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Score- Survey on Clindamycin and Benzoyl Peroxide Outcome in Reducing Acne by Experts

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ABSTRACT

Background: Topical combination therapies are the cornerstone of acne vulgaris treatment, with clindamycin-benzoyl peroxide combinations widely prescribed for synergistic antimicrobial effects. Limited data exists on dermatology practitioners' real-world experiences and prescribing patterns with these formulations across diverse Indian populations.

Objective: To evaluate dermatology practitioners' perspectives on clindamycin-benzoyl peroxide (Clin-B) combination therapy effectiveness, safety satisfaction, prescribing patterns across acne severity levels, and antibiotic stewardship implementation.

Methods: A cross-sectional survey using the SCORE (Survey on Clinred-B's Outcome in Reducing Acne by Experts) questionnaire was conducted among dermatology practitioners across six Indian states (Maharashtra, Rajasthan, Uttar Pradesh, Gujarat, Madhya Pradesh, and Telangana). The 20-question survey assessed treatment utilization, safety satisfaction, comparative effectiveness, clinical decision-making factors, and stewardship awareness. Data were analyzed using descriptive statistics.

Results: Thirty dermatology practitioners participated, with the largest representation from Maharashtra (46.7%). High combination therapy adoption was observed (66.7% using in >50% of patients). Safety satisfaction was universal (100% satisfied; 80% very satisfied). Treatment preferences demonstrated clear severity stratification: mild acne 40%, moderate 50%, moderately severe 56.7%, and severe acne 70% preferred Clin-B. Perfect antibiotic stewardship awareness was evident (100% agreement on avoiding monotherapy). Practitioners

preferred once-daily night-time dosing (66.7%) and rated Clin-B favorably in comparative effectiveness assessments (73.3% versus clindamycin-adapalene; 66.7% versus adapalene-benzoyl peroxide).
Conclusion: Dermatology practitioners demonstrate strong confidence in Clin-B therapy with evidence-based, severity-stratified prescribing (40-70% preference increase). Universal safety satisfaction and perfect stewardship compliance indicate successful resistance prevention implementation. Results provide real-world validation supporting current guidelines recommending combination therapy as first-line acne treatment.

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INTRODUCTION

Acne vulgaris represents one of the most prevalent dermatological conditions globally, affecting approximately 85% of individuals between ages 12 and 24 years, with significant impact extending into adulthood (1). In India, acne prevalence demonstrates considerable variation across different regions and demographic groups, with studies reporting rates ranging from 30% to 80% among adolescents and young adults (2,3). The burden of acne in Indian populations is compounded by unique environmental factors, dietary patterns, and genetic predispositions, with tropical climate conditions and high humidity contributing to increased sebaceous gland activity and bacterial proliferation (4).

Recent epidemiological studies from India indicate that acne affects approximately 50-60% of adolescents aged 16-18 years, with a notable trend toward persistence into adulthood, particularly among urban populations (5). The condition disproportionately impacts quality of life in Indian patients, with cultural emphasis on physical appearance leading to significant psychological distress and social stigmatization (6). Moreover, the high prevalence of post-inflammatory hyperpigmentation in Indian skin types necessitates early and effective intervention to prevent long-term cosmetic complications (7).

The pathophysiology of acne vulgaris involves four primary mechanisms: increased sebaceous gland activity under hormonal influence, abnormal follicular keratinization leading to comedone formation, colonization and proliferation of Cutibacterium acnes, and subsequent inflammatory cascade activation (8). This complex etiology necessitates therapeutic approaches that address multiple pathophysiological pathways simultaneously to achieve optimal clinical outcomes.

Topical combination therapies have emerged as the cornerstone of modern acne management, representing a paradigm shift from monotherapy approaches toward evidence-based, multimodal treatment strategies (9). Current international guidelines consistently recommend combination topical therapy as first-line treatment for most presentations of acne vulgaris (10). The combination of clindamycin phosphate and benzoyl peroxide represents a rational therapeutic approach that synergistically targets bacterial proliferation and inflammatory processes while providing complementary mechanisms of action.

The clinical rationale for combining these agents extends beyond additive efficacy. Benzoyl peroxide's unique mechanism of action through non-specific oxidation makes bacterial resistance development virtually impossible, addressing one of the most significant challenges in antimicrobial therapy (11). This property is particularly crucial given the increasing global concern about antibiotic resistance in dermatology, with documented

resistance rates to topical antibiotics ranging from 20% to over 60% in various geographic regions (12).

The antimicrobial resistance crisis in dermatology has prompted significant changes in prescribing recommendations, with current guidelines strongly discouraging topical antibiotic monotherapy for acne treatment (13). This evidence has led to regulatory recommendations in multiple countries, including updates to prescribing guidelines that specifically advocate for combination therapy approaches.

Despite the robust evidence base supporting clindamycin-benzoyl peroxide combinations and their widespread clinical adoption, limited data exists regarding healthcare practitioners' real-world experiences, prescribing patterns, and clinical perspectives on these formulations, particularly in the Indian healthcare context (14). Understanding practitioner viewpoints is essential for validating the translation of clinical trial evidence into routine practice and identifying potential barriers or facilitators to optimal prescribing patterns.

Therefore, the primary objective of this study was to comprehensively evaluate healthcare practitioners' perspectives on clindamycin-benzoyl peroxide combination therapy through a structured survey approach, specifically focusing on treatment effectiveness across different acne severity levels, satisfaction with safety profiles, prescribing patterns and decision-making factors, and awareness and implementation of antibiotic stewardship principles in acne management.

MATERIALS AND METHODS

Study Design and Setting

This cross-sectional survey study was conducted using a structured questionnaire approach to evaluate dermatology healthcare practitioners' perspectives on clindamycin-benzoyl peroxide combination therapy for acne vulgaris management (15). The study design followed established guidelines for survey research in healthcare settings as outlined by the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) statement (16,17). The cross-sectional design was selected to capture contemporary prescribing patterns and clinical perspectives at a specific time point, providing a snapshot of current clinical practice patterns (18).

The study was conducted across multiple healthcare settings in six Indian states between March and April 2025, encompassing diverse geographic regions to ensure broad representation of clinical practice patterns. The multi-state approach was designed to capture variation in prescribing behaviors across different healthcare environments, including urban tertiary care centers, suburban clinics, and community-based dermatology practices (19,20).

Ethical Considerations

The study protocol was designed in accordance with the Declaration of Helsinki principles for medical research involving human subjects (21). As the study involved dermatology healthcare practitioners providing professional opinions rather than patient data, and all responses were anonymized, formal ethical approval requirements were assessed according to local institutional guidelines (22). All participants provided informed consent prior to survey participation, and were assured of data confidentiality and anonymity in any subsequent publications (23).

