ORIGINAL REPORT

Truncal Acne Is Independently Associated with Stigmatization, Poorer Treatment Adherence and Greater Healthcare Utilization: A 20-country Survey

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Truncal acne (TA) affects 40–50% of adults with acne vulgaris and remains understudied despite its psychosocial impact. We aimed to evaluate the association of TA with stigmatization, psychosocial burden, healthcare utilization and treatment adherence, compared with exclusively facial acne (FA). We hypothesized that TA would be independently associated with greater psychosocial burden and healthcare utilization than FA alone. In this cross-sectional international online survey of 1,879 adults with physician-diagnosed acne (FA *n*=1,075; TA *n*=804) across 20 countries, multivariable logistic regression adjusted for age, sex and country showed that TA was independently associated with stigmatization (aOR 1.41 [95%CI 1.16–1.71]), hospitalization (aOR 1.73 [1.25–2.38]) and poor treatment adherence (aOR 1.26 [1.03–1.53]). Stigmatization was equally prevalent in truncal-only (49.2%) and combined facial-and-truncal (50.5%) patients (aOR 1.00), indicating that it is intrinsic to truncal involvement rather than a consequence of facial disease. Truncal-only patients had lower dermatologist access (63.8% vs 78.9%) yet markedly higher hospitalization and surgical consultation rates. TA is independently associated with psychosocial burden and higher healthcare resource utilization; systematic trunk examination during acne consultations is warranted.

Key words: acne; Truncal acne; stigma.

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SIGNIFICANCE

Truncal acne is an independent predictor of stigmatization, poorer treatment adherence and greater healthcare utilization, irrespective of age, sex and country of residence. Stigmatization is intrinsic to truncal involvement rather than driven by concurrent facial disease, supporting systematic examination of the trunk during acne assessment.

Acne vulgaris is a common disorder of the pilosebaceous unit with high prevalence worldwide. Facial and truncal acne are pathophysiologically and clinically similar, presenting comparable lesion types. However, epidemiological studies indicate that a substantial proportion of patients have extra-facial involvement, particularly affecting the back, chest and shoulders. Truncal acne (TA), reported in approximately 40–50% of adults with acne, is increasingly recognized as a clinically important but frequently neglected manifestation of acne vulgaris: patients often fail to mention truncal lesions during consultations despite their significant impact on quality of life (1–4). Most studies investigating the psychosocial burden of acne have focused primarily on facial involvement.

The objective of this study was to assess the prevalence of TA and evaluate its association with stigmatization, psychosocial impact on daily, social, professional and family life, healthcare utilization and treatment adherence. We hypothesized that TA would be independently associated with greater psychosocial burden and healthcare utilization than FA alone, and that this association would persist after adjustment for demographic confounders.

MATERIALS AND METHODS

Adults (>18 years) with physician-diagnosed acne were recruited through an international online survey conducted in 20 countries. As the study relied on anonymized self-reported data without clinical examination, institutional review board approval was not required.

The questionnaire collected data on lesion location and sociodemographic characteristics. Stigmatization was defined as self-reported experiences of rejection, disgust, avoidance of physical contact or social avoidance attributed to acne. Patients with TA were compared with those with exclusively FA regarding

socio-demographic factors, clinical characteristics and psychological impact on self-perception, relationships, daily functioning and professional life.

Treatment adherence was evaluated using the question: "Did you get tired of taking a treatment every day?"

Descriptive statistics were calculated using frequencies, means and standard deviations. Group comparisons were performed using Z-tests for proportions and Pearson χ^2 tests for categorical variables. Statistical significance was set at $p<0.05$. To assess independent associations, multivariable logistic regression was performed, adjusting for age (continuous, standardized), sex and country of residence (20-level dummy variable).

RESULTS

Study population

A total of 1,879 respondents with acne were included, comprising 805 males (42.8%) and 1,074 females (57.2%), with a mean age of 33.34±13.05 years. Of these, 1,075 (57.2%) reported exclusively facial acne and 804 (42.8%) had truncal involvement, comprising 374 (19.9% of the total cohort) with isolated truncal acne and 430 (22.9%) with combined facial and truncal acne.

