



## EVALUATING THE IMPACT OF ISOTRETINOIN ON QUALITY OF LIFE IN ACNE PATIENTS USING SKINDEX MINI: A LONGITUDINAL ANALYSIS

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**ABSTRACT** **Background:** Acne vulgaris significantly impairs psychosocial well-being. Traditional clinical assessments may fail to capture this burden. The Skindex Mini, a validated and concise quality-of-life (QoL) instrument, assesses emotional, symptomatic, and functional dimensions in dermatological conditions. **Objective:** To evaluate changes in Skindex Mini scores among patients with moderate to severe acne undergoing isotretinoin therapy over a 12-month period. **Methods:** A longitudinal observational study was conducted with 220 acne patients prescribed oral isotretinoin. Skindex Mini scores were recorded at baseline and periodically over 12 months to assess domain-specific and overall QoL improvements. **Results:** Of the 220 enrolled participants, 206 completed the 12-month follow-up. The mean baseline Skindex Mini score was  $13.4 \pm 2.1$ . By the second month, there was a notable drop in emotional domain scores with an average improvement of 4.5 points ( $p < 0.001$ ). The lowest overall scores (nadir) occurred between months 3–5, correlating with peak clinical improvement. By 12 months, 86% of participants demonstrated at least 50% reduction in total Skindex Mini scores, with a post-treatment mean of  $6.1 \pm 1.9$ . **Conclusion:** Isotretinoin offers substantial quality-of-life benefits for acne patients, particularly in emotional well-being. Incorporating patient-reported outcome tools such as Skindex Mini enhances holistic acne care and helps track progress beyond clinical resolution.

**KEYWORDS :** Isotretinoin, Acne Vulgaris, Quality of Life, Skindex Mini, Emotional Domain, Patient-Centered Outcomes

### INTRODUCTION

Acne vulgaris is a multifactorial inflammatory skin condition primarily affecting adolescents and young adults. It is associated with significant physical, emotional, and psychological burden. Beyond its visible manifestations, acne may severely impact an individual's self-esteem, social interactions, and mental health. While traditional acne management focuses on lesion counts and severity grading, these parameters often fail to reflect the subjective suffering of patients. There is a growing recognition of the importance of evaluating the quality of life (QoL) in dermatological conditions [1].

In this context, the Skindex instruments have emerged as reliable tools to measure the health-related QoL in skin disease. The Skindex Mini is a validated, abbreviated form of the Skindex-16, containing three key questions that cover emotional, symptomatic, and functional impacts of skin disease [2]. Each item is scored on a 7-point scale from 0 (never bothered) to 6 (always bothered), yielding a total maximum score of 18.

The brevity and clinical relevance of the Skindex Mini make it ideal for routine use in outpatient dermatology settings.

### MATERIALS AND METHODS

This was a prospective, longitudinal study conducted over a period of 12 months. The study population included 220 patients diagnosed with moderate to severe acne vulgaris, defined using the Global Acne Grading System (GAGS). Patients aged 16 to 35 years were recruited from dermatology outpatient services and were initiated on oral isotretinoin at doses ranging from 0.2 to 0.5mg/kg/day. The duration of therapy was tailored based on clinical response and tolerability, usually between 4 to 6 months.

#### Inclusion Criteria:

1. Age 16–35 years
2. Diagnosis of moderate to severe acne vulgaris
3. No systemic retinoid therapy in the preceding 6 months
4. Willingness to participate in follow-up visits and assessments

#### Exclusion Criteria:

1. History of psychiatric illness or current psychotropic medication use
2. Other significant dermatological or systemic illnesses
3. Pregnancy or lactation

The Skindex Mini questionnaire was administered at baseline (prior to initiating isotretinoin), and subsequently at monthly intervals for the first 6 months, and then at the 12-month mark. (Figure 1) Participants were encouraged to complete the forms independently, with assistance offered only when necessary.

All necessary permissions were obtained from Mapi Research trust for using the Skindex mini-Questionnaire.

### Skindex-Mini

During the past week, how often have you been:

	Never Bothered ↓	.	Always Bothered ↓
1. Bothered by symptoms of your skin problem -- (eg. itching, stinging, burning, hurting or skin irritation).	□	□	□
2. Emotionally bothered by your skin problem (eg. worry, embarrassment, frustration).	□	□	□
3. Bothered by effects of your skin problem on your ACTIVITIES (eg. going out, accomplishing what you want, work activities, or your relationships with others).	□	□	□

(Figure 1)- Skindex- Mini

#### Statistical Analysis:

Data were analyzed using SPSS Trial version. Paired t-tests and repeated measures ANOVA were applied to assess statistically significant changes in Skindex Mini scores across time points. A  $p$ -value  $< 0.05$  was considered statistically significant.

