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Acne-related quality of life and mental health among adolescents: a cross-sectional analysis

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Abstract

Background Acne vulgaris is one of the most common skin conditions worldwide among adolescents. Beyond its physical manifestations, acne can leave invisible psychological scars.

Objectives We aimed to examine the protective and risk factors of acne-related quality of life and its association with mental health outcomes.

Methods The analysis included data collected in 2023 from adolescents enrolled in the SEROCO-V-KIDS population-based cohort. By combining the Acne Severity and Acne-Specific Quality of Life (Acne-QoL) scales, the following three groups were established: Acne-LowAQoL (adolescents with acne and low acne-related quality of life), Acne-HighAQoL and NoAcne-HighAQoL. We used multinomial and logistic regression to assess the association between health behaviours and mental health outcomes in these groups.

Results Among 335 adolescents [mean age 16.1 years (SD 1.8), 56% female sex], 65 (19.4%) reported experiencing acne while maintaining a high Acne-QoL, 26 (7.7%) reported having acne and a low Acne-QoL, and 244 (72.9%) reported having nearly no acne. Low engagement in physical activity [adjusted odds ratio (aOR) 0.30, 95% confidence interval (CI) 0.12–0.77], addictive use of social media (aOR 3.78, 95% CI 1.60–8.96), and prolonged screen time (aOR 2.99, 95% CI 1.26–7.08) were independently associated with Acne-LowAQoL. Conversely, those from the group, Acne-HighAQoL, reported higher social support (aOR 1.95, 95% CI 1.07–3.54). Adolescents with Acne-LowAQoL showed lower levels of self-esteem, resilience and increased psychological distress.

Conclusions Among adolescents with acne, physical activity and social support were positively associated with good acne-related quality of life, which translated into better mental health. In contrast, screen time and social media use notably worsened mental health. Dermatologists should incorporate these considerations into clinical practice to ensure effective patient care.

What is already known about this topic?

- Acne vulgaris, one of the most prevalent skin conditions globally among adolescents, is known not only for its physical symptoms but also for leaving invisible psychological scars.
- Despite its commonality, there is a critical need for recent population-based data, as much of the existing research relies on convenience samples.

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What does this study add?

- Distinct from previous research, this study integrates a multidisciplinary approach involving acne severity, acne-related quality of life, and health behaviours, using a population-based sample to offer a more comprehensive understanding of dermatological care, in contrast to the limited scope of convenience samples.

Acne vulgaris is one of the most common skin conditions affecting young people between the ages of 12 and 25 years worldwide.¹ This medical condition is characterized by chronic inflammation of the pilosebaceous unit. Lesions predominantly manifest on the face, a permanently visible area of the body, appearing as comedones, pustules, papules and nodules, and pose a significant risk for subsequent scarring and pigmentation. Acne development is influenced by a variety of internal and external factors,² as highlighted by Dreno *et al.* in their research on the role of the exposome in acne.³ Internal factors include aspects such as diet, genetic predisposition and skin type.^{1,4} Meanwhile, external factors involve living in urban environments, higher socioeconomic status, exposure to pollution, and stress, all of which can contribute to the development of acne.^{3,4}

Estimates of acne prevalence are limited and vary widely, primarily owing to inconsistent definitions across studies.¹ Recent research suggests that while 75–90% of adolescents experience acne, about 60% report mild cases and 15% are affected by severe acne.^{5,6} The skin is often considered the most prominent part of the human body, playing a crucial role in perceived attractiveness.⁷ Acne may seem like a purely physical condition, but its repercussions extend beyond the surface, often leaving invisible psychological scars. It further accentuates the challenges inherent in adolescence, a phase characterized by profound social, physical and psychological transformations.^{8,9} Acne significantly influences the overall wellbeing of adolescents,¹⁰ potentially leading to developmental issues of self-esteem and socialization.^{11,12} Hence, compared with those without acne, adolescents with acne commonly experience poorer mental health outcomes and quality of life (QoL),¹¹ which can contribute to suicidal behaviours in the worst scenarios.¹³

Several factors influence the psychological impact of acne, such as the type and progression of acne, sex and specific health habits,^{14–17} although research in this area remains incomplete.¹⁸ Different types of acne, such as scarring acne, truncal acne and frequent relapses, significantly impact adolescents' QoL with different degrees of severity.¹⁹ Additionally, women generally experience a greater burden of acne than men.²⁰ Certain studies have also revealed that social support from family and friends fosters healthy coping mechanisms among adolescents with acne, protecting them from negative body image concerns.²¹ Most studies also acknowledge the effect of acne on self-esteem through stigmatization and bullying.²²