Stigmatization

Respondents with TA reported stigmatization more frequently than those with exclusively FA (49.9% vs 41.5%, $p<0.001$). They more frequently reported feeling ostracized or rejected (35.6% vs 27.9%, $p<0.001$), feeling looked at with disgust (30.0% vs 25.1%, $p=0.022$), that people avoided touching them (28.6% vs 23.8%, $p=0.022$), and that people avoided approaching them (28.4% vs 22.6%, $p=0.005$) (**Table I**). Within the TA group, patients reporting stigmatization were significantly younger than those without (mean age 32.5±13.39 vs 34.99±13.65 years; $p=0.006$); gender (50.9% vs 48.6% men, $p=0.57$) and BMI (24.55±5.98 vs 24.87±6.16, $p=0.58$) were not predictive. Among patients with truncal acne, all assessed physical symptoms were significantly more frequent in those reporting stigmatization, most markedly skin pain (OR 2.16 [95%CI 1.42–3.31], $p<0.001$) and burning sensations (OR 2.03 [95%CI 1.39–2.97], $p<0.001$), followed by tingling, prickling and itching (**Fig. 1**).

Healthcare utilization and treatment adherence

Significant negative consequences on self-perception, interpersonal relationships, daily life, sleep and social and professional life were more frequent among TA patients (Table I). Poor treatment adherence was significantly associated with stigmatization (58.9% vs 53.4%, $p=0.022$).

Table I. Care pathway, stigmatization and quality-of-life outcomes: facial acne (FA) vs truncal acne (TA) – *N*=1,879

Outcome	FA (*n*=1,075)	TA (*n*=804)	*p*-value
Care pathway			
Dermatologist consultation	835 (77.7%)	576 (71.7%)	0.011
General practitioner	233 (21.7%)	223 (27.7%)	0.011
Pharmacist (no prior consult)	48 (4.5%)	71 (8.8%)	
Surgical consultation	20 (1.9%)	43 (5.3%)	
Hospitalization	83 (7.7%)	102 (12.7%)	
Stigmatization			
Stigmatization (any)	446 (41.5%)	401 (49.9%)	
Social avoidance by others	243 (22.6%)	228 (28.4%)	0.005
Ostracism / rejection	300 (27.9%)	286 (35.6%)	
Disgust reactions	270 (25.1%)	241 (30.0%)	0.022
Avoidance of physical contact	256 (23.8%)	230 (28.6%)	0.022
Treatment, work and quality of life			
Poor treatment adherence	574 (53.4%)	474 (58.9%)	0.022
Sexual life impacted	260 (26.3%)	263 (35.2%)	
Clothing modification	326 (30.3%)	342 (42.5%)	
Sleep disturbances	395 (36.7%)	353 (43.9%)	0.002
Reduced work productivity	338 (32.7%)	310 (40.1%)	0.001
Time off work/school	227 (22.0%)	209 (27.6%)	0.008
Relationship difficulties	310 (30.7%)	295 (38.9%)	
Fatigue	504 (46.9%)	425 (52.9%)	0.012

Bold figures in the source data indicate $p<0.05$; all *p*-values shown are significant at the threshold reported.
FA:Facial Acne; TA:Truncal Acne.

