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Association of Tiktok Use Duration and Patterns with Acne Vulgaris Severity in Adolescents

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KEYWORDS
Acne vulgaris; TikTok; adolescents; social media

ABSTRACT
Acne vulgaris is a common skin condition in adolescents influenced by internal and external factors, including digital behavior. TikTok, a widely used social media platform, may affect acne severity through exposure to certain content and psychosocial stress. This cross-sectional study involved 20 adolescents aged 13–19 who actively use TikTok. Data were collected via questionnaire on frequency, daily duration, predominant time of use, content type, and interest in self-medication. Acne severity was classified using the Lehmann system, and data were analyzed using Chi-Square and Fisher's Exact tests. Significant associations were found between acne severity and daily duration of use ($p = 0.007$), predominant time of use ($p = 0.001$), content type ($p = 0.01$), and interest in self-medication ($p = 0.017$). Frequency of access showed no significant association ($p = 0.496$). These results highlight the need for education on healthy social media use, collaboration between healthcare providers and digital platforms, and improved adolescent dermatology literacy to reduce TikTok's negative effects on skin health. Prolonged use, nighttime scrolling, and passive content consumption on TikTok are linked to increased acne severity. Promoting responsible social media habits is vital to protect adolescents' skin health.

DOI:

INTRODUCTION

Acne vulgaris is one of the most common dermatological conditions in adolescents, with a prevalence of approximately 85% in individuals aged 12 to 24 years (Gugulus et al., 2025). This condition is influenced not only by internal factors such as hormonal and genetic changes but also by external factors including lifestyle behavior and psychosocial stress. The rapid advancement of digital technology and the increasing use of social media among teenagers have raised concerns regarding its contribution to acne severity. TikTok is currently one of the most popular and fastest-growing social media platforms, with a significant number of teenage users worldwide (Koswara, 2025; Rozati, 2025).

TikTok offers highly engaging short-form video content with a personalized algorithm that keeps users scrolling through the platform for extended periods (Wang, 2025). Excessive use has been linked to various mental health issues, including sleep disturbances, digital stress, and an increased risk of anxiety and depression, particularly among younger users (Chen et al.,

2025; Vettriselvan et al., 2025). Excessive exposure to this kind of psychosocial stress may contribute to acne severity through several mechanisms, including sebum production, skin inflammation, and impaired skin cell regeneration (Bobok & Taskesen, 2025; Thomas et al., 2025). In addition to its psychological impacts, TikTok provides easy access to content emphasizing idealized beauty standards, which may influence body image perceptions and increase social pressures related to one's appearance, including facial skin conditions such as *acne* (Aqilah & Trihandayani, 2024; Maryam et al., 2025).

TikTok has now undeniably become a major source of skin care information for teenagers, offering tips, product reviews, and even dermatological advice from influencers or users without medical backgrounds (Selezneva, 2024; Wirsén & Olsson, 2025). The quality and accuracy of the content circulating on the platform vary widely, which acts like two sides of the coin (Mancino et al., 2025; Wijesekara, 2025). While some information might be helpful, misinformation or suggestions not tailored to individual needs may eventually worsen skin conditions (Miao et al., 2025; Shipowick et al., 2025).

This study aims to investigate how the duration and pattern of TikTok use, including the type of content consumed, are associated with the severity of *acne vulgaris* in adolescents (Iyengar et al., 2025; Prakesh & Abbas, 2025). This study is novel as it explores an under-researched link between social media usage patterns and *acne* severity in Indonesia's adolescent demographic, contributing new evidence to the psychosomatic dermatology field. The findings are expected to provide a more comprehensive understanding of the interaction between digital activity, psychosocial stress, and skin health manifestations in this young population (Hassan & Deshun, 2025; Mochel et al., 2025).