Over the past decade, a growing body of research has highlighted the need to integrate a greater focus on the health-related QoL in children and adolescents with dermatological conditions in routine clinical practice.²³ Despite the recognized significance of addressing both skin and mental aspects through a multidisciplinary approach to dermatological care, only a few studies integrate acne severity with the Acne-Specific Quality of Life (Acne-QoL) scale,²¹ referring

not only to the physical condition but also to its impact on an individual's overall physical, emotional and social wellbeing. To our knowledge, no studies explored the risk and protective factors associated with both acne severity and Acne-QoL, specifically using a population-based sample. Moreover, much of the literature is outdated and based on relatively small sample sizes.¹⁰ Also, recent data from the postpandemic period are essential. The COVID-19 pandemic and subsequent societal shifts have likely exacerbated known risk factors for acne, primarily owing to factors such as mask wearing and increased stress.²⁴ Consequently, the continuous monitoring of adolescents' wellbeing is particularly important.^{25,26}

The objectives of the present analysis were (i) to examine the protective and risk factors of acne severity and Acne-QoL, and (ii) to evaluate the association of acne and QoL with mental health outcomes.

Patients and methods

Study design, population and data collection

Data were collected from the SEROCov-KIDS study, a population-based prospective cohort study aiming to assess mid- and long-term outcomes of the COVID-19 pandemic on children and adolescents living in the canton of Geneva, Switzerland. Eligibility criteria included being aged between 6 months and 17 years and living in the canton of Geneva at the time of enrolment. Children and adolescents eligible for inclusion in the general population sample were randomly selected from state registries either specifically for this study or for COVID-19 seroprevalence studies conducted in our unit.²⁷ The index registries were provided by the Swiss Federal Office of Statistics and the Cantonal Office for Population and Migration.

The baseline assessment was conducted from December 2021 to June 2022. Referent adults (parents or other legal guardians) were asked to complete a comprehensive health and sociodemographic questionnaire about themselves, their household and their child(ren). Adolescents, aged 14 years or older, were asked to complete a self-reported questionnaire evaluating multiple dimensions of their daily life and their pandemic-related experiences.

The study analysis was based on adolescent-reported data collected from a follow-up questionnaire distributed between April and October 2023. Referent adults and adolescents were sent invitation links to complete their questionnaire on the Specchio-Hub digital data collection platform.²⁸ Informed written or electronic consent was obtained from the parent (or another legal guardian) and from the adolescents themselves. The Geneva Cantonal Commission for Research Ethics approved the study (Project ID No. 2021-01973).

Measures

Questionnaires were developed by experts in epidemiology, psychology and dermatology, following an iterative and incremental process guided by the literature.¹⁰ Data used in this analysis were self-reported by adolescents, unless otherwise stated.

Acne severity

Acne severity was assessed using the Global Acne Severity Scale (GEA Scale).²⁹ This scale was designed to assess and categorize the severity of juvenile facial acne in clinical research. The grades are defined as follows: 0, no lesions; 1, minimal presence; 2, mild acne affecting less than half of the face; 3, moderate acne involving more than half of the face with numerous papulopustules and comedones; 4, severe acne affecting the entire face with numerous lesions; 5, very severe acne with highly inflammatory lesions covering the face. A dichotomous variable was created for this analysis, distinguishing adolescents with mild-to-moderate acne (grades 2–3) from those with nearly none or none (grades 0–1). No severe forms of acne were reported in our sample.

Acne-Specific Quality of Life Scale

Adolescents with acne were further asked to rate their acne-related QoL. The Acne-QoL scale is a self-reported four-item assessment designed to measure how acne impacts various aspects of wellbeing, including emotional and social functioning.³⁰ Each item is scored from 0 to 6 based on response selections ranging from 'extremely' (or extensive) to 'not at all' (or none). Higher scores indicate a greater negative impact of acne on QoL. A dichotomous variable was created (high vs. low levels), and adolescents with an Acne-QoL score below the sample mean -1 SD were considered to have a low Acne-QoL score. Adolescents who were not experiencing acne were considered to have a high Acne-QoL.

