

Factors and practices associated with deteriorating scalp conditions amongst headscarf-wearers: A national-level cross-sectional study

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Abstract

Background

There is scarce literature that highlights the association of scalp dermatoses and consistent head cover practiced in various religions and cultures.

Methods

A national-level cross-sectional study was conducted via online survey dissemination to hijab-observing female university students of Pakistan. Participant characteristics, activities and hijab-related practices were compared with subjective deterioration of scalp health (SDSH) after starting hijab through a cross-sectional survey. The Kruskal-Wallis test for continuous variables and Pearson χ^2 test for categorical variables were used. Multivariable logistic regression was employed to investigate the possible associations. A p-value < 0.05 was considered statistically significant.

Results

Our results showed that scalp health subjectively deteriorated in 302 (59.3%) of the 509 hijab-observing women. Multivariable logistic regression revealed that being employed (odds ratio [OR], 2.03 [95% CI, 1.08-3.82]; P = 0.027), making tight hairstyles at least once a week (OR, 2.27 [95% CI, 1.40-3.70]; P = 0.001) and using hijab daily (OR, 1.97 [95% CI, 1.12-3.44]; P = 0.018) were associated with an increased likelihood of SDSH. While performing scalp care for at least once daily (OR, 0.48 [95% CI, 0.31 -0.76]; P = 0.002) and washing hijab after single or two-time use (OR, 0.40 [95% CI, 0.27-0.59]; P = 0.000) were associated with a lower likelihood of SDSH.

Conclusion

Our results will help in formulating pioneering guidelines on scalp care tailored for Muslim women who observe hijab and perhaps also other faiths and cultures in which the head is ritually covered.

Summary

Subjective deterioration of scalp health (SDSH) is a common complaint among women who ritually cover their heads with hijab, especially in urban clinical settings of Pakistan, a Muslim-majority country. Our results showed that scalp health subjectively deteriorated in almost 60% of hijab-observing women at the national level. Being employed, making tight hairstyles at least once a week, and wearing hijab daily were associated with two-times higher odds of developing SDSH. While performing scalp care for at least once daily and washing hijab after once or twice use were associated with at least two times lower odds of experiencing SDSH.

Introduction

Hijab, which translates to the veil, is a traditional head wrap worn by mostly Muslim women around the world¹. The headwear is considered a sign of cultural and religious identity; denoting modesty and piety², particularly

among middle-class Muslim women living in urban areas³. Hence, females wearing the cephalic garment daily are prone to worsening scalp conditions of which traction alopecia, seborrhea, pediculosis capitis, and folliculitis are the most frequently encountered⁴. The underlying pathophysiology is also reasonably explained in scientific literature. The scalp skin contains rich clusters of inflammatory cells surrounding the hair follicles which respond to any discordance by an excessive production of sebum followed by progressive hair loss⁵. Thus, reduced ventilation and chronic, repetitive tension in case of consistent head cover elicit sebum hypersecretion leading to the diminution of the hair follicles and dermal papillae⁶. Such women therefore often present with receding hairline, itching, and dandruff as primary complaints for dermatological consultation⁷.

Despite the associated scalp hygiene concerns, the hijab has seen an uprising trend in recent years. A survey conducted by the University of Michigan highlighted that in the seven Muslim-majority countries, most people prefer that a woman completely covers her hair, but not necessarily her face⁸. The results were even more stringent for Pakistan where 98% respondents supported the notion of women covering their heads with or without a face veil⁹. Moreover, the uptake of hijab amongst young urban female Pakistani students has tripled from 9% in 2008 to 25% within a decade¹⁰. Substantial evidence supports that the etiology for preventable scalp dermatoses involve improper hair care practices rather than genetic factors¹¹. Martini L has in fact argued that susceptible individuals foremost require specific scrutiny of their hair care rituals for the management of their respective scalp conditions⁷. However, there is scarce literature regarding the scalp health status of women preferring to cover their heads. Hence, our study aims to fulfill this gap by assessing the prevalence of scalp disorders survey in adult female university students across Pakistan. In addition, factors and practices associated with the subjective deterioration of scalp health (SDSH) in this cohort will also be highlighted.

Materials and Methods

Study Design

A single-sample cross-sectional survey study was conducted on the target sample at the national level owing to an online mode of data collection.