METHOD

This is an observational analytical study with a cross-sectional design to analyse the association of duration and pattern of TikTok use and the severity of acne vulgaris in adolescents. Study respondents are 20 adolescents (aged 13–19 years) who met the inclusion criteria, namely actively using TikTok for at least the past three months. Data were collected through a structured questionnaire to gather information on frequency (number of accesses per day), duration (TikTok scrolling time per day: short <1 hour, moderate 1–3 hours, long >3 hours), predominant time (TikTok accessed on afternoon, evening, night), interest in self-medication (interested or not interested), and type of content (most frequently accessed beauty, entertainment, gaming, education contents). Acne vulgaris severity was assessed based on the Lehmann classification, which is divided into mild, moderate, and severe acne based on the number and type of lesions. Data analysis was performed using Chi-Square test and Fisher's exact test to evaluate the association between TikTok use variables and acne severity.

RESULT AND DISCUSSION

Study Characteristics

Twenty respondents were involved in this study with 35% male and 65% female. Duration and frequency of TikTok use varied considerably, with the majority reporting prolonged use (>3 hours daily) in 60% of cases, moderate frequency (3–5 times per day) in 45% of respondents, and 40% of participants accessed TikTok predominantly at night.

Contents consumed on the platform also varies, with beauty-related content being the most common (45%). Interest in self-medication was reported by 55% of respondents. In terms of acne severity, the largest proportion (45%) has mild acne. Detailed overview of participant characteristics is shown in Table 1.

Table 1. Study Subjects' Characteristics

Characteristics	Category	N	%
Gender	Male	7	35%
	Female	13	65%
Duration	Short (<1 hours)	4	20%
	Moderate (1-3 hours)	4	20%
	Long (>3 hours)	12	60%
Frequency	Low (< 3 times/day)	3	15%
	Moderate (3-5 times/day)	9	45%
	High (>5 times/day)	8	40%
Predominant Time of use	Afternoon	6	30%
	Evening	6	30%
	Night	8	40%
Content	Beauty	9	45%
	Gaming	5	25%
	Entertainment	6	30%
Interest in Self-medication	Interested	11	55%
	Not interested	9	45%
Acne Severity	Mild	11	55%
	Moderate	4	20%
	Severe	5	25%

Source: Primary data processed by researchers, 2024

Analysis of Duration with Acne Severity

Statistical analysis showed a significant association between duration of TikTok scrolling time and acne vulgaris severity, with p-value of 0.007, indicating that longer TikTok usage time is statistically directly related to increased acne severity in adolescents. Figure 1 shows the distribution of acne severity based on TikTok usage time while Table 2 shows the results of the hypothesis test between TikTok usage time and acne severity.

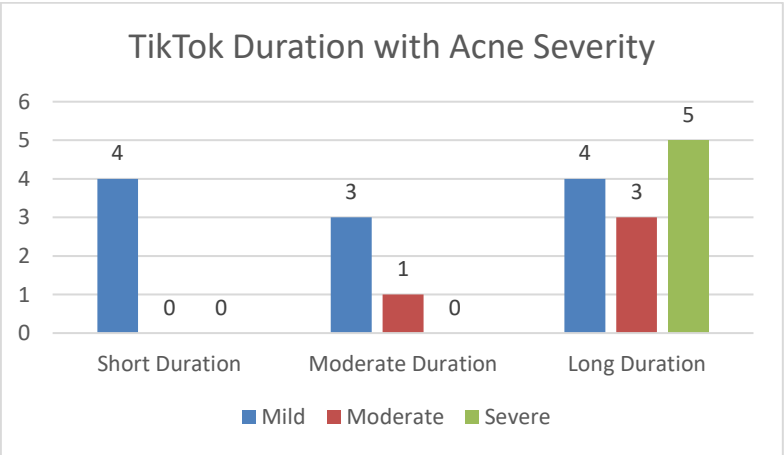

Figure 1. Duration of acne severity based on TikTok Duration

Source: Primary data processed by researchers, 2024

Table 2. Hypothesis test between TikTok duration and severity of acne

Duration of TikTok use	Acne Severity			Total	*p*
	Mild	Moderate	Severe		
Short	4	0	0	4	0.007
Moderate	3	1	0	4	
Long	4	3	5	12	
Total	11	4	5	20	

Source: Primary data processed by researchers, 2024

Analysis of Frequency with Acne Severity

Statistical analysis showed no significant association between TikTok usage frequency and acne vulgaris severity, with p-value of 0.496. This suggests that adolescents' frequency of TikTok use is not directly associated to acne severity. Figure 2 shows the distribution of acne severity based on TikTok usage frequency. Table 3 shows the results of the hypothesis test between the two variables.