Acne-Specific Quality of Life Severity Index

To accurately evaluate the impact of the Acne-QoL score in relation to acne severity, we created an 'Acne-QoL Severity Index' for this analysis. This index combines acne severity and Acne-QoL into a unified measure, using dichotomized versions of both parameters. We identified the following three distinct categories: (i) individuals with acne who report a low QoL (Acne-LowAQoL); (ii) individuals with acne who report a high QoL (Acne-HighAQoL); and (iii) individuals with no or minimal acne who report a high QoL (NoAcne-HighAQoL).

Mental health outcomes

We assessed three dimensions of mental health, namely self-esteem, resilience and psychological distress. Self-esteem was assessed using the Rosenberg's Self-Esteem scale (scale range 10–40, $\alpha=0.89$). Scores below 25 were indicative of low self-esteem. Resilience was assessed using the Brief Resilience Scale (range 1–5, $\alpha=0.85$), where scores below 3.25 were indicative of low resilience.³¹ The

psychosocial subscale of the French version of the Pediatric Quality of Life Inventory short form (PedsQL) was used to assess psychosocial wellbeing, with a good internal consistency (range 0–100, $\alpha=0.87$). Using published thresholds, we dichotomized this scale to identify individuals with poor psychosocial wellbeing.³²

Covariates

Covariates included in the model regrouped the following three major dimensions of adolescent life: sociodemographic characteristics, social support and health behaviours. Sociodemographic characteristics included age, sex, mother's education and household financial status. The financial situation was classified as good if the household could adequately meet its needs and handle unforeseen expenses, while it was considered average-to-poor if they struggled to cover unforeseen expenses or meet current needs. Adolescents' health characteristics included body mass index and the presence of any physical chronic condition. Social support was evaluated using the Multidimensional Scale of Perceived Social Support.³³ This psychometric scale measures perceived social support from family and friends (scale range 1–7, $\alpha=0.75$). Based on the literature, adolescents with a score lower than 2.9 were considered as having low social support.³³ Adolescent lifestyle habits were evaluated by analysing four distinct behaviours. Social media addiction was evaluated using the Bergen Social Media Addiction Scale, a validated tool consisting of six items (scale range 6–30, $\alpha=0.87$).³⁴ Frequent use of social media was defined as a score ≥ 16 . Recreational daily screen time encompassed the amount of time spent on screens for leisure activities per day. The variable was then dichotomized into '4 h and over' or 'less than 4 h'. Sport habits were determined based on whether adolescents reported engaging in a sporting activity at least once a week. Health-compromising behaviours included adolescents' current use of cigarettes, alcohol and drugs. Regular use was defined as consuming any of these substances at least once a week.

Statistics

Descriptive statistics were conducted to compare the characteristics of adolescents with and without mild-to-moderate acne, in addition to adolescents with low vs. high Acne-QoL, using Student's *t*-test and the Wilcoxon test, as appropriate. The prevalence of acne severity and low Acne-QoL were computed using binomial proportions and two-sided 95% confidence intervals (CIs). Multinomial regressions were used to independently identify protective factors and risk factors associated with the Acne-QoL Severity Index, as it has three categories, with the reference corresponding to the group NoAcne-LowAQoL. Prior assumptions of the model and adjustments are presented using a directed acyclic graph (Figure 1). Adjusted odds ratios (aORs) and 95% CIs were estimated using the *vglm* function from the VGAM R package.³⁵ Logistic regressions were used when independently studying the association of the Acne-QoL Severity Index and adolescent mental health. Only 2% of participants had missing data for one of the variables included in the models. All models were therefore based on complete cases. Statistical significance was defined as