Participants were informed that their involvement was voluntary and that they could withdraw from the study at any time without consequence. No financial incentives were provided for participation to avoid potential bias in responses (24,25). The survey data collection procedures followed international guidelines for healthcare survey research to ensure methodological rigor and participant protection (26).

Study Population And Sampling

Target Population

The target population comprised dermatology healthcare practitioners actively involved in acne vulgaris treatment, including consultant dermatologists, dermatology residents, and dermatology specialists with significant clinical experience in acne management (27,28). The focus on dermatology specialists was designed to capture expert perspectives from practitioners with specialized knowledge and extensive clinical experience in acne treatment protocols.

Sample Size Calculation

Sample size estimation was based on established methodologies for healthcare survey research (29,30). Using a confidence level of 95% and assuming a population proportion of 50% for key outcome measures (representing maximum variability), with a margin of error of ±15%, the minimum required sample size was calculated as 25 participants. To account for potential non-response and ensure adequate representation across geographic regions, a target sample size of 30 participants was established (31,32).

Sampling Strategy

A purposive sampling approach was employed to ensure representation across different practice settings and geographic locations within the six target states (33). Participants were recruited through professional dermatology networks, state dermatology associations, and continuing medical education events. This sampling strategy was selected to ensure inclusion of practitioners with relevant clinical experience while maintaining feasibility of data collection (34,35).

Inclusion Criteria

- Dermatology healthcare practitioners were eligible for inclusion if they met the following criteria:
- Active clinical practice in dermatology with regular acne vulgaris patient management
- Minimum of one year of clinical experience in dermatology practice
- Current prescribing authority for topical acne medications within their practice setting
- Willingness to provide informed consent for survey participation
- Practice location within one of the six target states (Madhya Pradesh, Uttar Pradesh, Gujarat, Rajasthan, or Telangana) (36,37)

Exclusion Criteria

Practitioners were excluded if they:

- Had less than one year of relevant dermatology clinical experience
- Were not currently involved in acne patient management
- Were unable to provide informed consent
- Had potential conflicts of interest that could bias responses (as assessed by self-report) (38,39)

Geographic Distribution

Maharashtra: Western India's largest state with extensive urban healthcare infrastructure and major metropolitan centers **Madhya Pradesh (M.P.):** Central India representation with mixed urban-rural healthcare settings **Uttar Pradesh (U.P.):** Northern India's largest state providing extensive population coverage **Gujarat (Guj.):** Western India representation with diverse healthcare infrastructure **Rajasthan (Raj.):** Northwestern India covering arid climate regions **Telangana:** Southern India representation with metropolitan healthcare centers.

This geographic distribution was designed to capture regional variations in prescribing patterns, patient demographics, and healthcare delivery models across different climatic and socioeconomic environments (40).

Survey Instrument Development

Questionnaire Design

The SCORE (Survey on Clindamycin-Benzoyl peroxide Outcome in Reducing Acne by Experts) questionnaire was developed using established principles of survey design for healthcare research (41,42). The questionnaire development process followed a systematic approach incorporating literature review, expert consultation, and pilot testing phases.

The survey instrument comprised 20 structured questions designed to assess multiple domains of clinical practice and practitioner perspectives (43). Question types included single-choice, multiple-choice, and ranking questions to capture different aspects of clinical decision-making and treatment preferences (44,45).

Content Domains

The questionnaire was designed to assess the following key domains:

Treatment Utilization Patterns: Assessment of combination therapy usage rates and preferred clinical scenarios.

Safety and Tolerability Assessment: Evaluation of practitioner satisfaction with safety profiles.

Comparative Effectiveness: Assessment of perceived effectiveness compared to other standard combination therapies.

Clinical Decision-Making Factors: Exploration of factors influencing prescription decisions and treatment duration considerations.

Severity-Specific Treatment Preferences: Assessment of treatment preferences across different acne severity level.

Dosinsg and Administration Preferences: Evaluation of preferred dosing frequencies and combination approaches.

Antibiotic Stewardship Perspectives: Assessment of awareness and implementation of resistance prevention strategies (46)

Questionnaire Validation

The questionnaire underwent content validation through expert review by three senior dermatologists with experience in acne treatment and clinical research (47,48). Face validity was assessed to ensure questions were clearly worded and clinically relevant. The validation process included assessment of content relevance to clinical practice, question clarity and comprehensibility, response option appropriateness, and overall survey length and completion time (49,50).

Data Collection Procedures

Data Collection Methods

Data collection was conducted through structured interviews using the standardized questionnaire format (51). This approach was selected to ensure high response rates and data quality while allowing for clarification of questions when necessary (52,53).

Data Collection Timeline

Data collection was conducted over a 6-week period from March to April 2025. This timeframe was selected to minimize temporal bias while ensuring adequate participant recruitment across diverse practice settings (54).

Data Collection Protocol

A standardized data collection protocol was developed to ensure consistency across all survey administrations (55,56). The protocol included standardized participant introduction and consent procedures, consistent question presentation format, predetermined clarification responses for common questions, and systematic recording of responses and completion times.

Statistical Analysis Plan

Data Management and Quality Assurance

Prior to analysis, data underwent systematic quality assurance procedures including range checks, logical consistency assessments, and missing data evaluation (57,58). Data cleaning procedures followed established protocols for survey research in healthcare settings (59).

Descriptive Analysis

The primary analytical approach involved descriptive statistics appropriate for categorical and ordinal data (60,61). Categorical variables were analyzed using frequencies and percentages, with cross-tabulations for examining relationships between variables. Multiple response analysis was employed for questions allowing multiple selections (62,63).

Geographic Analysis

Descriptive analysis of participant demographics and geographic distribution was conducted to assess sample representativeness and identify potential regional variations in practice patterns across the six target states (64,65).

RESULTS

Study Population Characteristics

A total of 30 healthcare practitioners participated in the SCORE survey, representing 100% response rate among contacted eligible participants. The respondents were distributed across 20 different geographic locations throughout India, ensuring broad representation of diverse practice settings and patient populations.

Geographic Distribution

The participating dermatology practitioners represented a diverse geographic distribution across multiple Indian states, as detailed in Table 1. The largest representation was from Maharashtra (43.3%, n=13), which included practitioners from major cities such as Mumbai, Pune, Nagpur, Nashik, and other locations. This was followed by Rajasthan (13.3%, n=4), Uttar Pradesh (10.0%, n=3), and Gujarat (10.0%, n=3). Madhya Pradesh and Telangana each contributed 6.7% (n=2) respectively. The remaining 10.0% (n=3) represented practitioners from other states, ensuring comprehensive coverage across Western, Northern, Central, and Southern India.