Study Setting

The survey was virtually circulated amongst the female students enrolled in public and private sector universities of Pakistan irrespective of province, field of study, location, and student status. After receiving approval for exemption from the Ethics Review Committee (ERC) at the Aga Khan University, Sindh, Pakistan, the survey was forwarded to all student representatives across different universities within all fields which have female students (sciences, commerce, humanities, arts, etc.) aged between 18 to 24 years of age.

Study Duration

The survey was administered to the study population for a duration of six months after ERC approval for exemption, till the target sample size was achieved. A further time of three months was required to analyze the data and compile the results. The manuscript was ready for submission following thorough review and approval from all researchers one year after the study was launched.

Sample Size

The required sample size for this study was calculated using Open Epi. A recent survey by the Higher Education Commission of Pakistan states that the total female enrollment in the local universities is almost 0.642 million¹². Additionally, as per The News International, Pakistan, 25% of female urban university students cover their heads¹⁰. Assuming a precision level of 5% and a 99% confidence interval, the sample size was calculated to be 498.

Assumptions:

- The number of total female university students in Pakistan as retrieved from a national survey¹² accurately represents the total student force of females in the country.
- The sample size with minimum 498 respondents is a reasonable reflection of the socio-demographic and geographic variety present amongst the entire population of female university students in Pakistan.
- Each of the 642,000 female university students in Pakistan is equally likely to be approached for her response to this survey.

Patient Selection

Eligible female students from 18 to 24 years of age at public and private academic institutions in Sindh, Pakistan who observe the hijab were asked to fill out the survey, till the sample size was achieved.

1. Sampling strategy

As there is no pre-existing database of hijabi female university students in Pakistan, convenience and snowball sampling technique were used to distribute our survey as a Google form for its ease of access and user-orientation.

2. Inclusion Criteria

- All female university students in Science, Commerce, Humanities, or Arts field of studies in Pakistan who observe the hijab.
- Female students between the ages of 18 to 24 years working in a public or private sector university of Pakistan within the departments highlighted above.
- Female student who consents to participate

3. Exclusion Criteria

- Non-hijab wearing female university students.
- Hijab wearing female university students who have recently started the hijab for less than one year.
- Male university students.

Study Procedure

4. *Piloting of questionnaire*

The final questionnaire drafted by the research team on Google forms was initially piloted on 5% of estimated sample size i.e., 33 headscarf-wearing female university students before administering it on the actual population. The population for pilot size included only one institution, i.e., students from the Aga Khan University to have an idea about their understanding of the survey.

5. *Data Collection*

All female university students who cover their heads enrolled at public and private institutions in Pakistan were conveniently approached and invited for participation in the study through . The survey was disseminated online through social media platforms including WhatsApp and Facebook groups of various universities in Pakistan. Students were encouraged to propagate the survey within their class groups online and amongst colleagues or acquaintances belonging to different cities and provinces of Pakistan, to ensure a diverse and representative sample.

6. *Variables:*

The major aspects being assessed under this survey include personal demographics, scalp hygiene practices, health status, and hijab related practices. The variables for each aspect are as follows:

- Personal demographics: age, year of study, employment status, and any comorbidity.
- Daily schedule: screen time, study time, and sleep time per day.
- Scalp related habits: use of hair shampoo, conditioner, soap, hair oil, medicated products, organic products, hair spray/serum, hair dye, blow dry/straightener, tight hairstyles, and daily scalp care.
- Hijab related practices: Duration in years, daily use and duration, frequency of washing hijab, use of hijab cap, type of hijab fabric, and hijab style.

Statistical Analysis

Continuous variables are displayed as median and interquartile ranges (IQR) while categorical data is presented as frequency and percentage. Participant characteristics, activities and hijab related practices were compared by development or worsening of worsened scalp condition (after using hijab) by the Kruskal-Wallis test for continuous variables and Pearson χ^2 test for categorical variables. Multivariable logistic regression was employed to investigate the possible association of participant characteristics, activities and hijab related practices to the development/worsening of worsened scalp condition in hijab observing females. A p-value < 0.05 was considered statistically significant. All statistical analysis was performed using IBM Statistical Package for Social Sciences (Version 25).