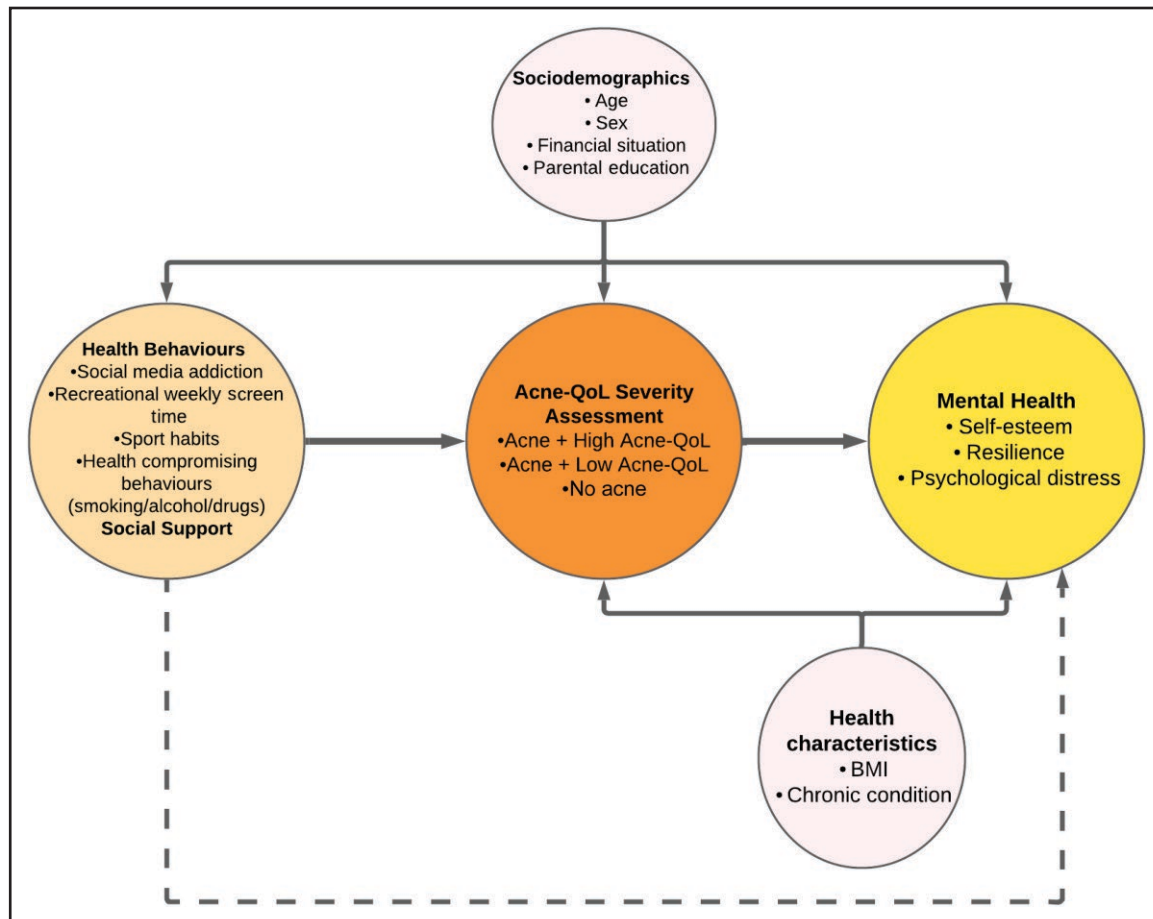


Figure 1 Directed acyclic graph. BMI, body mass index; QoL, quality of life.

a two-sided level of confidence of 95%. All analyses were performed using R (version 4.0.3).

Results

Descriptive results

Of the 451 adolescents who completed the baseline questionnaire, 335 also completed the follow-up questionnaire (participation rate 74.2%). These respondents had an average age of 16.0 years (SD 1.8) and 56% were female. No differences were identified in terms of age, sex and financial situation regarding questionnaire nonresponse.

Overall, 91 of 335 individuals (27.0%, 95% CI 22.6–32.1) reported experiencing mild-to-moderate acne, and 26 of 335 (7.7%, 95% CI 4.1–13.5) reported a low Acne-QoL (Table 1). When combining variables, 65 of 335 respondents (19.4%) reported experiencing acne while maintaining a high Acne-QoL, 26 of 335 (7.7%) reported having acne and a low Acne-QoL and 244 of 335 (72.9%) reported having nearly no acne. Additionally, 44 of 328 individuals (13%) indicated an average-to-poor household financial situation and 9 of 328 (2.8%) had mothers with a primary education level. When descriptively comparing the three identified groups, adolescents with Acne-LowAQoL tended to be younger and reported lower levels of self-esteem, psychosocial

wellbeing and resilience scores. They also tended to spend more time on screens and social media, and less time participating in sports, compared with adolescents in the other two groups (Table 1).

Factors associated with Acne-Specific Quality of Life Severity Index

In the multinomial regression analysis where the Acne-QoL Severity Index was used as the outcome variable, and the 'None' group (indicating NoAcne-HighAQoL) served as the reference category, we observed clear patterns related to health behaviours and social support (Figure 2).