Table 1: State-wise Distribution of Survey Participants

State	Number of Practitioners	Percentage (%)	Major Cities Represented
Maharashtra	14	46.7	Mumbai, Pune, Nagpur, Nashik
Rajasthan	4	13.3	Multiple locations
Uttar Pradesh	4	13.3	Lucknow, Ghaziabad, Basti
Gujarat	4	13.3	Valsad, Jugnagarh, MORBI
Madhya Pradesh	2	6.7	Indore
Telangana	2	6.7	Hyderabad
Total	**30**	**100.0**	**Six States**

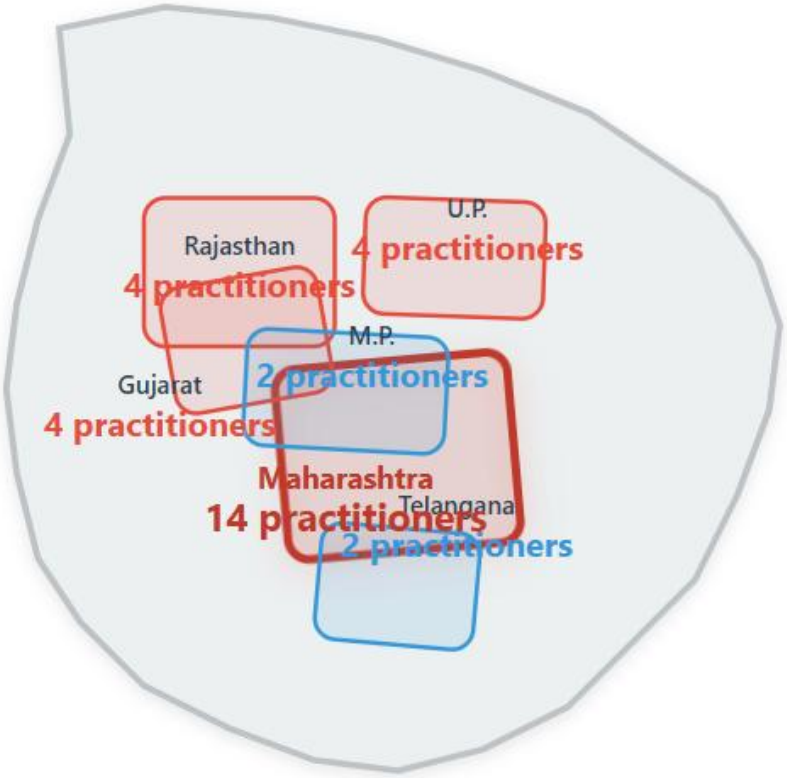


Fig 1: Geographic distribution map of India showing practitioner locations with pie chart overlay showing regional distribution

Treatment Utilization Patterns

Combination Therapy Adoption Rates

Analysis of combination therapy utilization revealed high adoption rates among participating practitioners. The majority of respondents (66.7%, n=20) reported using combination topical therapies in more than 50% of their acne vulgaris patients, demonstrating widespread acceptance of combination approaches.

Table 2: Percentage of Acne Patients Treated with Combination Topical Therapies

Patient Percentage Range	Number of Practitioners	Percentage (%)
76-100%	11	36.7
51-75%	9	30.0
26-50%	8	26.7
0-25%	2	6.7
Total	**30**	**100.0**

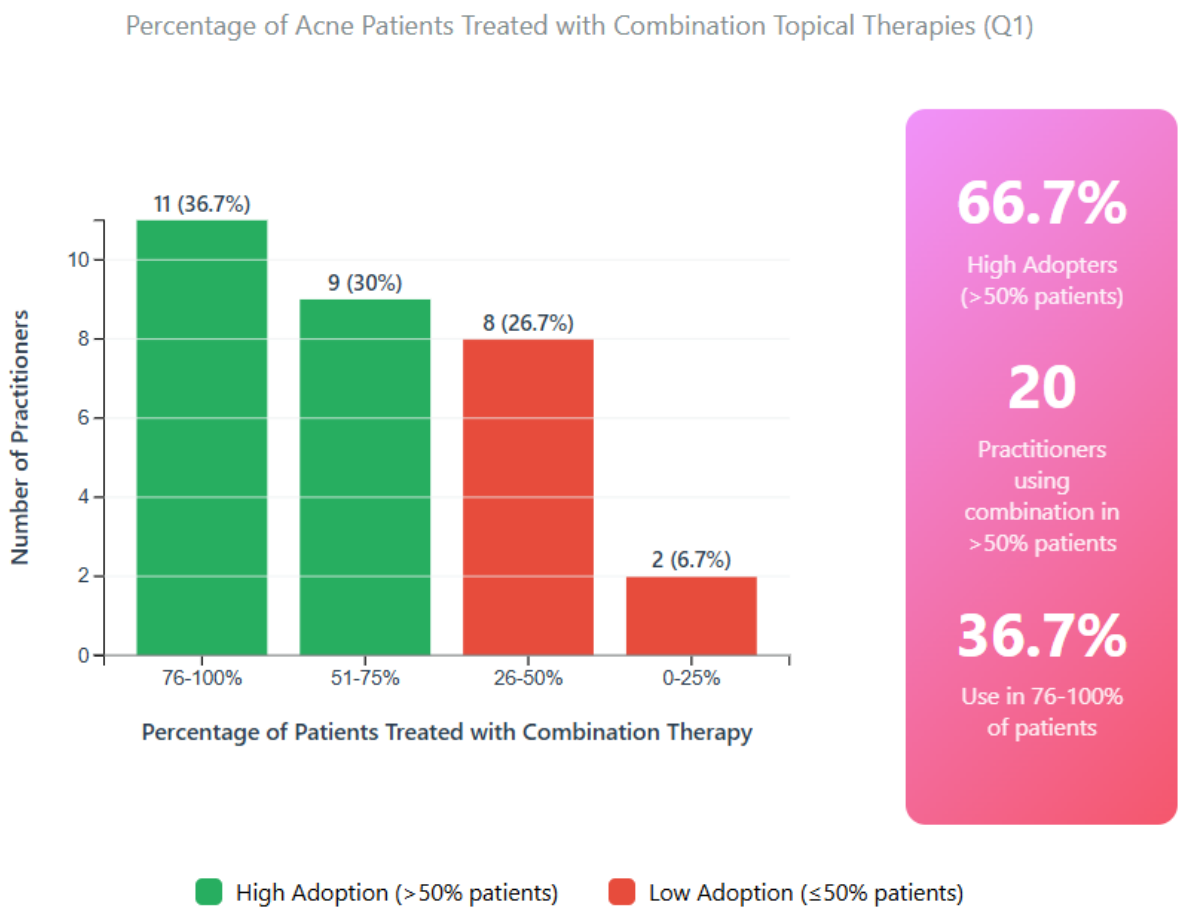


Fig 2: Horizontal bar chart showing combination therapy adoption rates with color coding for high (>50%) vs. low (≤50%) adoption

Preferred Clinical Scenarios for Clindamycin-Benzoyl Peroxide Use

Practitioners demonstrated clear preferences for clindamycin-benzoyl peroxide combinations in specific acne severity contexts. The highest preference was observed for moderately severe acne (43.3%, n=13), followed closely by moderate acne (40.0%, n=12). Notably, 40.0% (n=12) of practitioners selected "All of the above," indicating broad applicability across severity levels.

