lack of female providers in healthcare company also may complicated the diagnosis and treatment for these hijab wearing women.

Raising awareness and warning veiled women to pay attention to scalp hygiene and to carefully choose the type of fabric from which the veil is made, as well as paying attention to visiting dermatologists to starting treatment if there are any problems related to the scalp.

Recommend areas for future research

Evaluate the efficiency of interventions, like the use of breathable fabrics or special hair care routines.

Study the barriers to accessing dermatological care, with a emphasis on modesty and privacy for hijab- wearing women.

Develop public-based educational programs that engage female directly in supporting scalp health and early seeking about treatment- behavior.

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