Risk factors associated with Acne-LowAQoL included less participation in sporting activities (aOR 0.30, 95% CI 0.12–0.77), social media addiction (aOR 3.78, 95% CI 1.60–8.96), and spending over 4 h on screen for recreational purposes daily (aOR 3.04, 95% CI 1.28–7.18). In contrast, when examining protective factors, adolescents with Acne-HighAQoL showed significantly higher levels of social support (aOR 1.95, 95% CI 1.07–3.54).

Acne-Specific Quality of Life Severity Index and mental health

In the analysis of mental health aspects, including self-esteem, resilience and psychological distress, clear differences

Table 1 Descriptive statistics, stratified by the Acne-QoL Severity Index

	Acne-QoL Severity Index strata				P-values
	Population N= 335	No acne	Mild-to-moderate acne		
		High AQoL N= 244 ^a	High AQoL N= 65	Low AQoL N= 26	
Sociodemographic characteristics					
Sex (n=335)					0.6
Female	186 (56)	133 (55)	36 (55)	17 (65)	
Male	149 (44)	111 (45)	29 (45)	9 (35)	
Mean age (at submission) (n=335), years (SD)	16.0 (1.8)	16.1 (1.9)	15.4 (1.6)	15.6 (1.4)	0.03
Financial situation (n=327)					
Good	272 (83)	195 (83)	57 (88)	20 (77)	0.7
Average-to-poor	44 (13)	33 (14)	6 (9.2)	5 (19)	
No answer	11 (3.4)	8 (3.5)	2 (3.1)	1 (3.8)	
Mother's education (n=327)					
Primary (compulsory schooling)	9 (2.8)	4 (1.7)	4 (6.2)	1 (4.0)	0.2
Secondary (apprenticeship and high school)	73 (23)	49 (21)	17 (26)	7 (28)	
Tertiary (university)	242 (75)	181 (77)	44 (68)	17 (68)	
Physical health					
Body mass index (BMI) (n=328)	20.0 (2.77)	20.0 (2.74)	19.6 (2.68)	20.5 (3.38)	0.2
90th percentile of the BMI	37 (11)	30 (12)	5 (7.7)	2 (7.7)	0.6
Chronic condition (n=335)	98 (29)	74 (30)	16 (25)	8 (31)	0.7
Mental health (n=335)					
Social support score, mean (SD)	5.6 (1.21)	5.7 (1.2)	5.51 (1.16)	5.44 (1.44)	0.15
Low social support	97 (29)	64 (26) ^b	24 (37)	9 (35) ^b	0.2
Self-esteem score, mean (SD)	32 (6)	32 (6) ^b	31 (6)	27 (7) ^c	0.001
Low self-esteem	61 (18)	38 (16)	12 (18)	11 (42) ^b	0.007
Psychosocial wellbeing, mean (SD)	69 (17)	70 (16)	70 (16)	57 (18)	< 0.001
Poor psychosocial wellbeing	126 (38)	73 (30)	20 (31)	19 (73)	< 0.001
Resilience score, mean (SD)	3.2 (1.30)	3.38 (1.32)	3.12 (1.22)	2.60 (1.28) ^c	0.004
Low resilience score	197 (59)	131 (54)	44 (68)	22 (85) ^c	0.003
Health behaviours (n=332)					
Recreational screen time (h per day), mean (SD)	3.58 (2.01)	3.4 (1.8)	3.59 (1.9)	4.67 (2.8)	0.13
Recreational screen time over 4 h per day	129 (39)	90 (37)	23 (36)	16 (62)	0.046
Addiction to social media	90 (27)	61 (25) ^b	15 (23)	14 (54)	0.005
Sporting activity (n=277)	207 (75)	161 (78)	35 (71)	11 (52)	0.032

Data are presented as *n* (%) unless otherwise stated. Acne-QoL, Acne-Specific Quality of Life. ^aStudent's *t*-test or Wilcoxon, when appropriate. ^b*P*-value < 0.05; ^c*P*-value < 0.01.

were observed across the groups (Table 2). After adjusting for sociodemographic and health variables, Acne-LowAQoL was significantly associated with reduced self-esteem (aOR 4.74, 95% CI 1.75–16.58), diminished resilience (aOR 7.79, 95% CI 3.05–24.02) and increased psychological distress (aOR 10.8, 95% CI 3.74–39.66). These effects were stronger compared with those associated with the Acne-HighAQoL group, where only resilience showed significance.