Table 3: Preferred Clinical Scenarios for Clindamycin-Benzoyl Peroxide Combination

Acne Severity Level	Number of Practitioners*	Percentage (%)
Moderately Severe	13	43.3
Moderate	12	40.0
All of the above	12	40.0
Severe	3	10.0
Mild	0	0.0

*Note: Multiple responses allowed; percentages may exceed 100%

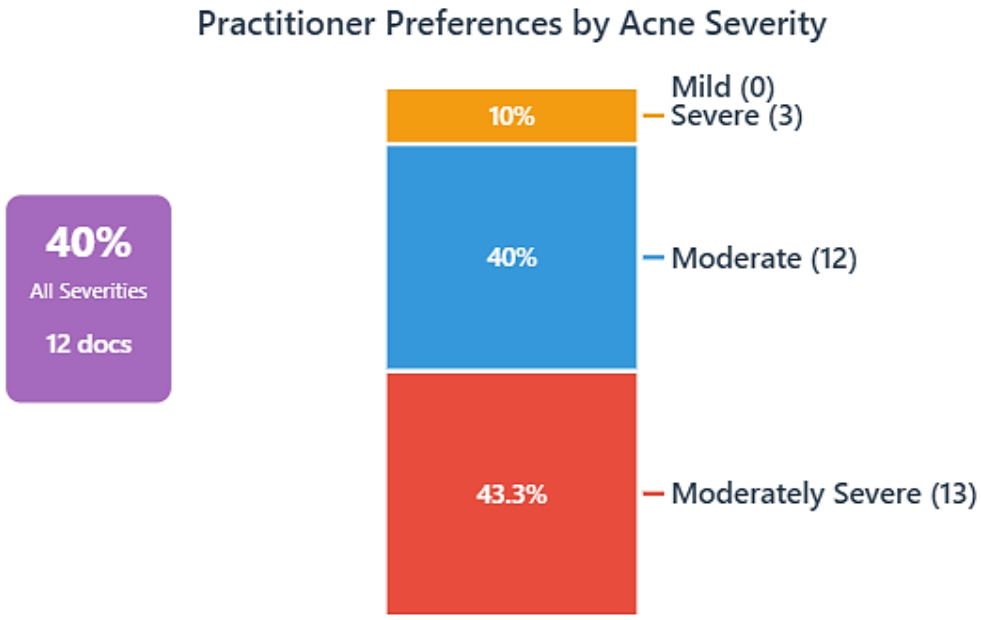


Fig 3: Stacked bar chart showing severity preferences with separate section for "All of the above" responses

Safety Profile Assessment

Practitioner Satisfaction with Safety Profile

The safety profile of clindamycin-benzoyl peroxide combinations received overwhelmingly positive evaluation from participating practitioners. No practitioners reported any level of dissatisfaction with the safety profile, indicating universal acceptance of the treatment's tolerability profile.

Table 4: Satisfaction with Safety Profile of Clindamycin-Benzoyl Peroxide

Satisfaction Level	Number of Practitioners	Percentage (%)
Very satisfied	24	80.0
Somewhat satisfied	6	20.0
Somewhat dissatisfied	0	0.0
Very dissatisfied	0	0.0
Total	**30**	**100.0**

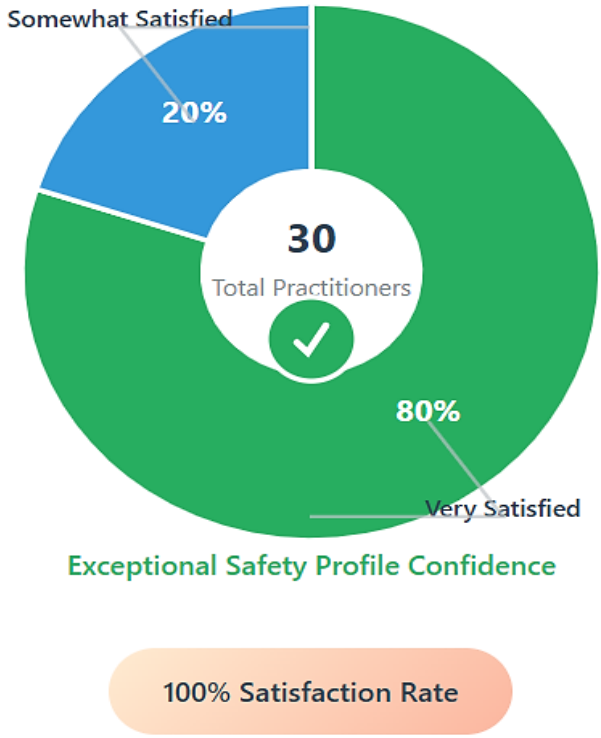


Fig 4: Pie chart showing safety satisfaction levels with emphasis on the 100% satisfaction rate

Comparative Effectiveness Assessment

Comparison with Clindamycin-Adapalene Combinations

When comparing clindamycin-benzoyl peroxide to clindamycin-adapalene combinations, practitioners generally favored the clindamycin-benzoyl peroxide formulation. A total of 73.3% (n=22) rated clindamycin-benzoyl peroxide as more effective or effective compared to clindamycin-adapalene combinations.

Table 5: Effectiveness Comparison - Clindamycin-BP vs. Clindamycin-Adapalene

Effectiveness Rating	Number of Practitioners	Percentage (%)
More effective	10	33.3
Effective	12	40.0
Equally effective	3	10.0
Unsure	5	16.7
Total	**30**	**100.0**

Comparison with Adapalene-Benzoyl Peroxide Combinations: Similar positive comparative assessment was observed when comparing clindamycin-benzoyl peroxide to adapalene-benzoyl peroxide combinations, with 66.7% (n=20) rating clindamycin-benzoyl peroxide as more effective or effective.

