Orginal Article

Truncal Acne in Adolescents and Young Adults in Saudi Arabia: A Self-Reported Perception

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Abstract

Aim: Acne vulgaris is a prevalent chronic inflammatory disorder of the pilosebaceous unit, primarily affecting adolescents. The burden of acne goes beyond the skin, and several studies have confirmed the link between acne, psychiatric comorbidities, and impaired social interaction. Data on Truncal acne (TA), particularly its effects on everyday life and overall quality of life, are sparse in existing studies.

Materials and Methods: This cross-sectional, questionnaire-based study.

Results: A total of 755 participants completed the survey. Majority of them were 15-25 years old, and (55.1%) were female. Participants considered psychological stress, followed by a diet high in carbohydrates or lipids, and sleeplessness to be acne triggers. more participants aged > 20 years thought daily about TA than participants aged < 20 years, while no significant results were observed among participants age groups and the negative effect of TA on their daily life, embarrassment feeling during sport practicing or swimming, choosing their clothes, negative comments from friends, or poor self-confidence. A significant association was observed between truncal and facial acne.

Conclusion: Our findings advocate for a more nuanced understanding of TA, its psychological impact, and the necessity for tailored treatment approaches that consider the disease's repercussions.

Keywords: Acne vulgaris, Truncal acne, facial acne, adolescence

Introduction

Acne vulgaris is a prevalent chronic inflammatory disorder of the pilosebaceous unit, primarily affecting adolescents.[1] A recent population-based study conducted in 20 countries revealed that the overall prevalence of acne is 20.5%. The highest prevalence was 28.3% among the 16-24 years age group. Females have a higher prevalence of acne than males, 23.6% and 17.5%, respectively.[1] The pathophysiology of acne is multifactorial and involves four phases: sebum over-production, abnormal keratinization, hyperproliferation of *Cutibacteria acne*, and inflammatory immune response.[2]

Regarding Truncal acne (TA), notable differences in its pathophysiology have been observed. These include a reduced influence of sebum secretion and a decrease in the diversity of *C. acnes* phylotype, particularly phylotype IA1, which accounts for 95.6% of cases, compared with its prevalence of 72.7% on the face. Additionally, factors such as sweating and clothing that cause occlusion are significant in the development of TA.[3,4]

The burden of acne goes beyond the skin, and several studies have confirmed the link between acne, several psychiatric comorbidities, and impaired social interaction.[5] Acne manifests in two primary forms: inflammatory lesions, such as papules, pustules, nodules, and cysts, and non-inflammatory lesions, which include both open and closed comedones.[2] These lesions predominantly occur in areas rich in sebaceous glands, like the face, shoulders, and trunk (i.e., chest and back).[6] TA is more likely to develop inflammatory lesions.[3] The prevalence of acne varies between less than 1% to 14%, with about 30% to 60% of those experiencing facial acne also showing signs of TA, based on the demographics studied.[6]

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Research led by *Jerry Tan* and others has demonstrated that TA typically begins earlier than facial acne, can lead to more severe conditions, and shows no substantial difference between genders in its occurrence.[6] It has been noted that individuals suffering from TA often experience more severe symptoms, greater disruption to their quality of life (QoL), and increased stress compared to those with only facial acne.[6] Although acne is a prevalent condition among adolescents, the focus of most research has been on facial acne. Data on TA, particularly its effects on everyday life and overall QoL, are limited in existing studies.[3] This research aims to explore the self-reported rates and perceived effects of TA on the everyday lives of participants in Saudi Arabia, thereby addressing the knowledge gap concerning adolescent health.

Materials and Methods

This cross-sectional study was conducted in Saudi Arabia. An anonymous web-based questionnaire consisting of 18 items about demographic data, presence of TA, and TA repercussions on adolescent's life. The questionnaire used for data collection was adapted from a similar study.[3] Ethics Committee approval was obtained from the Qassim University College of Medicine (approval number: T010524, date: 01.05.2024). The inclusion criteria were male or female subjects aged ≥ 15 years who had self-reported acne, understood Arabic, and agreed to provide informed consent. Adolescents were invited to participate in the survey via social media.

Statistical analysis

In this primarily descriptive study, no specific minimum sample size was considered necessary. The analysis included subgroup evaluations based on sex, age categories (under 18, 18-25, and over 25 years), and varying degrees of TA severity-ranging from mild to very severe. The study also considered the impact on QoL by categorizing participants into groups from those not affected at all to those constantly affected. The percentages were computed after excluding any missing data. The chi-square test (χ^2) was used to determine the relationships among the conditions studied. All statistical analyses were performed using IBM SPSS Statistics software (25.0).