Ethics

After Institutional Ethical Review Committee exemption from AKU, participation in the research was strictly voluntary; all volunteers who wished to participate were given both verbal and written details about the study, and the main purpose of the study was explained. Prior to participation, informed consent was obtained. The questionnaire was filled in without supervision, ensuring personal privacy of the participants. The data

obtained was kept confidential and automatically entered into a private online database. This dataset was password protected and only accessible by the investigators involved in the study. None of the information shared by respondents was individually identifiable.

Confidentiality

All data collected was de-identified and anonymized to prevent the breach of participant confidentiality. The de-identification took place by provision of a record timestamp for each participant automatically through Google forms; all analysis was followed using these numbers. All data was stored as a soft copy using Microsoft Excel software. At no point were any identifiers accessible to anyone outside the immediate research team.

Funding

This study did not require any funding.

Teamprerequisites

All research team members have completed their CITI courses. No additional prerequisites are required.

Study Description

After institutional ethical review committee (ERC) approval for exemption, the survey was disseminated to the participants through data collectors, following pilot survey completion and feedback incorporation. Virtual informed consent in English language was initially obtained from each participant. The respondents were also explained the project’s aims, objectives, process of recruitment, and study’s implications. The practices with respect to hijab and scalp care of female students were recorded through the questionnaire. The survey was enabled for six months post-ERC application for exemption. Weekly reminders were sent on the social media groups and weekly graphs were maintained for the collected data.

Results

A total of 509 out of 512 respondents (99.4%) were included in the analysis. All the respondents were females with a median interquartile age of 20 (2) years. Scalp health subjectively deteriorated in 302 (59.3%) of the 509 participants. The comparison of participant demographics, hair and scalp practices, and hijab-related behaviors is provided in **Tables 1 to 3**.

Table 1 shows participant demographics in association with subjective deterioration of scalp health (SDSH). Both groups (No SDSH and SDSH development) were comparable in their age, year of study, and daily sleep time. However, being unemployed (91.4% vs 83.4%, $p = 0.010$) and <6 hours of screen time/day (64.3% vs. 55.3%, $p = 0.044$) were features significantly higher in participants who did not develop SDSH. Conversely, the presence of a comorbid condition (30.8% vs. 21.7%, $p = 0.024$), and studying < 6 hours/day (79.8% vs. 69.6%, $p = 0.008$) were characteristics found significantly higher in participants who developed SDSH.

Table 2 shows scalp related practices of the participants in association with subjective deterioration of scalp health (SDSH). Both groups (No SDSH and SDSH development) were comparable in their use of hair and scalp care products (shampoo, conditioner, soap, hair oil, medicated products, organic products, hair spray, hair dye),

and of blow dryer/straightener. However, making tight hairstyles at least once a week (52.6% vs. 33.8%, $p = 0.000$) and practicing <1 time of scalp care/day (80.8 vs. 70.0%, $p = 0.005$) was significantly higher in participants who developed SDSH.

Table 3 represents hijab use and related practices amongst the study participants. Both groups (No SDSH and SDSH development) were comparable in the total years of hijab use, the duration of hijab worn in a day, the use of hijab cap, the type of hijab fabric, and the style of hijab were also similar. However, washing hijab after every two uses at max (63.8% vs 41.7%, $p = 0.000$) was higher in participants who did not develop SDSH. Conversely, using hijab daily (88.4% vs 82.1%, $p = 0.046$) was higher in participants who developed SDSH.

Table 4 shows that on multivariable analysis, being employed (odds ratio [OR], 2.03 [95% CI, 1.08-3.82]; $p = 0.027$), making tight hairstyles at least once a week (OR, 2.27 [95% CI, 1.40-3.70]; $p = 0.001$) and using hijab daily (OR, 1.97 [95% CI, 1.12-3.44]; $p = 0.018$) was associated with an increased likelihood of SDSH. While performing scalp care for at least 1 time/day (OR, 0.48 [95% CI, 0.31 -0.76]; $p = 0.002$) and washing hijab after single or two-time use (OR, 0.40 [95% CI, 0.27-0.59]; $p = 0.000$) is associated with lower likelihood of SDSH.