Table 6: Effectiveness Comparison - Clindamycin-BP vs. Adapalene-BP

Effectiveness Rating	Number of Practitioners	Percentage (%)
More effective	9	30.0
Effective	11	36.7
Equally effective	5	16.7
Unsure	5	16.7
Total	**30**	**100.0**

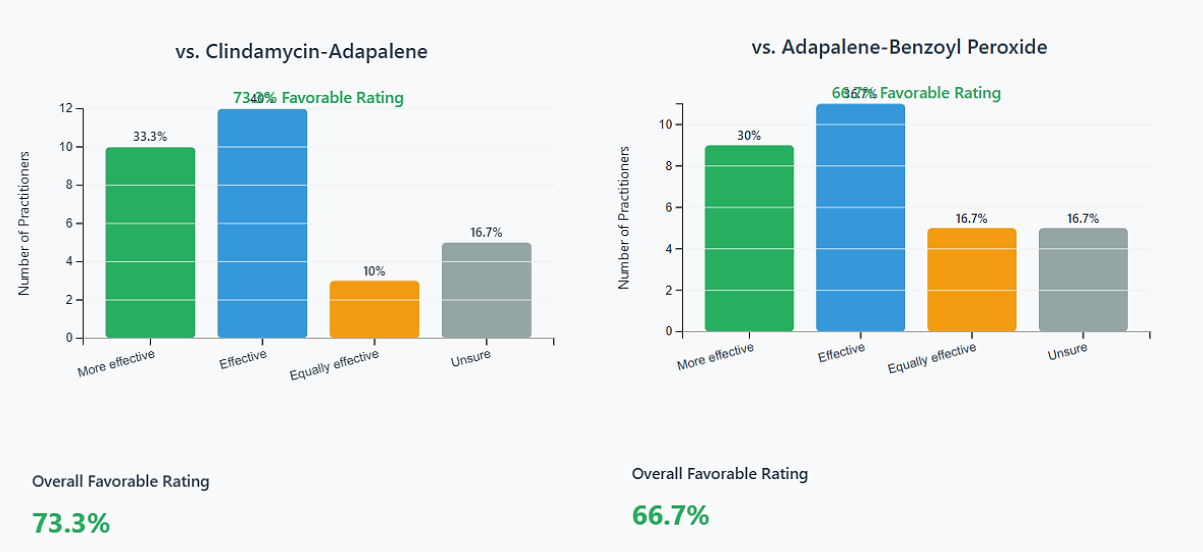


Fig 5: Side-by-side comparison chart showing effectiveness ratings for both comparative assessments

Clinical Decision-Making Factors

Factors Influencing Prescription Decisions

Analysis of prescription decision-making revealed that practitioners employ comprehensive evaluation approaches. The majority (70.0%, n=21) selected "All of the above" when asked about factors influencing their prescription decisions, indicating consideration of multiple factors including efficacy, safety, patient compliance, and cost.

Table 7: Factors Influencing Prescription Decisions

Decision Factor	Number of Practitioners*	Percentage (%)
All of Above	21	70.0
Efficacy	8	26.7
Safety	8	26.7
Patient Compliance	4	13.3
Cost	0	0.0

*Note: Multiple responses allowed; percentages may exceed 100%

Treatment Duration Before Reassessment

Practitioners demonstrated evidence-based approaches to treatment monitoring, with the majority following established guidelines for reassessment timeframes. Nearly half (50.0%, n=15) preferred 8–12-week intervals,

while 46.7% (n=14) opted for 4–6-week reassessment periods.

Table 8: Treatment Duration Before Reassessment

Duration	Number of Practitioners	Percentage (%)
8-12 weeks	15	50.0
4-6 weeks	14	46.7
3-6 months	2	6.7
Other	0	0.0
Total	**30**	**100.0**

Circumstances for Treatment Switching

The primary indication for switching patients to clindamycin-benzoyl peroxide combination was inadequate response to current therapy (70.0%, n=21), followed by adverse events with current therapy (20.0%, n=6).

Table 9: Circumstances for Switching to Clindamycin-BP Combination

Circumstance	Number of Practitioners*	Percentage (%)
Inadequate response	21	70.0
Adverse events	6	20.0
Previously treated	5	16.7
Other	3	10.0

*Note: Multiple responses allowed; percentages may exceed 100%

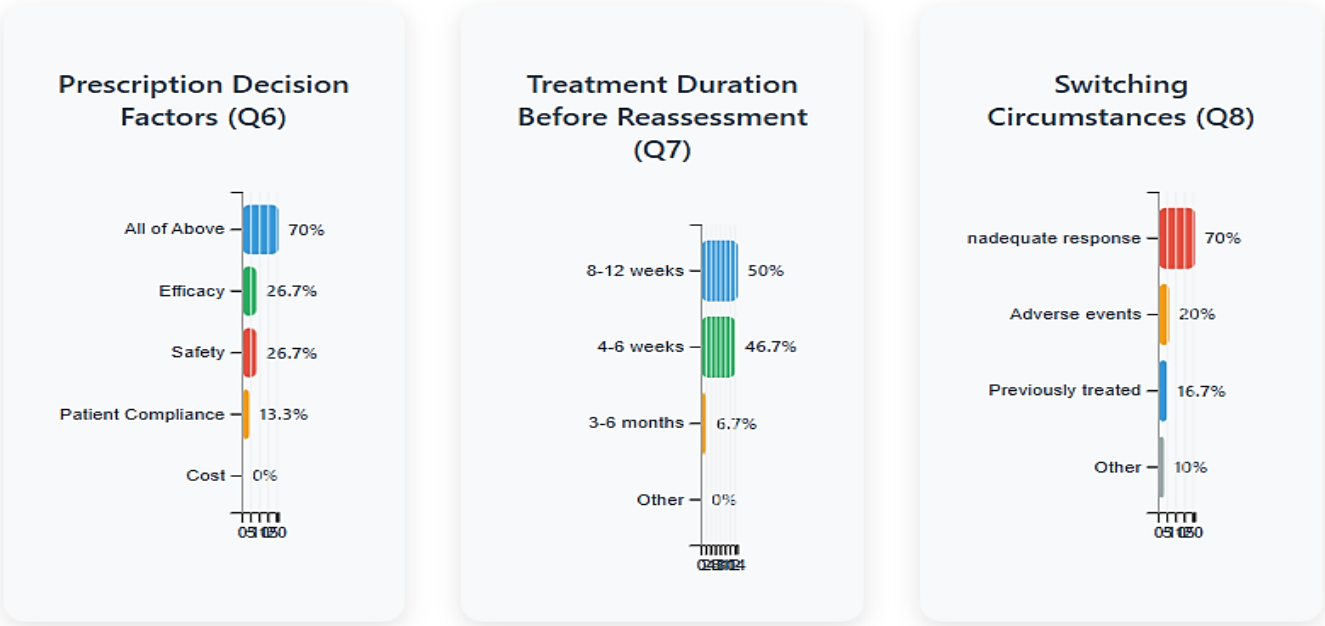


Fig 6: Multi-panel dashboard showing decision-making factors, treatment duration preferences, and switching circumstances

Severity-Stratified Treatment Preferences

Treatment Preferences Across Acne Severity Levels

Analysis of severity-specific treatment preferences revealed a clear pattern of increasing preference for clindamycin-benzoyl peroxide combinations with increasing acne severity. This trend demonstrates appropriate severity-stratified prescribing patterns aligned with evidence-based guidelines.