Results

Demographics and General Data

In terms of demographic and general information about TA, 755 participants completed the survey. Majority of them were 15-25 years old (67.5%), and (55.1%) were female. Among the global participants, only 650 (86.1%) have reported TA, with (48.2%) for females. When grouping TA severity for participants who have TA, (73.7%) reported mild to moderate, while (26.3%) reported severe to very severe TA, (87.2%) of TA patients had or already had facial acne (FA), (84.3%) of TA & FA patients reported mild to moderate FA, and (15.7%) reported severe to very severe FA. (73.23%) of TA patients reported at least, one member of the family also has TA. Detailed demographic truncal and facial acne data are shown in Table 1.

Truncal Acne Triggers

Participants considered psychological stress (51.8%), followed by a diet high in carbohydrates or lipids (42.6% and 42.4%), respectively, and sleeplessness (28.9%) were identified as acne triggers and (41.5%) were unaware of what could trigger TA. Notable statistical differences were noted in the identification of the following factors as triggers for TA: high carbohydrate diet (12-15 years: 1.9%, 15-20 years: 16.2%, 20-25 years: 14.7%, > 25 years: 10.5%; $P = 0.008$), smoking (12-15 years: 0.0%, 15-20 years: 0.5%, 20-25 years: 0.8%, > 25 years: 2.3%; $P = 0.001$), and psychological stress (12-15 years: 0.9%, 15-20 years: 18.4%, 20-25 years: 18.1%, > 25 years: 14.3%; $P = 0.018$).

More females than males (28.7% vs. 13.9%, $P = 0.0001$) considered that a high carbohydrate diet, high lipid diet (25.2% vs. 17.2%, $P = 0.043$), consumption of milk products (10.5 % vs. 2.4%, $P = 0.0001$), cosmetic products (9.0% vs. 2.4%, $P = 0.0001$), stress (36.0% vs. 15.8%, $P = 0.0001$), and sleeplessness (18.8% vs. 10.1%, $P = 0.0001$) triggered TA. Over three-quarters of the female participants (80.8%) indicated that menstruation was the primary trigger for their TA. Additionally, a significant difference was observed among age groups, with a higher percentage of females over 20 years old (49.5% compared to 31.2%; $P = 0.044$) identifying menstruation as a trigger for TA than those under 20 years old.

Treatment Information Sources

Worldwide, 56.4% of the respondents sought advice from at least one healthcare provider to learn about treatments for TA; of these, 38% approached a dermatologist, 11.8% consulted a pharmacist, and 6.6% visited a general practitioner. Additionally, 49.9% of the participants sourced their information from the internet. Family members were a source of information for 18.8% of respondents, while friends provided information for 14.4%. Notably, 28.2% of the participants did not seek any information regarding TA treatment.

The majority of participants aged > 20 years consulted a dermatologist than those aged < 20 years (27.7% vs. 10.3%; $P = 0.002$), family members (10% vs. 8.8%; $P = 0.001$), friends

(8.6% vs. 5.9%; $P = 0.017$), and gathering information form the internet (32.2% vs. 17.8%; $P = 0.001$).

More females consulted a dermatologist than males (23.8% vs. 14.2%; $P = 0.001$), family members (12.6% vs. 6.2%; $P = 0.002$), friends (10.2% vs. 4.2%; $P = 0.0001$), and the Internet (35.9% vs. 14%; $P = 0.0001$). No significant relationship was observed between the severity of TA and the availability of information by consulting a general practitioner or a dermatologist ($P = 0.573$, $P = 0.164$), respectively. The detailed results are shown in Figure 1-3.