Discussion

One in three adolescents in a population-based sample in Geneva, Switzerland, reported having moderate to mild acne, and approximately 1 in 13 reported experiencing a low QoL owing to acne. Factors associated with having both acne and a low Acne-QoL were low participation in sports, low social support, high screen time and social media addiction. Moreover, a low Acne-QoL was significantly associated with diminished self-esteem, reduced resilience and increased psychological distress.

The prevalence estimates of acne in the literature are scarce, mostly owing to the lack of a consistent definition across studies.¹ Recent work indicated that 75–90% of adolescents experience acne,^{6,36} with roughly 60% having

a mild form of the condition.³⁷ These estimates exceed our own findings, which indicated a prevalence of approximately 27% for mild-to-moderate acne. This difference is likely explained by the challenge of accurately estimating acne across definitions, countries, ethnicities, populations and study designs.³⁸

An increasing body of research underscores the importance of considering the health-related QoL among children and adolescents when evaluating dermatological conditions in clinical practice and research.^{39,40} This study, along with existing literature, corroborates the association between a low Acne-QoL and diminished general health-related QoL, in addition to poorer mental health outcomes.³⁶ Using the standardized Acne-QoL scale in this study, results showed that 7% of adolescents reported experiencing low Acne-QoL, thus enduring the emotional and psychological effects of acne on daily life and a decline in their general QoL. Similar magnitudes of low Acne-QoL were identified in the literature, although these were measured using a different tool, the Cardiff Acne Disability Index.⁵

Adolescents with acne and low Acne-QoL were found to have more frequent use of social media and prolonged screen time. Over the past decade, the surge in social media and internet use, further intensified by the unprecedented impact of the COVID-19 pandemic,⁴¹ has led to a profound