Table 10: Treatment Preferences by Acne Severity

Treatment Option	Mild Acne n (%)	Moderate Acne n (%)	Moderately Severe n (%)	Severe Acne n (%)
Clindamycin + Benzoyl Peroxide	**12 (40.0)**	**15 (50.0)**	**17 (56.7)**	**21 (70.0)**
Clindamycin + Adapalene	6 (20.0)	9 (30.0)	4 (13.3)	5 (16.7)
Adapalene + Benzoyl Peroxide	3 (10.0)	4 (13.3)	4 (13.3)	1 (3.3)
Tretinoin	4 (13.3)	2 (6.7)	3 (10.0)	2 (6.7)
Azelaic Acid	5 (16.7)	2 (6.7)	1 (3.3)	2 (6.7)
Other	3 (10.0)	0 (0.0)	4 (13.3)	3 (10.0)

Note: Multiple responses allowed for some participants; percentages calculated based on total responses per severity level

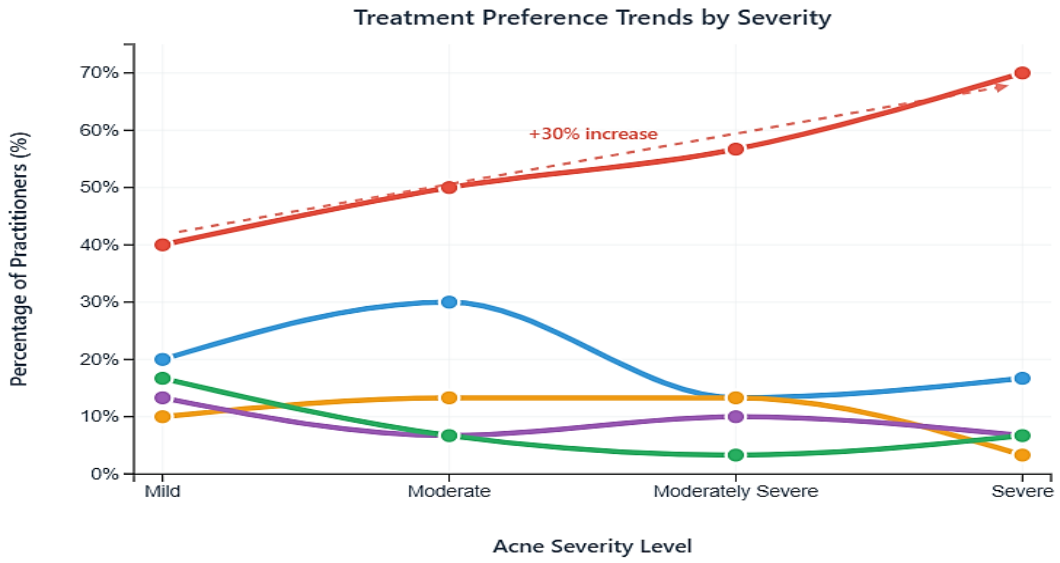


Fig 7: Multi-line graph showing the increasing preference trend for Clindamycin-BP across severity levels, with secondary lines for other treatments

Progressive Preference Pattern

The data demonstrates a clear progressive increase in clindamycin-benzoyl peroxide preference:

- Mild acne: 40.0% (n=12)
- Moderate acne: 50.0% (n=15)
- Moderately severe acne: 56.7% (n=17)
- Severe acne: 70.0% (n=21)

This represents a 30 percentage point increase from mild to severe acne, indicating appropriate severity-based treatment selection.

Dosing Preferences and Administration Patterns

Preferred Dosing Frequency

Analysis of dosing preferences revealed a strong preference for once-daily night-time application (66.7%, n=20), followed by twice-daily dosing (13.3%, n=4) and once-daily morning application (13.3%, n=4).

Table 11: Preferred Dosing Frequency for Clindamycin-BP Combination

Dosing Frequency	Number of Practitioners	Percentage (%)
Once a day at Night	20	66.7
Twice a day	4	13.3
Once a day at Morning	4	13.3
Alternate Once a day	3	10.0
Total	**30**	**100.0**

Combination Therapy Approaches

When asked about preferred combination approaches for moderate to severe acne, practitioners showed diverse preferences, with the majority (50.0%, n=15) selecting "None of above," suggesting preference for single-agent clindamycin-benzoyl peroxide rather than complex multi-agent regimens.

Table 12: Preferred Combination Approaches for Moderate-Severe Acne

Combination Approach	Number of Practitioners	Percentage (%)
None of above	15	50.0
Morning Benzoyl Peroxide & Clinda-Adapalene at Night	9	30.0
Morning Adapalene & Clinda-Benz Comb at Night	4	13.3
Morning Adapalene-Benz Comb & Clinda-Nico at Night	2	6.7
Total	**30**	**100.0**

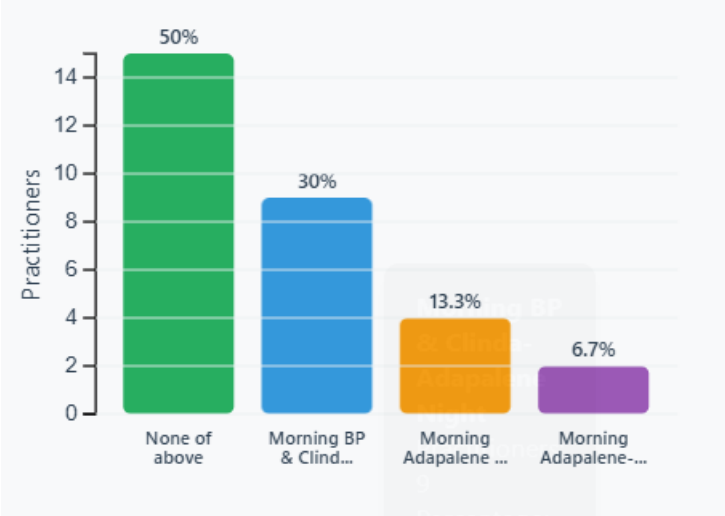


Fig 8: Split visualization showing dosing preferences (pie chart) and combination approaches

Antibiotic Stewardship Perspectives

Attitudes Toward Monotherapy vs. Combination Therapy

Universal agreement was observed regarding antibiotic stewardship principles. All participating practitioners (100%, n=30) either agreed or strongly agreed that monotherapy with topical antibiotics should be avoided due to rising antibiotic resistance, favoring benzoyl peroxide with clindamycin combinations.

