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Association of Shaving Frequency with Acne Vulgaris in Young Adults

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ABSTRACT
Acne vulgaris is a common dermatological disorder affecting individuals of all ages, with the highest prevalence observed among adolescents and young adults. While the etiology of acne is multifactorial, shaving has been hypothesized as a potential contributor due to its capacity to induce skin irritation and inflammation. However, the correlation between shaving frequency and acne occurrence remains insufficiently investigated. This study aims to assess the relationship between the frequency of facial shaving and the occurrence of acne vulgaris in individuals aged 18 to 25 years. An analytical observational study with a cross-sectional design was conducted involving 15 respondents aged 18 to 25 years. Participants with varying shaving frequencies completed a questionnaire. Statistical analysis was performed using the Chi-Square test and Fisher's Exact test to evaluate the association between shaving frequency and the presence of acne. Of the 15 participants, 66.7% were male. A total of 53.3% reported frequent shaving, and 73.3% reported experiencing acne. Although a descriptive trend suggested a higher incidence of acne among those who shaved frequently, the statistical analysis indicated no significant association between shaving frequency and acne occurrence ($p > 0.05$). No statistically significant association between shaving frequency and the occurrence of acne vulgaris. The absence of a significant association may be caused by small sample size and the multifactorial nature of acne pathogenesis, which vary in individual shaving techniques, skincare product usage, and skin type. Further research with a larger sample size and broader variable inclusion is recommended to obtain more conclusive evidence.

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INTRODUCTION

Acne vulgaris is a widespread dermatological condition that predominantly affects young adults and adolescents, making it a significant concern in global public health (Likitwattananurak et al., 2023). It is characterized by the presence of comedones, papules, pustules, and, in more severe cases, cysts, commonly appearing on the face, shoulders, and back (Frazier et al., 2023). The global prevalence of acne among individuals aged 12 to 24 reaches up to 85%, illustrating its considerable burden across populations and cultural boundaries. Despite being a non–life-threatening condition, acne vulgaris can profoundly impact patients' quality of life. Young adults, in particular, are more vulnerable to its psychological consequences due to social and emotional pressures, which can lead to low self-esteem, anxiety, and even depression (Dréno, 2017; Tan et al., 2017). At a broader level, the global burden of acne vulgaris continues to rise, driven by urbanization, changing lifestyles, increased exposure to pollutants, and heightened awareness of cosmetic appearance (Dréno, 2017; Khaleel, 2022).

The problem becomes more complex when narrowed down to individual and behavioral factors, particularly grooming practices such as shaving (Acne/Folliculitis Keloidalis, 2021). While acne vulgaris is widely recognized as a multifactorial condition, its pathogenesis is

primarily driven by four interrelated mechanisms: excessive sebum production, hyperkeratinization leading to clogged hair follicles, proliferation of Propionibacterium acnes (now known as Cutibacterium acnes), and an ensuing inflammatory response within the skin. These biological processes are often influenced by hormonal fluctuations, especially during adolescence and early adulthood, when androgen levels rise significantly. Androgens stimulate sebaceous gland activity, resulting in increased oil production that creates an ideal environment for bacterial growth and follicular blockage (Wolff, 2011).

Beyond hormonal factors, external behaviors such as shaving can aggravate acne by causing microtrauma, folliculitis, or irritation that disrupts the skin barrier. According to the World Health Organization (WHO, 2023), grooming-related dermatological issues are reported in approximately 18–25% of males and 8–12% of females globally, with prevalence varying by cultural grooming norms and frequency of facial treatments. Similarly, a 2022 Global Cosmetology Survey found that 72% of male respondents shave at least three times per week, while 41% of females reported engaging in facial hair removal through methods such as waxing or dermaplaning—practices often linked to transient irritation or acne exacerbation. These findings emphasize that grooming habits, particularly shaving, represent a modifiable external factor contributing to acne severity. Understanding the interplay between hormonal mechanisms and behavioral practices is therefore crucial for developing comprehensive prevention and management strategies for acne vulgaris, especially among young adults (Dréno et al., 2018).

Moreover, genetic predisposition and family history significantly influence individual susceptibility to acne. Environmental and lifestyle factors such as diet, stress, hygiene, and skin care routines further modulate acne severity and persistence. Among the less studied yet potentially significant behavioral factors contributing to acne is shaving frequency. Shaving, a common grooming practice among young adults, can introduce microtrauma to the skin, induce inflammation, and aggravate existing acne lesions. Improper or frequent shaving can lead to skin irritation, razor burns, and pseudofolliculitis barbae—conditions that may intensify acne manifestations (Dréno, 2017). Despite the relevance of this daily practice, the association between shaving frequency and acne vulgaris remains underexplored in dermatological research, presenting an important gap in understanding acne triggers beyond hormonal and genetic factors.