Table 1. Demographic and general characteristics of truncal acne

	Global (n = 755)	Male (n = 339) (44.9%)	Female (n = 416) (55.1%)
Age, years			
12-15	24 (3.2%)	6 (0.8%)	18 (2.4%)
15-20	238 (31.5%)	94 (12.5%)	144 (19.1%)
20-25	272 (36%)	108 (14.3%)	164 (21.7%)
> 25	221 (29.3%)	131 (17.4%)	90 (11.9%)
Truncal acne, yes (%)	650 (86.1%)	286 (37.9%)	364 (48.2%)
Truncal acne severity (n = 650), n (%)			
Mild	137 (21.1%)	53 (8.15%)	84 (12.9%)
Moderate	342 (52.6%)	142 (21.85%)	200 (30.8%)
Severe	149 (22.9%)	78 (12.0%)	71 (10.9%)
Very severe	22 (3.4%)	13 (2.0%)	9 (1.4%)
Facial acne (n = 650), n (%)			
Never had acne	83 (12.8%)	39 (6.0%)	44 (6.8%)
I had acne in the past	144 (22.2%)	76 (11.7%)	68 (10.5%)
Currently having acne	423 (65.0%)	171 (26.3%)	252 (38.8%)
Facial acne severity (n = 650), n (%)			
Mild	300 (46.15%)	135 (20.8%)	165 (25.4%)
Moderate	248 (38.15%)	105 (16.2%)	143 (22.0%)
Severe	82 (12.6%)	38 (5.9%)	44 (6.8%)
Very severe	20 (3.1%)	8 (1.2%)	12 (1.9%)
Family history of acne: **yes** (n = 650), n (%)	476 (73.23 %)	197 (30.31 %)	279 (42.92 %)
Occupation (n = 650), n (%)			
High school student	128 (19.7%)	40 (6.15%)	88 (13.5%)
College student	227 (34.92%)	89 (13.7%)	138 (21.2%)
Employee	157 (24.15%)	113 (17.4%)	44 (6.8%)
Unemployed	138 (21.23%)	44 (6.8%)	94 (14.5%)