Discussion

Hair loss in conjunction with hijab use was first reported in literature in 1980 amongst the Libyan population¹³. Since the fabric is held on the anterior hairline and often kept in place tightly, it exerts sustained tension on the hair follicles, and can potentially lead to traction alopecia, causing eventual irreversible hair loss and scarring¹⁴. Therefore, females who observe hijab daily are at significantly greater risk of developing scalp dermatoses, as elucidated in our study. Tight up-dos or ponytails exacerbate the risk of traction alopecia. Our study concluded the same, as headscarf wearers practicing tight hairstyles suffer from dermatological concerns. Past studies have also shown that donning hijab over wet hair can worsen hair damage and breakage¹⁵. **Figure 1** below summarizes our study findings in conjunction with evidence-based recommendations to manage hijab-associated scalp dermopathy in women.

Females may also suffer from contact “textile” dermatitis due to close contact of the skin with the cloth. Various chemicals, including benzantrones and sulfites, persist after dying or treating textiles, and are implicated in the development of dermatological pathologies¹⁶. The additional use of anti-wrinkling agents, such as urea-formaldehyde or melamine-formaldehyde resins¹⁷, as well as biocides used to prevent odors, including dimethyl fumarate and zinc pyrithone¹⁸, can worsen allergic symptoms in consumers. The condition can become chronic due to constant friction and trapping of perspiration^{19,20}. Often, pruritus is the only symptom leading to a delay in diagnosis²¹.

Our results demonstrate that hijab-wearing employed females are significantly more likely to suffer from distressing scalp and hair disorders. Employed individuals must spend long hours in a professional environment which warrants daily and constant use of the hijab. Prolonged or frequent use of the hijab hinders ventilation, altering the scalp microbiome, leading to accumulation of sebum, dead skin and dandruff. Constant friction also damages hair follicle causing folliculitis²². Therefore, hygiene practices are imperative in maintaining scalp health. Infections were the second largest group of observed disorders. The warm and

highly humid climate of the country, overcrowding, and poor environmental hygiene may account for the high incidence of this disorder – similar to other studies.

Our study results show that women who washed their hijab at most after using the garment twice were significantly less likely to suffer from scalp dermatopathy. Widaty S. et al. attributed this to a change in scalp bioenvironment. Their study on comparison of scalp microbiota between hijab wearing and non-hijab wearing women emphasized the link between an altered microbiome and scalp dermatoses. Women wearing the hijab were found to have fewer colonies of *Staphylococcus cohnii*, a species which mitigates scalp inflammation. Similarly, *Malassezia restricta* was more dominant in the hijab group. It is, therefore, thought that using the hijab, for up to or more than 8 hours daily can contribute to the development of seborrheic dermatitis¹⁵.

In our study, performing hair care at least once a day was associated with significantly improved hair and scalp health. Scalp massage has been shown to favor hair growth within 24 weeks of therapy, via improvement in blood circulation²³ and optimal mechanical stimulation of dermal papillae²⁴ which increases hair-related gene expression such as IL6ST, BMP4, NOGGIN, and SMAD4^{25,26}. Additionally, the use of rosemary²⁷ and tea tree²⁸ oils have proven to boost hair growth in patients with alopecia. These natural remedies may be of benefit and need further study for their utility in women wearing the hijab to prevent inflammatory scalp conditions and premature hair loss.

Recommendations set forth by the American Academy of Dermatology (AAD) may be significantly advantageous to females observing the hijab. Since harsh chemicals can flare irritant dermatitis, the AAD advocates using alcohol- and fragrance-free products, as well as minimizing the use of hairsprays and gels²⁹. Should a flare-up occur, 1% or 2% ketoconazole shampoo is recommended. In the case of hijab, excessive sweat production causes drying of the skin as well as salt accumulation which acts as an irritant, contributing to the pathogenesis of seborrheic dermatitis. Hence, women are urged to loosen or remove the hijab when they are in a comfortable and in culturally appropriate settings³⁰. They are also advised to loosen hair at the frontal hairline to prevent traction alopecia²⁹.

Additionally, the AAD recommends loose, cotton clothing to prevent irritant contact dermatitis²². Allergies are rare with breathable fabrics such as cotton³¹, and in fact silk has been recommended as a therapeutic garment to atopic patients in previous studies³². The reactive dyes, which are used to stain these natural fabrics, are not implicated in sensitization of allergic patients. Manizi et al. concluded that less than 1% of the study sample developed reactions to reactive dyes in a 1-year period³³. Conversely, synthetic materials are stained with disperse dyes¹⁹. Due to their poor binding to the fabric and small, lipophilic nature, they are easily transferred to the skin resulting in contact dermatitis³⁴.