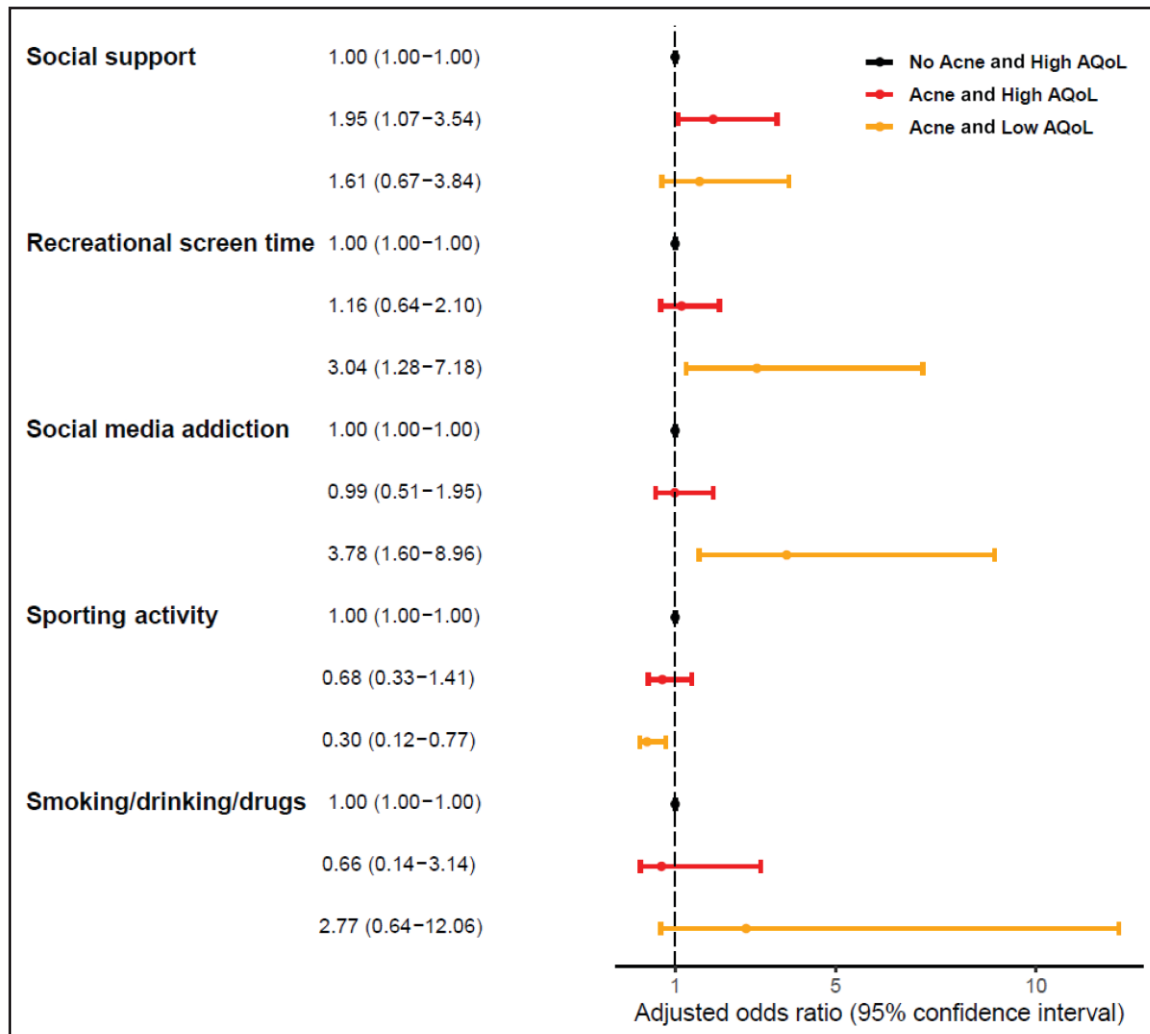


Figure 2 Risk and protective factors associated with the Acne-QoL Severity Index. Multinomial regression models were used to identify protective and risk factors for the Acne-QoL Severity Index independently, adjusting for sex, age, financial situation and parental education. The reference level corresponds to adolescents without acne and high Acne-QoL. All covariates in the model are binary variables.

transformation in the behaviours of the younger generation. This shift is characterized by an exponential increase in screen use, heightened exposure to violent online content, misinformation, cyberbullying and risky behaviours.⁴² A recent study explained how social media worsens the psychological impact of skin conditions by encouraging users to compare their appearance with others, leading to stigmatization and body dissatisfaction.⁴³

Our findings revealed that prolonged screen time and engaging less in sporting activities can lead to lower Acne-QoL. Not only does increased screen time often reflect extensive social media use, but it also correlates with heightened sedentary behaviours and poorer sleep quality.⁴⁴ The positive impact of physical activity on mental health and QoL in adolescents has already been widely recognized.⁴⁵ However, it remains important to highlight that the association between Acne-QoL and sporting activity could be bidirectional.³⁸ Adolescents with acne may isolate themselves and participate less in sports owing to embarrassment. Conversely, avoiding sports and social activities could worsen the negative impact of acne, as sports can serve as a coping mechanism.

In line with the current literature, adolescents who perceive support from their family and friends tend to endure less emotional and social burden caused by their acne, thereby enhancing their overall self-esteem and QoL. Protective factors, including social support, are crucial in mitigating feelings of shame, guilt and social isolation often associated with skin diseases. Social support plays a pivotal role in how adolescents navigate the psychosocial changes associated with their bodies, especially concerning their facial appearance and acne. These factors also facilitate consultations and requests for treatment.⁴⁶

Adolescents with acne presented poorer mental health outcomes, including lower levels of self-esteem, resilience and higher psychological distress. These effects were part pronounced among those who also reported poor Acne-QoL. This suggests that an individual's personal experience of acne, rather than just the physical presence of the condition, plays a pivotal role in influencing mental health outcomes. These findings are consistent with those from a recent meta-analysis.²¹ Acne contributes to appearance-related dissatisfaction, lower self-esteem, lower self-confidence, increased internalizing problems (anxiety and

Table 2 Association of the Acne-QoL Severity Index and three mental health outcomes