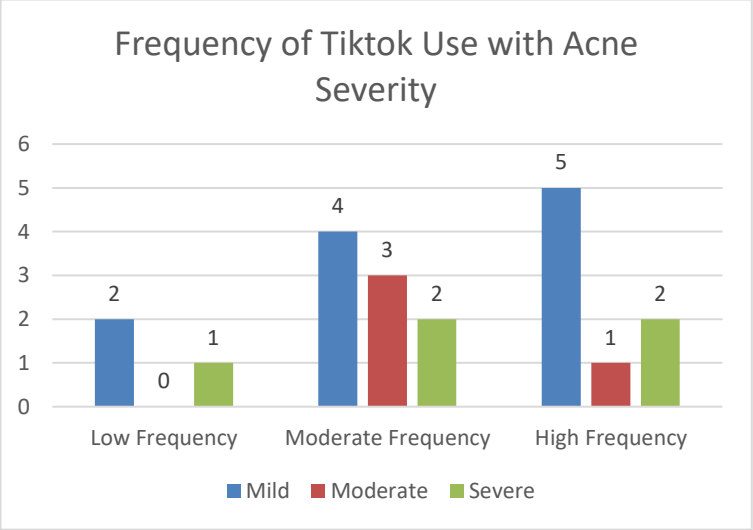

Figure 2. Distribution of Acne Severity based on Frequency

Source: Primary data processed by researchers, 2024

Table 3. Hypothesis Test Between Frequency and Acne Severity

Frequency of TikTok Use	Acne Severity			Total	*p*
	Mild	Moderate	Severe		
Low	2	0	1	3	0.496
Moderate	4	3	2	8	
High	5	1	2	19	
Total	11	4	5	20	

Source: Primary data processed by researchers, 2024

Analysis of Predominant Time of TikTok Use with Acne Severity

Statistical analysis showed a significant association between predominant time of TikTok use and severity of acne vulgaris, with p-value of 0.001. This suggests that TikTok use at certain times, particularly during nighttime, is statistically associated with increased acne severity in adolescents. Figure 3 shows the distribution of acne severity based on the predominant time of TikTok use. Table 4 shows the results of the hypothesis test between the two variables.

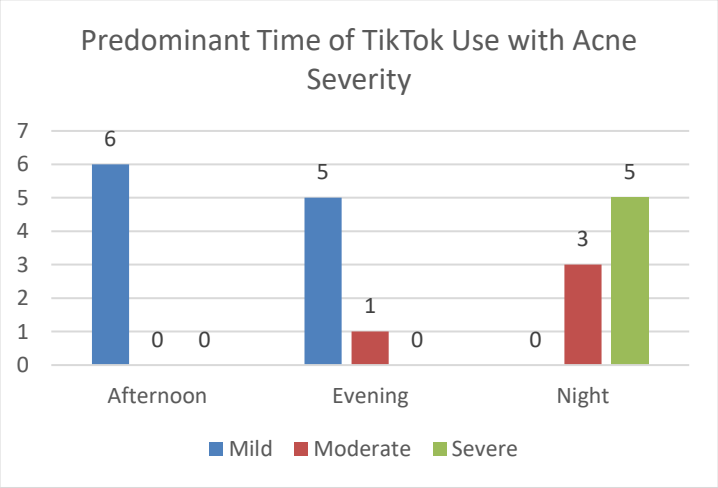

Figure 3. Distribution of Acne Severity based on Predominant Time

Source: Primary data processed by researchers, 2024

Table 4. Hypothesis Test Between Predominant Time and Acne Severity

Predominant Time of Use	Acne Severity			Total	*p*
	Mild	Moderate	Severity		
Afternoon	6	0	0	6	0.001
Evening	5	1	0	6	
Night	0	3	5	8	
Total	11	4	5	20	

Source: Primary data processed by researchers, 2024

Analysis of TikTok Content Type with Acne Severity

Statistical analysis showed a significant association between the type of content accessed on TikTok and the severity of acne vulgaris, with p-value of 0.01. This indicates that passive entertainment content, such as drama, gossip, or aimless scrolling, is statistically associated with increased acne severity in adolescents. Figure 4 shows the distribution of acne severity based on the type of TikTok content. Table 5 shows the results of the hypothesis test between the two variables.