Rehman R. et al maintain that the onus of patient welfare is on the physician, especially in socially vulnerable groups such as females observing the hijab. Since unveiling for examinations may challenge personal values, cultural competence on the physician's part creates a comfortable and safe environment for the patient. The choice of a chaperone should be given, and additional male staff can be asked to leave the room whilst examining. Since, hijab signifies religious values and is of personal importance to Muslim females, creating a conducive environment enables female patients to share sensitive information such as those pertaining to their hair care practices and dermatological concerns, allowing for early and effective management³⁵.

Conclusion

Our study has highlighted important factors with respect to participant characteristics, hijab-related practices, and scalp-related care that may predispose hijab-observers towards worsened scalp condition. While respecting the cultural and religious aspects associated with the head cover, it is hoped that our study will acquire the attention of healthcare professionals in devising management strategies and guidelines for the susceptible population. This study may be of vital importance to practicing dermatologists who may commonly encounter such patients in their clinical setting and can assist them in giving culturally appropriate medical advice and care.

Declarations

Original Publication

The content submitted as part of this manuscript is an original unpublished work and is not being submitted for publication elsewhere at the same time.

Authors' Contribution

ZZF, AS and SM conceptualized the study. AAM collected the data. DA performed data analysis. ZZF, MN, DA, AAM, and RI drafted the initial manuscript. AS supervised the study. AS and SM made the final edits. All authors reviewed and approved the final draft.

Conflict of Interest

None exist.

Funding

None received.

Ethical Approval

Exempted from ethical review by the Aga Khan University, Karachi, Pakistan (Reference no. 2022-7272-22659). All human subject procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975, as revised in 1983.

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Tables

Table 1. Baseline Characteristics of Participants Who Wear Hijab

Participants, No. (%)			
Variable	No SDSH, 207 (40.7)	SDSH development, 302 (59.3)	P-value
Age, median (IQR), years	20 (2)	20 (2)	0.148
Year of study			0.856
1 st year	45 (21.7)	58 (19.2)	
2 nd year	89 (43.0)	132 (43.7)	
3 rd year	31 (15.0)	54 (17.9)	
4 th year	14 (6.8)	23 (7.6)	
5 th year	11 (5.3)	11 (3.6)	
Graduate	17 (8.2)	24 (7.9)	
Employment status			0.010
Unemployed	189 (91.4)	252 (83.4)	
Employed	18 (8.7)	50 (16.6)	
Any comorbidity?			0.024
Yes	45 (21.7)	93 (30.8)	
No	162 (78.3)	209 (69.2)	
Screen time/day, hours			0.044
<6	133 (64.3)	167 (55.3)	
≥6	74 (35.7)	135 (44.7)	
Study time/day, hours			0.008
<6	144 (69.6)	241 (79.8)	
≥6	63 (30.4)	61 (20.2)	
Sleep time/day, hours			0.418
<6	59 (28.5)	80 (26.5)	
6-9	129 (62.3)	183 (60.6)	
>9	19 (9.2)	39 (12.9)	

Table 2. Participants Scalp-Related Practices			
Participants, No. (%)			
Variable	No SDSH, 207 (40.7)	SDSH development, 302 (59.3)	P-value
Use of shampoo			0.362
Twice a week or less	95 (45.9)	151 (50.0)	
More than twice a week	112 (54.1)	151 (50.0)	
Use of conditioner			0.606
Twice a week or less	169 (81.6)	241 (79.8)	
More than twice a week	38 (18.4)	61 (20.2)	
Use of soap			0.082
Never	121 (58.5)	197 (65.2)	
Less than once weekly	18 (8.7)	13 (4.3)	
At least once weekly	68 (32.9)	92 (30.5)	
Use of hair oil, n = 468			0.216
Never	12 (5.8)	10 (3.3)	
Twice a week or less	159 (76.8)	240 (79.5)	
More than twice a week	23 (11.1)	24 (7.9)	
Missing *	13 (6.3)	28 (9.3)	
Use of medicated products			0.195
Never	148 (71.5)	193 (63.9)	
Non-compliant	45 (21.7)	81 (26.8)	
Used as prescribed	14 (6.8)	28 (9.3)	
Use of organic products			0.190
Never	84 (40.6)	117 (38.7)	
Non-compliant	78 (37.7)	135 (44.7)	
Used as prescribed	45 (21.7)	50 (16.6)	
Use of hair spray/serum			0.332
Never	134 (64.7)	176 (58.3)	
Less than once weekly	51 (24.6)	86 (28.5)	
At least once weekly	22 (10.6)	40 (13.2)	
Use of hair dye			0.982
Never	163 (78.7)	230 (76.1)	