#### Results

Among the 220 enrolled participants, 206 completed the 12-month follow-up. The study cohort comprised 132 females and 74 males, with a mean age of  $22.6 \pm 4.2$  years. The baseline Skindex Mini score averaged  $13.4 \pm 2.1$ , indicating moderate impairment in quality of life. The emotional domain had the highest initial burden, followed by functional and symptomatic domains.

A significant reduction in Skindex Mini scores was noted by the second month of isotretinoin therapy, particularly in the emotional domain. Patients reported marked improvement in self-image, reduced embarrassment, and enhanced confidence in social settings. The nadir of Skindex scores was observed between months 3 to 5, corresponding with the most visible clinical improvement.

By the end of the study period, 86% of patients had achieved at least a 50% reduction in their total Skindex Mini scores. The mean post-treatment score was  $6.1 \pm 1.9$ . Emotional recovery preceded physical resolution in many cases, highlighting the psychosocial impact of even early clinical changes.

**Table 1- Changes In Skindex Mini Scores Over 12 Months Of Isotretinoin Therapy**

Time Point	Emotional Domain (Mean $\pm$ SD)	Symptomatic Domain (Mean $\pm$ SD)	Functional Domain (Mean $\pm$ SD)	Total Score (Mean $\pm$ SD)
Baseline	$5.2 \pm 0.8$	$4.1 \pm 1.1$	$4.1 \pm 0.9$	$13.4 \pm 2.1$

Month 2	3.0 ± 0.7	2.8 ± 1.0	2.7 ± 1.2	8.5 ± 2.0
Month 3	2.5 ± 0.6	2.2 ± 0.8	2.1 ± 1.0	6.8 ± 1.7
Month 6	2.0 ± 0.5	1.8 ± 0.6	1.9 ± 0.7	5.7 ± 1.4
Month 12	2.1 ± 0.6	2.0 ± 0.7	2.0 ± 0.8	6.1 ± 1.9

## DISCUSSION

This study underscores the profound improvement in quality of life experienced by patients with moderate to severe acne following isotretinoin therapy. While the physical efficacy of isotretinoin is well-documented in literature [3], its role in enhancing psychological well-being has not been equally emphasized. Our findings reinforce the need for dermatologists to look beyond the skin and evaluate broader patient-centric outcomes.

The rapid emotional response observed within the first two months suggests that patients derive significant psychosocial relief even before complete lesion clearance. This aligns with previous studies showing that perceived improvement often has a more substantial impact on self-esteem than objective clinical scores [4].

The use of the Skindex Mini allowed us to capture these early and evolving changes efficiently.

Furthermore, we observed that emotional distress levels dropped more steeply and earlier than symptomatic scores. This indicates that visible improvement and the belief in effective treatment may positively influence emotional well-being, irrespective of residual lesions. Functional improvements, including participation in social, academic, or occupational activities, followed a similar trajectory but tended to plateau after 6 months.

Importantly, incorporating QoL tools like the Skindex Mini into routine acne care provides a holistic view of treatment efficacy. It also facilitates better communication between physician and patient, helping clinicians tailor therapies to individual needs and expectations. Given the known psychiatric comorbidities associated with acne, such assessments can also help identify patients who may benefit from psychological support.

Limitations of our study include reliance on self-reported questionnaires and lack of a comparator group not receiving isotretinoin. Future studies could explore comparative QoL changes in patients receiving other systemic treatments like antibiotics or hormonal therapy. Additionally, long-term follow-up beyond 12 months would be valuable in assessing the durability of QoL improvements [5].

## CONCLUSION

Isotretinoin therapy in patients with moderate to severe acne results in significant improvement in quality of life, particularly in emotional well-being. These benefits are evident as early as two months into treatment and sustain throughout the course of therapy. The Skindex Mini is a simple yet robust tool that can be seamlessly integrated into clinical practice to monitor patient-reported outcomes.

This study advocates for routine quality-of-life assessment in acne management. By addressing both clinical and psychological dimensions of acne, dermatologists can offer more compassionate and comprehensive care.

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