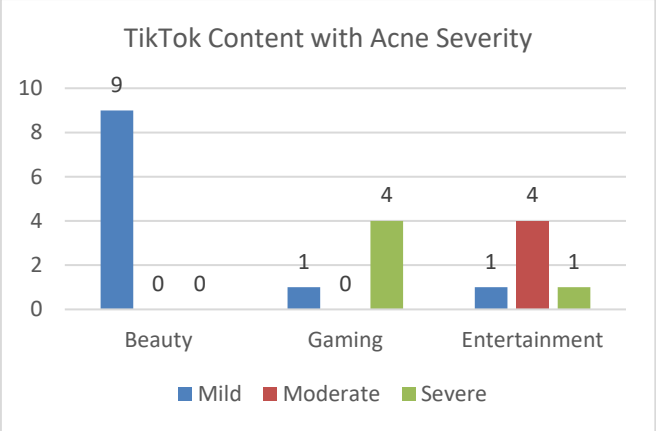

Figure 4. Distribution of Acne Severity based on Content

Source: Primary data processed by researchers, 2024

Table 5. Hypothesis test between content type and acne severity

Content Type	Acne Severity			Total	*p*
	Mild	Moderate	Severity		
Beauty	9	0	0	9	0.010
Gaming	1	0	4	5	
Entertainment	1	4	1	6	
Total	11	4	5	20	

Source: Primary data processed by researchers, 2024

Analysis of Interest in Self-Medication with Acne Severity

Statistical analysis showed a significant association between self-medication interest and acne vulgaris severity, with p-value of 0.017. This indicates that adolescents with a higher interest in self-medication tend to have significantly different levels of acne severity compared to those who are less interested. Figure 5 shows the distribution of acne severity based on interest in self-medication, while Table 6 shows the results of the hypothesis test between the two variables.

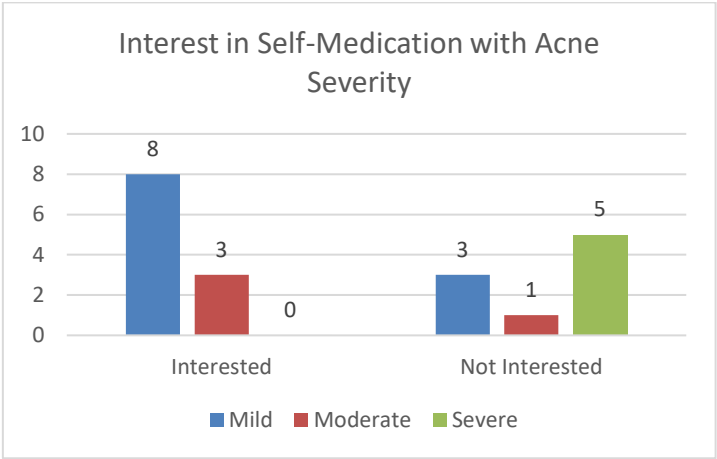

Figure 5. Distribution of Acne Severity based on Interest in Self-Medication

Source: Primary data processed by researchers, 2024

Tabel 6. Hypothesis test between interest in self-medication and acne severity

Interest in Self-Medication	Acne Severity			Total	*p*
	Mild	Moderate	Severe		
Interested	8	3	0	11	0.017
Not Interested	3	1	5	9	
Total	11	4	5	20	

Source: Primary data processed by researchers, 2024

Analysis of Duration with Predominant Time of Use

A notable finding of this study is the significant association of TikTok scrolling duration with predominant time of use, showing p-value of 0.001. This suggests that adolescents who spend more time on TikTok tend to engage with the platform during specific periods, particularly nighttime. Figure 6 illustrates the distribution of usage duration and predominant time of use, while Table 7 shows the hypothesis test results for these two variables.