At least once weekly	31 (15.0)	44 (14.6)	
Missing*	13 (6.3)	28 (9.3)	
Use of blow dry/straightener			0.350
Never	85 (41.1)	110 (36.4)	
Less than once weekly	104 (50.2)	171 (56.6)	
At least once weekly	18 (8.7)	21 (7.0)	
Making tight hairstyles			0.000
Never	58 (28.0)	63 (20.9)	
Less than once weekly	79 (38.2)	80 (26.5)	
At least once weekly	70 (33.8)	159 (52.6)	
Scalp care/day, times			0.005
Less than once daily	145 (70.0)	244 (80.8)	
At least once daily	62 (30.0)	58 (19.2)	

Table 3. Hijab Use and Hijab Related Practices			
Participants, No. (%)			
Variable	No SDSH, 207 (40.7)	SDSH development, 302 (59.3)	P-value
Duration of hijab use, years			0.658
≤5	109 (52.7)	153 (50.7)	
>5	98 (47.3)	149 (49.3)	
Daily hijab use			0.046
No	37 (17.9)	35 (11.6)	
Yes	170 (82.1)	267 (88.4)	
Hijab duration/day, hours			0.878
≤8	180 (87.0)	264 (87.4)	
>8	27 (13.0)	38 (12.6)	
Washing hijab			0.000
Less often than once/twice use	75 (36.2)	176 (58.3)	
After every once/twice use	132 (63.8)	126 (41.7)	
Use of hijab cap			0.663
Not daily	126 (60.9)	178 (58.9)	
Daily	81 (39.1)	124 (41.1)	
Type of hijab fabric			0.092
Breathable	194 (93.7)	270 (89.4)	
Non-breathable	13 (6.3)	32 (10.6)	
Hijab style			0.114
Tightly worn	123 (59.4)	196 (64.9)	
Loosely worn	43 (20.8)	67 (22.2)	
Inconsistent	40 (19.4)	38 (12.6)	
Missing*	1 (0.5)	1 (0.5)	

Table 4. Logistic Regression Analysis of Patient Characteristics Associated with Subjective Development/Worsening of Worsened scalp condition				
	Univariable		Multivariable	
Variable	Odds ratio (95% CI)	P-value	Odds ratio (95% CI)	P-value
Employment status				
Unemployed	1 [Reference]		1 [Reference]	
Employed	2.08 (1.18-3.69)	0.012	2.03 (1.08-3.82)	0.027
Any comorbidity?				
Yes	1 [Reference]		1 [Reference]	
No	0.62 (0.41-0.94)	0.025	0.65 (0.42-1.02)	0.059
Making tight hairstyles				
Never	1 [Reference]		1 [Reference]	
Less than once weekly	0.93 (0.58-1.49)	0.771	0.97 (0.59-1.61)	0.914
At least once weekly	2.09 (1.32-3.29)	0.001	2.27 (1.40-3.70)	0.001
Scalp care/day, times				
<1	1 [Reference]		1 [Reference]	
≥1	0.56 (0.37-0.84)	0.005	0.48 (0.31-0.76)	0.002
Screen time/day, hours				
<6	1 [Reference]		1 [Reference]	
≥6	1.45 (1.00-2.09)	0.044	1.43 (0.96-2.14)	0.077
Study time/day, hours				
<6	1 [Reference]		1 [Reference]	
≥6	0.58 (0.38-0.87)	0.009	0.66 (0.42-1.02)	0.063
Wearing hijab frequency				
Not daily	1 [Reference]		1 [Reference]	
Daily	1.66 (1.00-2.73)	0.047	1.97 (1.12-3.44)	0.018
Washing hijab				
Less often than once/twice use	1 [Reference]		1 [Reference]	
After every once/twice use	0.87 (0.28-0.59)	0.000	0.40 (0.27-0.59)	0.000