	Mental health outcomes		
	Low self-esteem aOR (95% CI)	Low resilience aOR (95% CI)	Poor psychosocial wellbeing aOR (95% CI)
Age	1.32 (1.06–1.67) ^a	1.17 (1.00–1.38)	1.32 (1.11–1.58) ^b
Sex			
Female	Ref	Ref	Ref
Male	0.41 (0.21–0.79) ^b	0.49 (0.30–0.78) ^b	0.32 (0.19–0.53) ^b
Financial situation			
Good	Ref	Ref	Ref
Average-to-poor	1.50 (0.62–3.39)	1.08 (0.53–2.23)	1.53 (0.73–3.19) ^a
No answer	Not defined	Not defined	Not defined
Mother's education level			
Tertiary	Ref	Ref	Ref
Secondary	1.71 (0.84–3.40)	1.05 (0.59–1.88)	1.17 (0.64–2.14)
Primary	0.49 (0.02–3.52)	1.10 (0.25–5.75)	0.71 (0.13–3.25)
Overweight			
No	Ref	Ref	Ref
Yes	0.89 (0.27–2.61)	0.67 (0.28–1.54)	0.93 (0.28–2.58)
Chronic condition			
No	Ref	Ref	Ref
Yes	1.78 (0.94–3.35)	1.54 (0.92–2.61)	1.07 (0.62–1.83)
Acne Severity/Acne-QoL Index ^c			
None	Ref	Ref	Ref
Acne-HighAQoL	1.61 (0.72–3.46)	2.17 (1.19–4.08) ^a	1.16 (0.61–2.16)
Acne-LowAQoL	4.64 (1.78–12.04) ^b	6.33 (2.07–27.5) ^b	10.84 (3.73–40.44) ^b

Acne-QoL, Acne-Specific Quality of Life; aOR, adjusted odds ratio; CI, confidence interval. ^a $P < 0.05$. ^b $P < 0.001$. ^cAdjusted for age, sex, financial situation, maternal education, overweight status and chronic conditions.

depression) and psychological distress. In contrast, resilience refers to the capacity to adapt to challenging circumstances while preserving psychological wellbeing, and it is deeply connected with individual, familial and societal factors. Interestingly, research indicates that adolescents with acne tend to exhibit lower levels of resilience compared with their counterparts who do not have acne, with the effect being more pronounced in those with low Acne-QoL. This suggests that resilience plays a crucial role in managing the psychological aspects of acne.⁴⁷

One of the principal strengths of our study is its population-based design, which leverages validated psychometric scales to comprehensively examine various life dimensions among adolescents. Additionally, this is one of the few recent studies to explore various dimensions of acne and its consequences in a population-based adolescent cohort.

The study also has some limitations. Firstly, the sample size is relatively small, which restricts statistical power. The study used population-based data derived from the canton of Geneva, thereby limiting the results to a specific cultural and geographical context.⁴⁸ Secondly, it is important to note that the measure of acne was subjective, relying on individuals' self-reported experiences with acne. This method may introduce bias, commonly seen with self-reported skin diseases, potentially underestimating the effects; additionally, adolescents with severe acne might have been less inclined to participate because of stigmatization.^{49,50} Adolescents who reported no acne or minimal acne were not surveyed about their acne-related QoL and were therefore assumed to have a high Acne-QoL. Moreover, we did not collect any data on acne treatment that may have been a covariant participating in psychosocial and/or economical support. Moreover, as commonly observed in cohort studies, adolescents from

households with unfavourable socioeconomic conditions were under-represented in this study compared with the general population. This limitation may impact the generalizability of our results. Furthermore, owing to the cross-sectional design of the study, causality was not studied, and the interpretation of the results might be subject to reverse causality. Finally, it is important to acknowledge that this study was designed to provide population-based estimates regarding acne prevalence and its impact on QoL, rather than to perform a clinical evaluation of acne, which would have necessitated a different design.

In conclusion, this paper allows for the identification of two groups affected by acne along with related associated factors: adolescents with acne who report a low Acne-QoL, and those with a high Acne-QoL despite their condition. Physical activity and social support positively contribute to the QoL of adolescents with acne, which translates to better mental health. In contrast, screen time and social media use notably reduce mental health. These results are crucial for providing targeted guidance to dermatologists. It also underscores the necessity of assessing both psychological and physical symptoms during dermatological consultations. Such initiatives could substantially reduce the burden of acne-related issues for affected adolescents, fostering an overall improved QoL among adolescents. As such, it is imperative for dermatologists to systematically integrate these insights into their clinical practice, thereby helping adolescents to manage their acne with more support and enhance their overall wellbeing.

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Conflicts of interest

The authors declare they have no conflicts of interest.

Data availability

Participants' informed consent did not authorize data to be made immediately publicly available. However, it does allow for the data to be made available to the scientific community upon submission of a data request application to the investigators board via the corresponding author. All requests for data will be responded to within 3 months from submission.

Ethics statement

The Geneva Cantonal Commission for Research Ethics approved the study (Project ID No. 2021-01973).

Patient consent

Informed written or electronic consent was obtained from the parent (or another legal guardian), and from the adolescents themselves.

Supporting Information

Additional [Supporting Information](#) may be found in the online version of this article at the publisher's website.

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