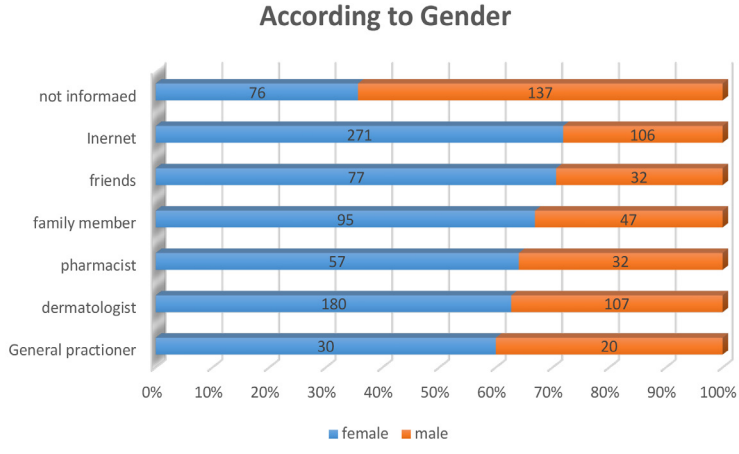

Figure 1. Information source according to gender

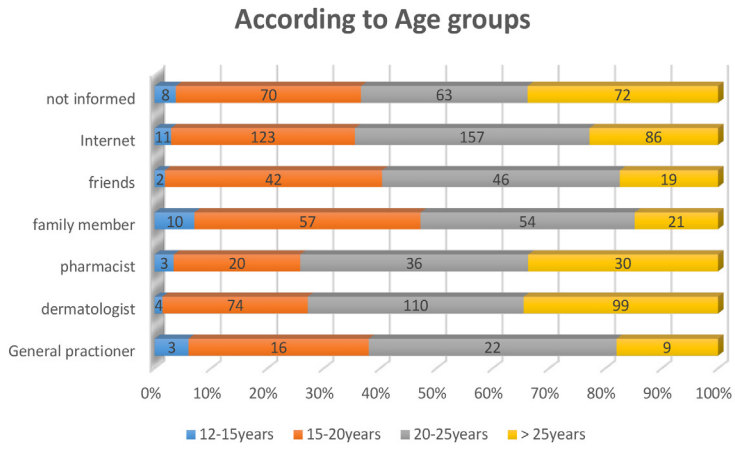

Figure 2. Information source according to age groups

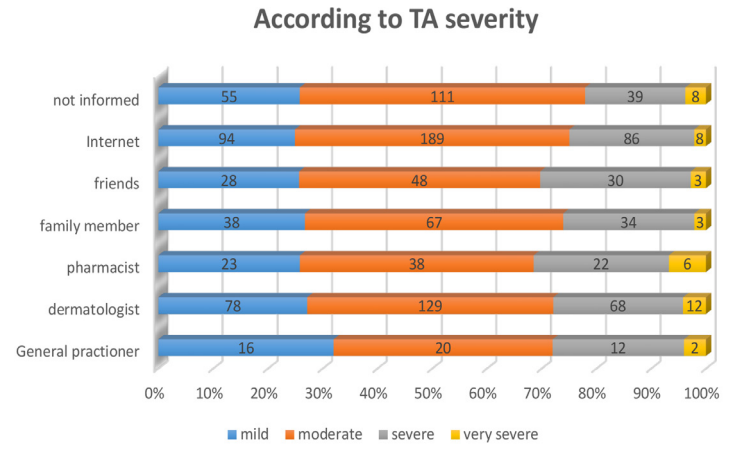

Figure 3. Information source according to TA severity
TA: Truncal acne

Daily Life and Quality of Life

More than three-quarters (85.7%) of participants thought about TA, among whom (23.4%) often (24.9%) daily. At the same time, (67%) of the participants reported negative effects on daily life (32.2% mild, 20.3% moderate, and 14.6% severe negative effects). On the other hand, 36.6% of the participants did not report any embarrassment in their social relationships because of TA and other factors (14.3% rarely, 30.3% sometimes, and 18.8% always).

62.1% of all participants felt embarrassment while practicing a sport or swimming (12.2 rarely, 26.9% sometimes, and 23.0% always). More than half of the participants reported that TA had an effect on choosing clothes (7.9% rarely, 22.5% sometimes, and 27.2% always).

About two-thirds of participants (68.9%) reported no negative comments from friends about their TA, while (5.4%) always faced such situations. Moreover, more than half of the participants felt poor self-confidence due to TA (14.4% rarely, 23.6% sometimes, and 15.2% always).

Significantly, participants who had mild to moderate TA thought in a daily manner about their acne more than participants who had severe or very severe (14.8% vs. 10.1%; $P = 0.0001$). Additionally, more participants with mild or moderate TA reported no negative effect on daily life. Compared with those with severe or very severe TA (29.1% vs. 3.9%; $P = 0.0001$). Participants with severe and very severe TA reported a stronger negative effect on daily life than participants with moderate or mild TA (7.3% severe and very severe TA, 6.4% moderate TA, and 0.9% mild TA; $P = 0.0001$).

More participants with mild or moderate TA reported no embarrassment in social relationships compared with participants with severe or very severe acne (30.9% vs. 5.7%: $P = 0.0001$). More participants with severe or very severe TA always reported feelings of embarrassment in social relationships than participants with moderate TA (8.8% vs. 8.3%: $P = 0.0001$). Similarly, more participants with mild or moderate TA reported no embarrassment feelings during sports practicing or swimming than participants with severe or very severe TA (32% vs. 5.8%; $P = 0.0001$).

According to the participants, more participants with mild or moderate TA reported that TA did not affect their clothes choices than participants with severe or very severe TA (34.5% vs. 7.8%; $P = 0.0001$). In addition, more participants with mild or moderate TA reported that they did not receive any negative comments from their friends due to their TA than participants with severe or very severe TA (56.8% vs. 12.1%; $P = 0.0001$). More participants with mild or moderate TA reported no poor self-confidence than those with severe or very severe TA (39.1% vs. 7.7%; $P = 0.0001$).

Significantly, more participants aged > 20 years were thinking daily about TA than participants aged < 20 years (11.9% vs. 11.0%; $P = 0.001$), while no significant results were observed among participants age groups and the negative effect of TA on their daily life, embarrassment feeling during sport practicing or swimming, choosing their clothes, negative comments from friends, or poor self-confidence.

More females think of TA daily regardless of the severity than males (17.5% vs. 7.4%; $P = 0.0001$). Additionally, more females reported a strong effect of TA on their daily life than males (10.5% vs. 4.1%; $P = 0.0001$). More females feel embarrassment in their social relationships than males ($P = 0.0001$), whereas more males reported no embarrassment in their social relationships (21.9% for males vs. 14.7% for females; $P = 0.0001$). Similarly, more males reported that TA does not affect their choosing of clothes than females (29.3% for males vs. 13.1% for females; $P = 0.0001$). On the other hand, more females reported that TA always affects their choice of clothes than males (21.1% vs. 6.1%; $P = 0.0001$). More females have poorer self-confidence due to TA than males (12.2% vs. 3.0%; $P = 0.0001$). Detailed results are shown in Figures 4-6.