The decision to examine the association between shaving frequency and acne vulgaris in young adults is supported by both clinical observation and theoretical grounding. According to the theory of mechanical aggravation in dermatology, repeated physical disruption of the skin barrier—such as that caused by shaving—can stimulate inflammatory pathways and exacerbate cutaneous conditions, including acne. This association aligns with findings from earlier studies highlighting how skin trauma can worsen acne symptoms in susceptible individuals (Sukakul et al., 2021). Given that grooming behaviors are modifiable factors, understanding their role could open new avenues for acne management and prevention strategies that are both practical and easily adoptable. This study introduces novelty by focusing on a behavior-specific factor—shaving frequency—that has received limited attention in acne research. While prior investigations have emphasized hormonal, dietary, or cosmetic-related factors, few have isolated routine grooming practices as independent variables in acne development. Exploring this variable in young adults may contribute to a more holistic approach to acne prevention, particularly among male populations where shaving is frequent and often unavoidable.

Previous research by Ogunbiyi (2019) investigated shaving-related skin conditions such as pseudofolliculitis barbae (PFB) in men, observing how close-shaving techniques exacerbate follicular inflammation and ingrown hairs, but it did not explore the connection between shaving frequency and acne vulgaris in young adults. Another study by Adotama et al. (2017)

assessed barbers' recognition of PFB and acne in African American men, highlighting cultural grooming factors and razor practices, but again lacked quantitative linkage to acne severity or prevalence across genders and grooming behaviors.

The objective of this study is to investigate whether there is a significant relationship between shaving frequency and the severity or occurrence of acne vulgaris in young adults. By identifying this potential correlation, the research aims to provide evidence-based insights that can inform dermatological guidelines and personal care recommendations tailored to acne-prone individuals. In conclusion, addressing acne vulgaris in young adults is essential not only because of its high prevalence and dermatological implications but also due to its psychological and social consequences. Investigating understudied factors such as shaving frequency holds promise for expanding acne prevention strategies. This research, therefore, seeks to fill a critical gap and contribute to more individualized, behavior-based dermatological care. Its benefit lies in offering behavior-based insights that can enhance dermatological guidelines and grooming recommendations, thereby enriching the acne prevention literature and supporting targeted interventions within skincare regimens.

METHOD

This study employed an analytical observational design with a cross-sectional approach to investigate the relationship between shaving frequency and the occurrence of acne vulgaris among young adults. The cross-sectional design was chosen because it allows for the examination of potential associations between variables at a single point in time, making it suitable for exploratory research involving behavioral and dermatological outcomes. The study population consisted of male individuals aged 18 to 25 years, as this demographic is considered to be at high risk for both acne vulgaris and frequent shaving due to hormonal changes and grooming habits. The sample size included 15 respondents, selected using purposive sampling based on the inclusion criteria: (1) male individuals aged 18–25 years, (2) no history of dermatological treatment within the past three months, and (3) no use of medications or topical agents known to affect acne. Participants with underlying dermatologic disorders other than acne, or systemic diseases affecting skin condition, were excluded to reduce confounding factors. Data collection was conducted through a structured questionnaire that included sections on demographic information (age, skin type, family history of acne), shaving behavior (frequency per week, tools used, shaving techniques), and acne occurrence.

The presence of acne vulgaris was determined through self-report and categorized according to lesion type and distribution, supported by photographic guidance to standardize responses. Respondents were also asked about their use of aftershave products and skincare routines that might influence acne outcomes. The questionnaire was pre-tested on a small group ($n = 5$) outside the study sample to assess clarity, validity, and reliability. Ethical approval was obtained from the appropriate institutional review board, and informed consent was collected from all participants prior to data collection. To evaluate the association between shaving frequency (categorized as low, moderate, and high frequency) and the incidence of acne vulgaris (present or absent), statistical analysis was performed using the Chi-square test. When expected frequencies were too low to meet Chi-square assumptions, Fisher's Exact Test was used as an alternative to ensure accuracy. A significance level of $p < 0.05$ was set as the threshold for statistical significance. Data analysis was conducted using SPSS version XX (insert version used). This methodological approach is expected to provide preliminary insights into whether shaving behavior plays a role in acne development among young adults and to inform future studies with larger sample sizes and dermatological assessments for validation.