Figures

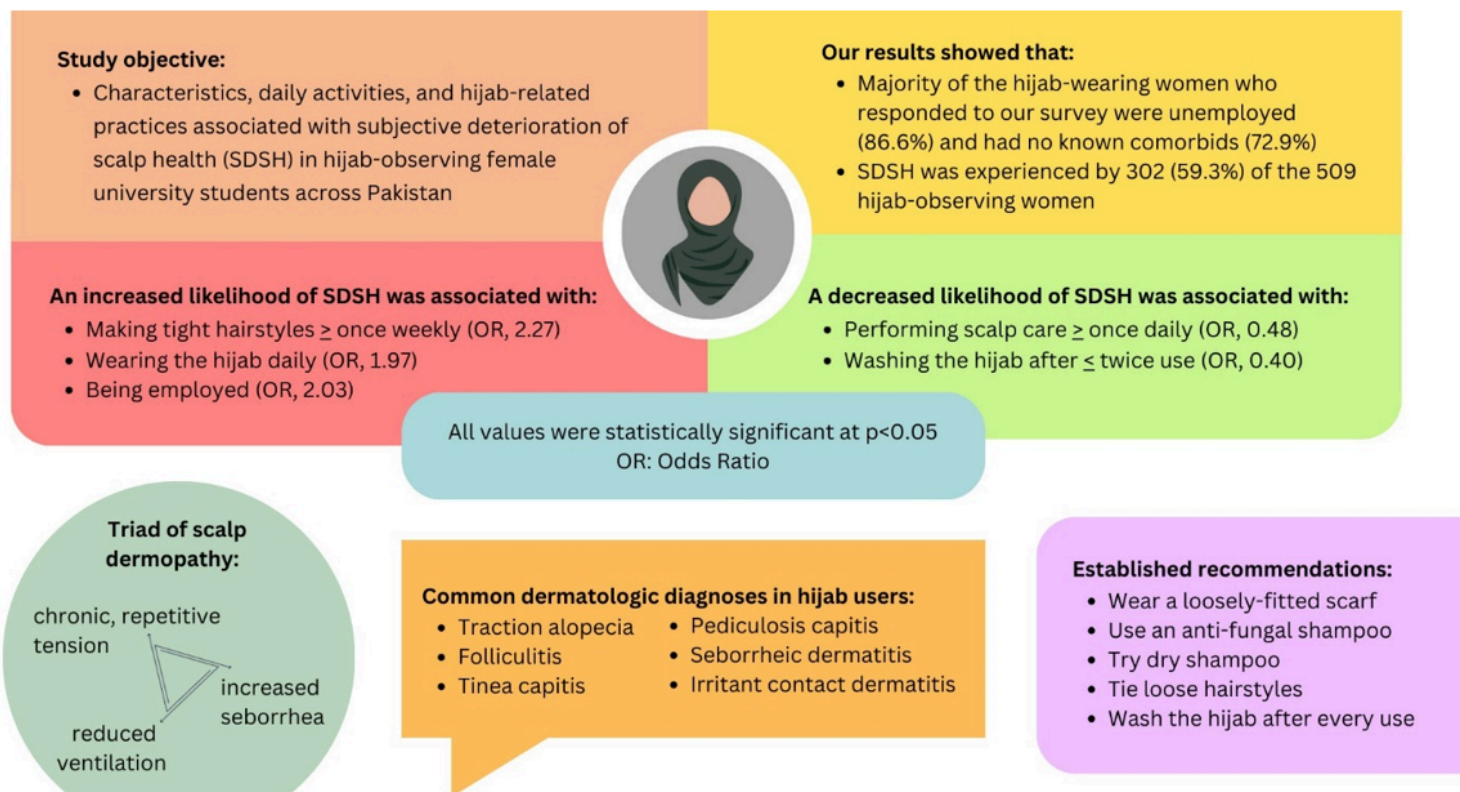


Figure 1: Summary of important results and discussion

Figure 1

See image above for figure legend

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [HIJABQuestionnaire.docx](#)