Facial Acne

84.5% of the participants had facial acne at the time of the survey or had a history of facial acne. More females currently have facial acne than males (37.1% vs. 25.8%; $P = 0.016$), whereas more males had facial acne in the past than females (11.5% for males vs. 10.1% for females).

A total of 47.2% of the participants reported mild facial acne, 37.4% moderate, 12.5% severe, and 3.0% very severe facial acne. Participants aged > 20 years had facial acne more than participants aged < 20 years (36.6% vs. 26.2%; $P = 0.0001$), but participants aged > 20 years reported mild facial acne more than participants aged < 20 years (33.8% vs. 13.4%; $P = 0.002$).

A significant association between TA and facial acne was observed ($P = 0.0001$). 39.9% of patients with mild or moderate TA reported mild facial acne, and 7.7% of those with severe or very severe TA reported severe facial acne.

Discussion

The total number of participants who completed the online questionnaire regarding their TA was 650. The majority of respondents were 15-25 years old (67.5%), and (55.1%) were female. This age group is the most common for TA.[1,6] When grouping TA severity for participants who have TA, 73.7% have mild to moderate TA, and 26.3% reported severe to very severe TA. In contrast, Ballanger et al.[3] reported that 68.8% of the adolescents studied had a severe or very severe form. The observed difference in severity is attributed to differences in food and lifestyle among the populations. We found no significant difference between males and females regarding the TA severity.

The majority of the participants (65%) reported having concomitant facial acne, mostly of mild to moderate severity, 84.3%. TA alone is not common, whereas 30% to 60% of patients with FA present with TA, depending on the population.[6,7] Patients with TA reported having at least one member of their family with TA, 73.23%. The statistically significant factors that triggered TA were high carbohydrate diet, smoking, and psychological stress. These findings are similar to those of the TA triggers reported in a similar survey.[3] We found significant gender differences; females considered a high carbohydrate diet, high lipid diet, consumption of milk products, cosmetic products, stress, and sleeplessness to be triggers of their TA more than males.

Moreover, 80.8% of females believed that menstruation was the main trigger for their TA, and significantly more in those with more than 20 years old. This percentage is higher than that reported in another study, which was 51%.[3] Only 10.8% of females reported taking oral contraceptive pills as a trigger for TA.

A high percentage of respondents (83.1%) obtained their information from non-healthcare providers, mainly via internet searches. In a cross-European study, Szepietowski et al.[8] found that physicians were the source of acne information in 27.0% of the population, and the majority of them took their information from friends, family, and the Internet. These findings could explain the adolescents' misunderstanding and delay in treatment. For those who consulted a dermatologist, participants aged > 20 years were significantly higher than participants < 20 years. This could be explained by the cost of professional consultants and easy reach to internet sources. The TA severity dose does not influence the source of information; therefore, consult a general practitioner or dermatologist. In the analysis of the relationship between TA and QoL, 67% of the participants reported a negative effect on daily life, 34.9% rated this negative effect as moderate to severe, and 18.8% always reported embarrassment situations, mainly in activities

that involve exposure of the trunk like sport or swimming. More than half of the participants reported that TA affected their choice of clothes.

There was no significant relationship between age and acne's negative effects of QoL. Female adolescents were more vulnerable to the negative effects of acne than males. Tan et al.[9] reported similar findings regarding the psychological effects of TA in adolescents. Regarding the effects on social interaction, the Majority reported no negative comments from friends about their TA, which could be due to the clothing style in the kingdom that covers most of the body. Moreover, more than half of the participants felt poor self-confidence due to the TA. There is a significant relationship between TA severity and female sex and negative effects on daily life and (always) embarrassment feelings in social relationships, choosing clothes, negative comments from friends, and poor self-confidence.

Interestingly, those with mild to moderate TA tend to think about their condition more frequently than those with severe or very severe acne. A notable correlation was found between the presence of truncal and facial acne. A total of 84.5% of respondents reported either current or past facial acne, a