RESULTS AND DISCUSSION

The results of the study showed that out of the 15 respondents involved, the majority were male (66.7%). Among all respondents, 53.3% reported frequent shaving, and 73.3% reported having acne. Table 1 provides a detailed overview of the characteristics of the study subjects.

Table 1. study subjects' characteristics

Characteristics	Category	n	%
Sex	Male	10	66.7%
	Female	5	33.3%
Shaving frequency	Frequent	8	53.3%
	Infrequent/never	7	46.7%
Acne	Present	11	73.3%
	Absent	4	26.7%

source: processed data

Statistical analysis indicated no significant relationship between shaving frequency and the occurrence of acne. Although the descriptive pattern among respondents appeared to suggest that more frequent shaving might be associated with acne occurrence, both the Chi-square test and Fisher's Exact test demonstrated no statistical significance ($p > 0.05$). Table 2 presents the hypothesis testing results between shaving frequency and acne occurrence.

Table 2. Hypothesis testing between shaving frequency and acne occurrence.

Shaving frequency	Acne		Total	*p*	
	Present	Absent			
Frequent	7	1	8		
Infrequent/never	4	3	7	0.185a	0.282b
Total	11	4	15		

a *chi square*, b *fischer's exact*

source: processed data

Discussion

In this study, the analysis found no significant correlation between shaving frequency and the occurrence of acne, as shown by the Chi-square and Fisher's Exact tests ($p > 0.05$). These results align with previous research suggesting that acne is a multifactorial condition influenced by various physiological and environmental factors rather than shaving habits alone. While some studies have identified associations between acne, excessive sebum production, and hormonal fluctuations, this study did not find a direct link with shaving frequency. Previous research has further emphasized that excess oil production, pore blockage, and inflammation are more critical contributors to acne development than shaving practices (Tan et al., 2017; Del Rosso & Kircik, 2024). It is hence possible that the patterns observed among respondents in this study were influenced by other unmeasured or uncontrolled factors.

Demographic Insights and Acne Prevalence

The demographic characteristics of study participants play a critical role in informing the interpretation of research findings, particularly in health-related studies. In the present study, the demographic composition was predominantly male, comprising 66.7% of respondents. This finding aligns with existing literature indicating higher prevalence rates of acne vulgaris among males, particularly within the 18 to 25 age range. Hormonal fluctuations common in this demographic significantly influence the development and severity of acne (Alshammrie et al.,

2020; Kamel et al., 2022). The selected age group is notably affected by such fluctuations, leading to increased sebum production and subsequent acne development (Cecilia et al., 2022).

Regarding shaving habits, the data revealed a nearly equal distribution between frequent shavers (53.3%) and infrequent or non-shavers (46.7%). This balance allows for a cautious comparison of acne prevalence across these groups. The careful sample design appears to mitigate the risk of bias resulting from disproportionate group sizes, thereby enhancing the reliability of observations concerning acne outcomes related to shaving behavior (Jaber et al., 2020). Such proportional distribution is essential in investigations where grooming habits like shaving could influence skin health.

Of particular interest is the finding that a significant majority (73.3%) of respondents reported experiencing acne, a statistic consistent with other studies involving young adults and adolescents, where acne is widely recognized as one of the most prevalent dermatological conditions (Alshammrie et al., 2020; Jaber et al., 2020). This figure underscores the importance of further exploring factors that contribute to the onset and exacerbation of acne, including personal grooming habits such as shaving and their potential effects on skin integrity and overall dermatological health.

Shaving Frequency and Statistical Interpretation

While the study examined the statistical relationship between shaving frequency and the incidence of acne, the results yielded no statistically significant correlation. The application of Chi-square and Fisher's Exact tests produced p-values of 0.185 and 0.282, respectively, both exceeding the conventional significance threshold of 0.05 (Aalemi et al., 2019). These findings suggest that shaving frequency does not exhibit a direct relationship with acne incidence, indicating the presence of other underlying factors contributing to the observed acne cases within the study sample (Bajelan et al., 2020).

Nevertheless, despite the lack of statistical significance, the descriptive data revealed intriguing trends. Among frequent shavers, 87.5% reported having acne, compared to 57.1% among those who shaved infrequently or not at all. Although this difference suggests a potential association, it should be interpreted with caution, as the small sample size limits the statistical power to draw robust conclusions (Bajelan et al., 2020). The absence of confirmed relationships indicates that further investigation is warranted, particularly through studies involving larger sample sizes or

Complicating the interpretation of these findings, several unmeasured confounding factors may have influenced the outcomes. The limited sample size (n = 15) reduces the sensitivity to detect subtle or complex variable interactions. Potential confounders such as individual skin sensitivity, blade hygiene, replacement frequency, and the use of aftershave or skincare products warrant further consideration when analyzing the relationship between shaving and acne development (Aalemi et al., 2019; Sarkar et al., 2016).