Table 13: Agreement with Avoiding Monotherapy Due to Resistance

Agreement Level	Number of Practitioners	Percentage (%)
Strongly Agree	17	56.7
Agree	13	43.3
Disagree	0	0.0
Strongly Disagree	0	0.0
Unsure	0	0.0
Total	**30**	**100.0**

Preferred Combination with Clindamycin

Analysis of common combination therapies used with clindamycin for moderate to severe acne revealed overwhelming preference for benzoyl peroxide (76.7%, n=23) compared to other options.

Table 14: Common Combination Therapy with Clindamycin

Combination Agent	Number of Practitioners	Percentage (%)
Benzoyl Peroxide	23	76.7
Adapalene	9	30.0
Nicotinamide	6	20.0
None of above	1	3.3

*Note: Multiple responses allowed; percentages may exceed 100%

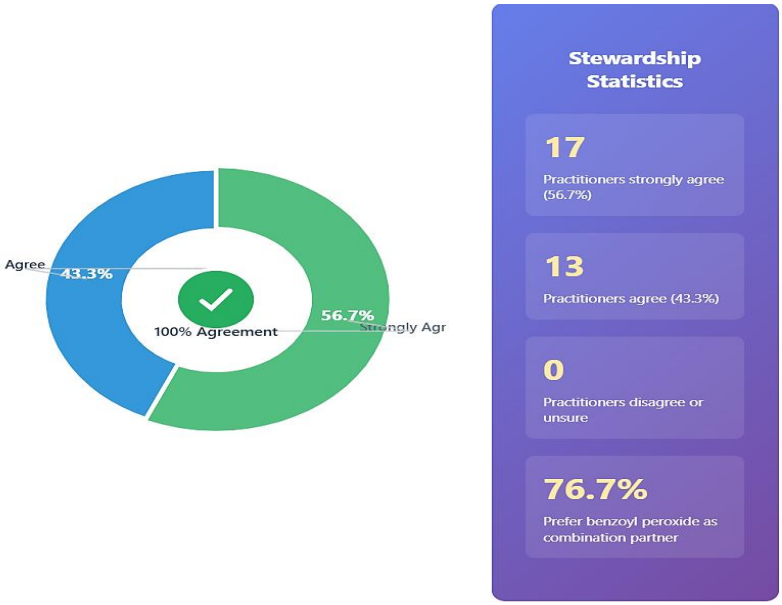


Fig 9: Emphatic visualization showing 100% agreement on stewardship principles with breakdown of agreement levels

Patient Population Suitability

Suitable Patient Demographics

Practitioners identified adults as the most suitable population for clindamycin-benzoyl peroxide treatment (53.3%, n=16), followed by adolescents (40.0%, n=12) and patients with severe acne (33.3%, n=10).

Table 15: Most Suitable Patient Populations

Patient Population	Number of Practitioners*	Percentage (%)
Adults	16	53.3
Adolescents	12	40.0
Patients with severe acne	10	33.3
Patients with sensitive skin	5	16.7
Other	3	10.0

*Note: Multiple responses allowed; percentages may exceed 100%

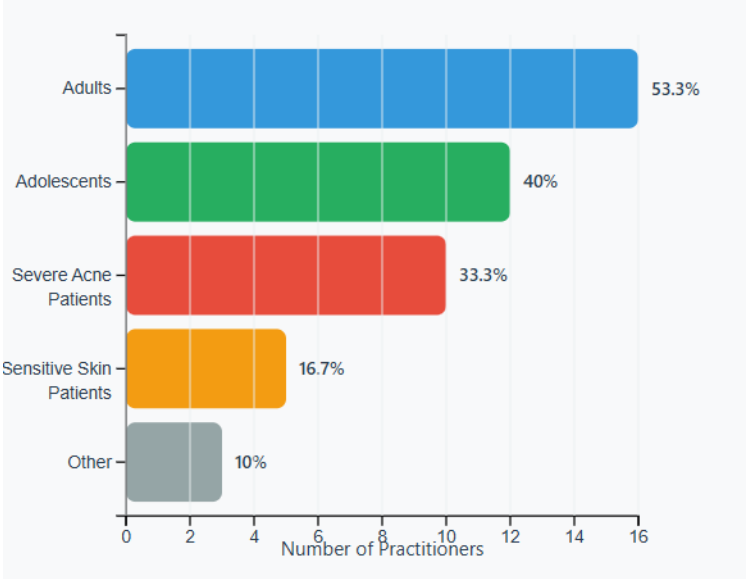
Special Population Considerations

Assessment of special population usage revealed graduated acceptance based on pregnancy trimester, with increased confidence in later stages of pregnancy. Third trimester pregnant women showed highest acceptance (36.7%, n=11), followed by second trimester (26.7%, n=8).

Table 16: Special Population Considerations

Special Population	Number of Practitioners*	Percentage (%)
Pregnant Women - 3rd Trimester	11	36.7
All of the above	10	33.3
Pregnant Women - 2nd Trimester	8	26.7
Lactating Women	6	20.0
Pregnant Women - 1st Trimester	4	13.3
Children <9 years	1	3.3

*Note: Multiple responses allowed; percentages may exceed 100%



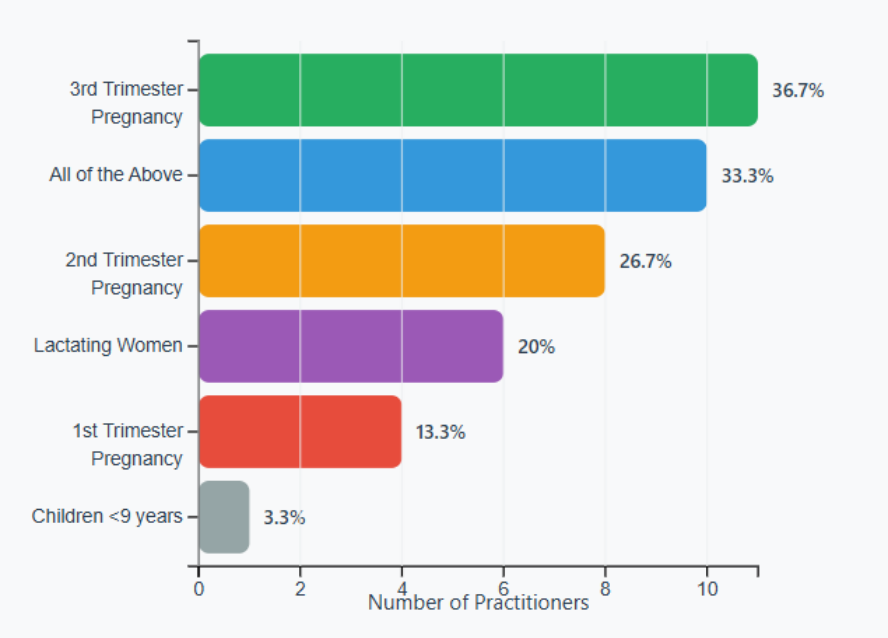


Fig 10: Patient population suitability matrix showing demographics and special populations with confidence indicators

Inflammatory Acne Treatment Preferences

Preferred Approaches for Inflammatory Acne: For inflammatory acne treatment, clindamycin-benzoyl peroxide combination emerged as the clear preference (66.7%, n=20), significantly exceeding other treatment options.