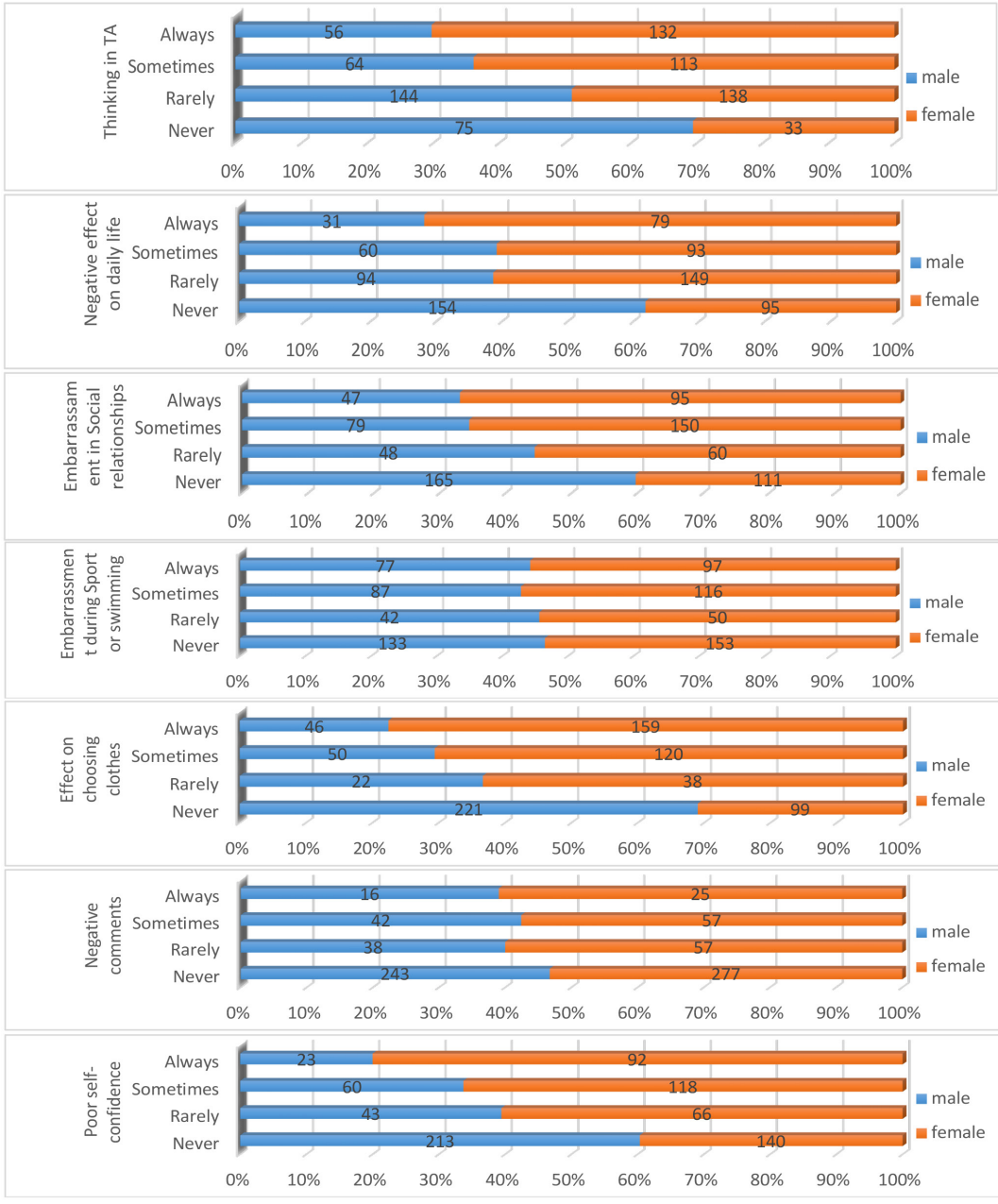

Figure 4. Quality of life according to gender
TA: Truncal acne

condition more prevalent among females. Tan et al.[9,10] reported similar detrimental effects of combined acne forms, affecting over half of the subjects in areas such as self-acceptance, emotional health, embarrassment, self-awareness, and confidence. It is crucial to note that the acne-QoL questionnaire predominantly targets facial acne, which might not provide an accurate assessment for TA.[11] The methodology should be revised to fully capture the personal impact of TA. The Personalizing Acne Consensus of Experts panel suggests that the severity and effects of TA should be evaluated separately from facial acne. They advocate for treatment plans that are tailored to the individual's specific condition and highlight the necessity for a new grading system.[12]

Conclusion

Our findings advocate for a more nuanced understanding of TA, its psychological impact, and the necessity for tailored treatment approaches. Developing a specific TA grading scale is imperative to assess its severity and guide effective management strategies. By assessing these needs, QoL for individuals affected by TA can be enhanced and treatment goals can be personalized and responsive to the unique challenges posed by this condition.