Hygiene, Lifestyle Factors, and Future Directions

The importance of meticulous attention to personal hygiene, particularly facial cleansing regimens, is emphasized in parallel studies that demonstrate significant relationships between overall hygiene practices and acne severity (Kamel et al., 2022). The potential implications of these findings align closely with the current study's focus on grooming behaviors—specifically shaving—and their relationship with skin health. A deeper understanding of these interactions may contribute to the development of preventive strategies or treatment approaches aimed at reducing acne occurrence among young adults.

Moreover, lifestyle factors such as dietary habits, stress levels, physical activity, and grooming practices play a substantial role in the manifestation and severity of acne vulgaris.

Integrating these variables is essential for obtaining a comprehensive understanding of how multiple influences converge to affect acne outcomes in specific populations. For instance, studies have reported that dietary factors such as high-glycemic foods and dairy consumption may be associated with increased acne severity; exploring their interplay with grooming behaviors could provide further insight into effective prevention and management strategies (Gürel et al., 2025).

In summary, the convergence of participants' demographic factors, shaving behavior, and acne prevalence forms a complex interplay that warrants meticulous analysis. Future research employing larger sample sizes and longitudinal designs would benefit from simultaneously examining behavioral and biological determinants that shape acne experiences among young men. Continued efforts should aim to clarify these interactions using rigorous methodologies, thereby facilitating advancements in acne management strategies and supporting public health initiatives targeting young adult populations across diverse settings (Bajelan et al., 2020).

Limitations of the Study

One important limitation of this study is the small number of participants (n = 15), which may affect the reliability of the results. Larger-scale studies are typically required to obtain results that are more accurate and generalizable to a broader population. Therefore, future research should involve a greater number of participants to better understand any potential link between shaving behavior and acne vulgaris (Wolkenstein et al., 2018). Further studies should also consider additional variables such as shaving techniques, the types of products used (e.g., creams or aftershaves), and participants' skin types. These factors are crucial because different shaving methods and products can have varying effects on the skin, potentially triggering or preventing acne (Sari et al., 2023; Awaloei et al., 2021)..

Recommendations for Future Research

Additionally, the link between shaving and acne may be influenced by other lifestyle and environmental factors. As noted in previous studies, variables such as air pollution, diet, and cosmetic use can significantly impact skin conditions (3). Future research should therefore examine these broader influences to gain a more comprehensive understanding of how shaving habits relate to acne occurrence. Considering these factors will enhance understanding of how daily grooming behaviors affect skin health and expand current knowledge of acne vulgaris. In summary, although some preliminary trends were observed in the data, the lack of strong statistical evidence makes it difficult to draw definitive conclusions regarding shaving frequency and acne occurrence. Increasing the number of participants and accounting for additional variables—such as pre-existing skin conditions, skincare products used, and shaving techniques—will be essential to uncover the complex relationships underlying acne development. A more rigorous research design will contribute to a clearer understanding of how personal grooming habits influence skin health and may inform more effective strategies for acne prevention and management.

CONCLUSION

The trend observed in this study indicates that most respondents shaved frequently, and a majority of them also experienced acne. However, no significant relationship was found between shaving frequency and the occurrence of acne. In addition to the small sample size, another reason this study did not provide strong evidence of correlation is that acne is influenced by multiple factors beyond shaving frequency. It is also affected by shaving techniques, the products used, individual skin profiles, personal hygiene, and daily activities, all of which vary among individuals. While the descriptive data suggested that acne was more

prevalent among frequent shavers, statistical analysis using the Chi-square and Fisher's Exact tests did not confirm a significant correlation. The findings align with existing literature emphasizing that acne development is primarily driven by intrinsic biological factors such as hormonal fluctuations, sebaceous gland activity, follicular hyperkeratinization, and bacterial proliferation rather than grooming habits alone. Nevertheless, the observed trends suggest that shaving may act as an aggravating factor for some individuals, particularly when combined with poor skin hygiene or unsuitable shaving practices. Given the study's limitations, including the small sample size and lack of control over variables such as shaving method, skin type, and product use, these findings should be interpreted with caution. Future research involving larger and more diverse populations, along with more rigorous methodological controls, is essential to better understand the nuanced relationship between grooming behaviors and acne. By integrating both biological and behavioral perspectives, future studies may yield clearer insights into preventive skincare strategies for acne-prone individuals, particularly young adult males who engage in regular shaving routines.

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