Multivariable analysis

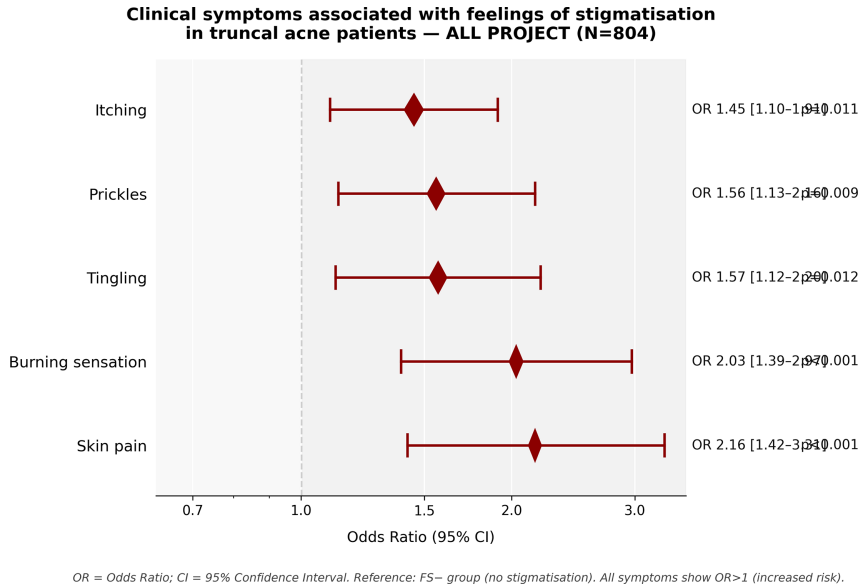
After adjustment for age, sex and country, TA remained independently associated with stigmatization (aOR 1.41 [95%CI 1.16–1.71], $p=0.0005$), hospitalization (aOR 1.73 [95%CI 1.25–2.38], $p=0.0009$), pharmacist consultation without prior medical contact (aOR 1.99 [95%CI 1.34–2.95], $p=0.0006$) and poor treatment adherence (aOR 1.26 [95%CI 1.03–1.53], $p=0.022$).

Stratified analysis: truncal-only vs combined involvement

Stigmatization was equally prevalent in truncal-only (49.2%) and combined (50.5%) patients (aOR 1.00 [95%CI 0.74–1.36], $p=0.98$), indicating that it is intrinsic to truncal involvement rather than driven by concurrent facial disease. Truncal-only patients had lower dermatologist access (63.8% vs 78.9%, $p<0.001$) but markedly higher hospitalization (20.3% vs 6.0%, OR 3.96 [2.48–6.34], $p<0.001$) and surgical consultation rates (9.0% vs 1.9%, OR 5.10 [2.07–12.59], $p<0.001$) (**Table II**).

DISCUSSION

This large international survey demonstrates that TA is independently associated with stigmatization, affecting nearly half of patients and occurring significantly more often than in exclusively facial acne. This finding is, at first sight, counter-intuitive: the trunk is typically covered by clothing, yet TA generates



OR = Odds Ratio; CI = 95% Confidence Interval. Reference: FS− group (no stigmatisation). All symptoms show OR>1 (increased risk).

Fig. 1. Clinical symptoms associated with stigmatization in truncal acne patients – *N*=804.

psychosocial distress comparable to, and in several domains exceeding, that of facial involvement. One explanation is that concealment does not remove the burden of disease but displaces it – anticipatory anxiety around situations of body exposure (the beach, the gym, intimacy) may sustain stigmatization independently of everyday visibility. This is consistent with previous international studies reporting a marked impact of TA on quality of life (4).

Younger age, but not gender or BMI, predicted stigmatization, suggesting that the psychosocial burden of TA reflects dermatology-specific factors – possibly the disruption of body image during a developmental period when peer perception and intimacy are particularly salient – rather than generic body image concerns. Physical symptoms were strongly and consistently associated with stigmatization, with skin pain and burning sensations showing the largest effect sizes (Fig. 1). This gradient suggests that the burden of truncal acne is not driven solely by lesion visibility but also by symptom intensity and perceived disease severity, which may sustain stigmatization even when lesions themselves are concealed by clothing.