Figure 5. Quality of life according to age groups
TA: Truncal acne

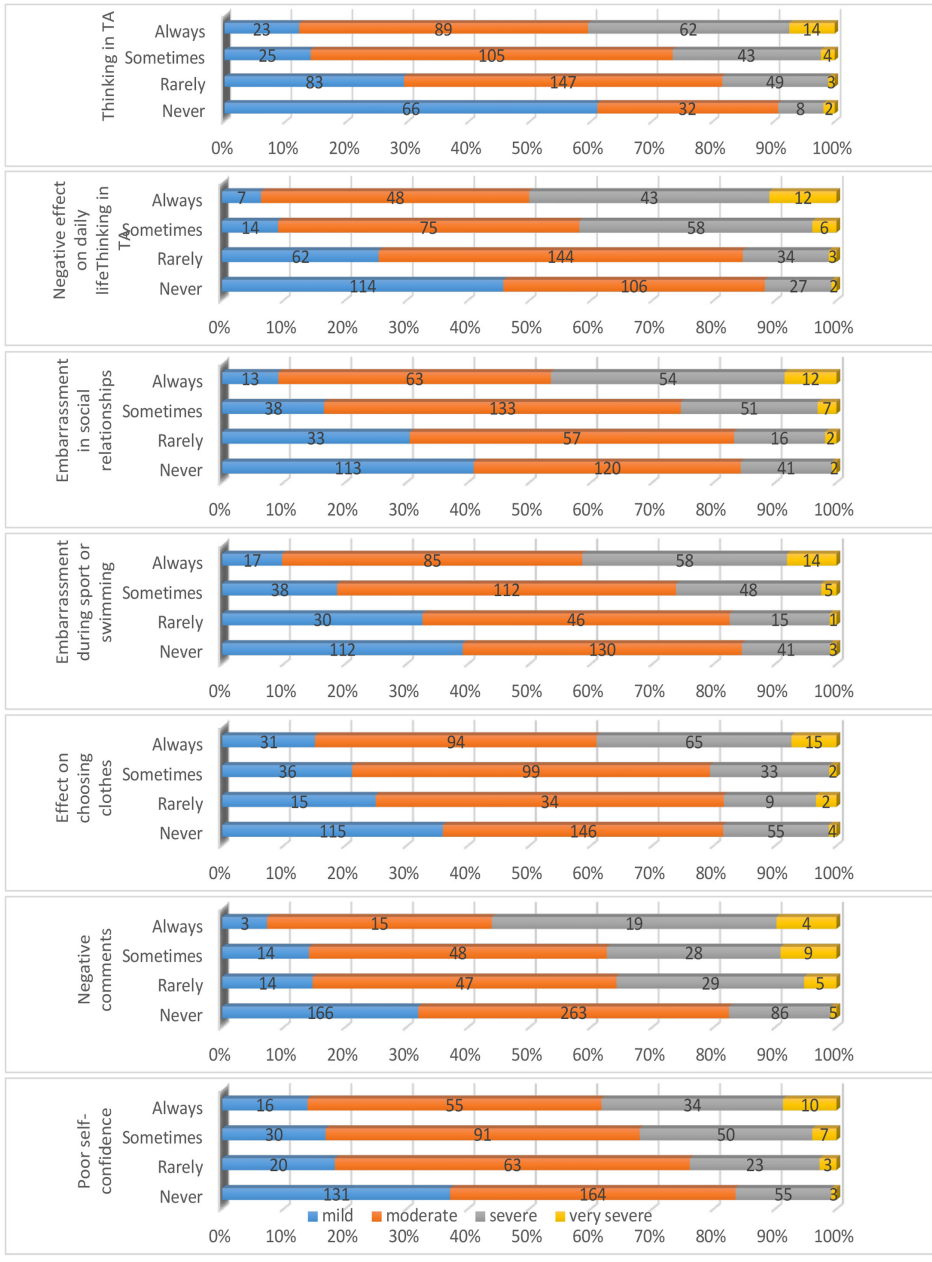

Figure 6. Quality of life according to TA severity
TA: Truncal acne

Ethics

Ethics Committee Approval: Ethics Committee approval was obtained from the Qassim University College of Medicine (approval number: T010524, date: 01.05.2024).

Informed Consent: It was obtained.

Footnotes

Financial Disclosure: The author declared that this study received no financial support.

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