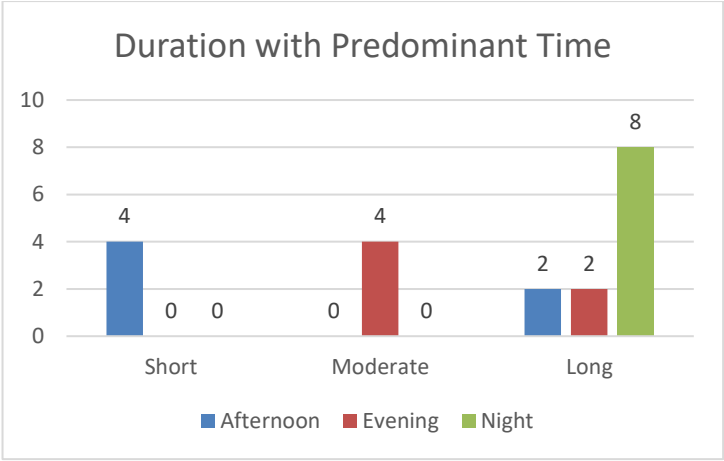

Figure 6. Distribution of predominant time based on duration

Source: Primary data processed by researchers, 2024

Table 7. Hypothesis test between duration and dominant time

Duration of TikTok scrolling	Predominant Time			Total	*p*
	Noon	Afternoon	Evening		
Short	4	0	0	4	0.001
Moderate	0	4	0	4	
Long	2	2	8	12	
Total	6	6	8	20	

Source: Primary data processed by researchers, 2024

Analysis of Type Of Content with Self-Medication Interest

Statistical analysis showed a significant association of dominant type of TikTok content accessed with self-medication interest in adolescents, showing p-value of 0.006. The result indicates that adolescents who engaged with educational contents including skin care and

beauty tips or basic medical information tend to have a higher interest in self-medication compared to those who predominantly access passive entertainment content such as gossip or drama. Exposure to informative content may encourage adolescents to be more active in seeking and implementing self-treatment for skin problems, including acne vulgaris. Figure 7 illustrates the distribution of self-medication interest based on the dominant type of TikTok contents accessed, whereas Table 8 presents the results of the hypothesis test between the two variables.

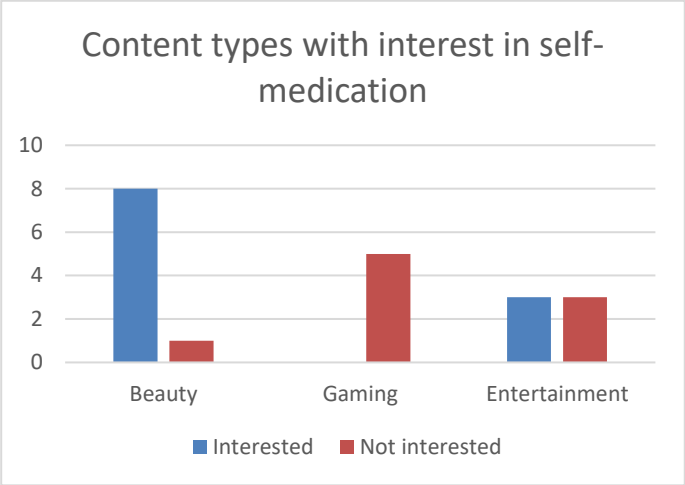

Figure 7. Distribution of Interest in Self-Medication based on Content Types
Source: Primary data processed by researchers, 2024

Table 8. Hypothesis Test between Content Types and Interest in Self-Medication

TikTok Content	Interest in Self-Medication		Total	*p*
	Interested	Not Interested		
Beauty	8	1	9	0.006
Gaming	0	5	5	
Entertainment	3	3	6	
Total	11	9	20	

Source: Primary data processed by researchers, 2024

CONCLUSION

This study shows that the duration and predominant time of TikTok use, types of content viewed, and adolescents' interest in self-medication are significantly associated with the severity of *acne vulgaris*, while daily frequency of access is not. These findings suggest that specific patterns of social media engagement, especially on visually focused platforms like TikTok, can influence skin health in adolescents. Promoting awareness and encouraging responsible use of such platforms are essential to help prevent worsening acne. Future research should explore the underlying psychological and physiological mechanisms linking social media behaviors with acne severity and evaluate intervention strategies to mitigate these effects.

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