The stratified analysis provides additional insight into these associations. Truncal-only patients combined the lowest dermatologist access with the highest hospitalization and surgical consultation rates – a pattern that appears paradoxical but is plausibly explained by referral pathways: visible facial lesions likely prompt earlier and more direct specialist referral, whereas isolated truncal lesions, hidden beneath clothing, may go unmentioned in consultations until complications (abscesses, nodulocystic flares) force urgent or surgical care. The elevated recourse to pharmacist consultation without prior medical contact reinforces this picture of a population self-managing

Table II. Stratified analysis: truncal-only vs combined (facial+truncal) acne – *N*=804

Outcome	Truncal-only (n=374)	Combined (n=430)	Or (95% CI)	P	aOR (95% CI)*	P
Stigmatization						
Stigmatization (any)	184 (49.2%)	217 (50.5%)	0.95 [0.72–1.25]	0.774	1.00 [0.74–1.36]	0.978
Care pathway						
Dermatologist consultation	239 (63.8%)	339 (78.9%)	0.47 [0.33–0.68]		2.33 [1.55–3.50]†	
General practitioner	119 (31.7%)	103 (24.0%)	1.47 [1.03–2.11]	0.041	0.73 [0.49–1.10]	0.132
Hospitalization	76 (20.3%)	26 (6.0%)	3.96 [2.48–6.34]		—‡	—
Surgical consultation	34 (9.0%)	8 (1.9%)	5.10 [2.07–12.59]		0.19 [0.07–0.49]†	0.001
Treatment						
Poor treatment adherence	195 (52.0%)	279 (64.9%)	0.59 [0.44–0.78]		—‡	—
Demographics						
Age, mean±SD (years)	37.2±14.3	30.8±12.2	—		—	—
BMI, mean±SD (kg/m²)	25.6±6.5	23.9±5.6	—		—	—

* Multivariable logistic regression adjusted for age (continuous, standardized), sex and country of residence (20-level dummy variable). Reference: truncal-only group.
† aOR direction inverted relative to the unadjusted OR: the combined group shows higher dermatologist consultation and lower surgical consultation rates after accounting for age and country differences between subgroups.
‡ Model did not converge (near-complete separation due to very low event rates in 1 subgroup); unadjusted OR reported only.
aOR:adjusted Odds Ratio; CI:95% Confidence Interval; OR:Odds Ratio; SD:Standard Deviation.

disease outside specialist pathways, plausibly delaying diagnosis and adequate treatment. Together, these findings depict a coherent care-avoidance pattern, in which concealment of the trunk delays specialist engagement while increasing both psychosocial burden and downstream healthcare costs.

TA was also associated with broader consequences across professional, relational and intimate domains, including impaired work productivity, relationship difficulties, sexual life impact, and sleep disturbances. Stigmatization was independently associated with poorer treatment adherence, which may in turn affect long-term outcomes (5); this association, if confirmed prospectively, would suggest a self-reinforcing cycle in which untreated disease sustains stigma and stigma undermines treatment engagement.

Taken together, these findings indicate that TA represents a distinct clinical and psychosocial entity rather than a simple extension of facial acne and that isolated truncal involvement – precisely because it escapes routine examination – may carry the greatest unmet need. These results support current expert recommendations advocating systematic assessment of truncal involvement during acne consultations (6).

Conclusion

TA is independently associated with stigmatization, poorer treatment adherence and greater healthcare resource utilization than FA, irrespective of age, sex and country. Stigmatization appears intrinsic to truncal involvement rather than a consequence of concurrent facial disease. These findings support systematic clinical assessment of truncal involvement, symptom burden and stigmatization to improve comprehensive acne management and optimize treatment engagement.

Limitations include the cross-sectional design, which precludes causal inference; the absence of physician-assessed severity scores or lesion counts, meaning that healthcare utilization measures should be interpreted as proxies for disease burden rather than validated severity indicators; and the self-reported nature of all clinical and healthcare utilization data. All reported associations are descriptive and hypothesis-generating and should be confirmed in prospective studies.

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Data Availability: The data that support the findings of this study are available from the corresponding author upon reasonable request.

Ethics committee: Patient consent: All individuals gave their consent with the understanding that their information may be publicly available. IRB approval status: ID RCB: 2022-A01859-34

Conflict of interest: MV and RV are employees of Pierre Fabre. The other authors declare no conflicts of interest. Laboratory staff were involved in the project design but did not participate in data collection, analysis or manuscript writing.

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