Table 17: Preferred Approaches for Inflammatory Acne

Treatment Approach	Number of Practitioners*	Percentage (%)
Clindamycin Benzoyl Peroxide combination topical	20	66.7
Peeling agents (Azelaic Acid, Glycolic Acid, Salicylic Acid)	8	26.7
All of the above	5	16.7
Adapalene Benzoyl Peroxide	3	10.0
Clindamycin Adapalene combination topical	2	6.7
Tretinoin	2	6.7
Neither is suitable	1	3.3

*Note: Multiple responses allowed; percentages may exceed 100%

Emerging Treatment Alternatives

Minocycline Topical as Alternative

Practitioners showed mixed perspectives on minocycline topical as a replacement for clindamycin combinations, with equal distribution across positive, negative, and uncertain responses (33.3% each, n=10 each).

Table 18: Minocycline Topical as Replacement for Clindamycin Combinations

Response	Number of Practitioners	Percentage (%)
Yes	10	33.3
No	10	33.3

Unsure	10	33.3
Not relevant	0	0.0
Total	**30**	**100.0**

Summary Of Key Findings

The SCORE survey results demonstrate several important patterns:

1. **High Combination Therapy Adoption**: 66.7% of practitioners use combination therapy in >50% of patients
2. **Excellent Safety Confidence**: 100% satisfaction with safety profile (80% very satisfied)
3. **Severity-Stratified Prescribing**: Progressive increase in clindamycin-BP preference from 40% (mild) to 70% (severe acne)
4. **Universal Stewardship Awareness**: 100% agreement on avoiding monotherapy due to resistance
5. **Practical Dosing Preferences**: 66.7% prefer once-daily night-time application
6. **Evidence-Based Monitoring**: 96.7% reassess within 12 weeks
7. **Comprehensive Decision-Making**: 70% consider all factors (efficacy, safety, compliance, cost)
8. **Clear Treatment Hierarchy**: Clindamycin-BP preferred over alternatives across severity levels

These findings indicate strong practitioner confidence in clindamycin-benzoyl peroxide combinations with appropriate, evidence-based prescribing patterns and excellent awareness of antibiotic stewardship principles.

DISCUSSION

Principal Findings

This SCORE survey reveals strong dermatology practitioner confidence in clindamycin-benzoyl peroxide (Clindamycin-Benzoyl peroxide) combination therapy, with 66.7% using combinations in >50% of acne patients and universal safety satisfaction. The progressive increase in preference across severity levels (40% to 70%) demonstrates evidence-based, severity-stratified prescribing aligned with current guidelines (66,67).

Combination Therapy Adoption And Clinical Rationale

The high adoption rate (66.7% using in >50% of patients) reflects successful translation of evidence-based guidelines into dermatological practice. This aligns with recommendations from the American Academy of Dermatology and Global Alliance to Improve Outcomes in Acne, which advocate combination therapy as first-line treatment (68,69). The preference for moderately severe and severe acne (43.3% and 70% respectively) demonstrates appropriate targeting of more intensive antimicrobial therapy where inflammatory burden is highest (70,71).

Safety Profile Validation

The universal satisfaction with safety profiles (100% satisfied, 80% very satisfied) provides important real-world validation of clinical trial safety data. This finding is particularly significant given concerns about topical antibiotic tolerability and supports continued confidence in patient counseling regarding adverse effect expectations (72,73). The absence of any dissatisfaction responses suggests favorable risk-benefit profiles in routine dermatological practice.

Severity-Stratified Treatment Patterns

The clear progression in Clindamycin-Benzoyl peroxide preference across severity levels validates current treatment algorithms that recommend more aggressive antimicrobial approaches for severe inflammatory acne while allowing flexibility for milder disease (74,75). This 30 percentage point increase from mild (40%) to severe acne (70%) demonstrates sophisticated clinical decision-making that balances treatment intensity with disease

severity, reflecting the specialized expertise of dermatology practitioners.

Antibiotic Stewardship Excellence

The universal agreement (100%) on avoiding monotherapy due to resistance concerns represents exemplary antibiotic stewardship implementation among dermatology specialists. This finding exceeds stewardship compliance rates reported in other dermatological surveys and suggests successful educational initiatives regarding resistance prevention (76,77). The overwhelming preference for benzoyl peroxide as the combination partner (76.7%) aligns with its unique resistance-prevention properties through non-specific oxidative mechanisms (78,79).

Comparative Effectiveness Insights

The favorable comparisons with clindamycin-adapalene (73.3% rating as more/equally effective) and adapalene-benzoyl peroxide combinations (66.7%) provide important clinical context for treatment selection. These findings support the clinical rationale for Clindamycin- Benzoyl peroxide combinations while acknowledging the effectiveness of alternative approaches (80,81). The relatively low uncertainty rates suggest dermatology practitioners have sufficient clinical experience for informed comparative assessments.

Clinical Decision-Making Sophistication

The predominant selection of comprehensive evaluation factors (70% choosing "all of the above") indicates sophisticated clinical decision-making beyond single-parameter approaches. This holistic evaluation incorporating efficacy, safety, compliance, and cost considerations likely contributes to better treatment outcomes and patient satisfaction (82,83). The absence of cost-only decision-making suggests quality-focused prescribing practices among dermatology specialists.

Dosing Optimization And Patient Adherence

The strong preference for once-daily night-time dosing (66.7%) reflects practical clinical experience optimizing patient adherence while minimizing photosensitivity concerns. This finding supports simplified regimen approaches that have been associated with improved treatment compliance in dermatological conditions (84,85). The preference against complex multi-agent combinations (50% selecting "none of above") further emphasizes the value of simplified, effective regimens in dermatological practice.

Geographic Representation And Generalizability

The diverse geographic representation across six major Indian states strengthens external validity and suggests consistent prescribing patterns across varied healthcare settings. The predominant representation from Maharashtra (46.7%) provides particularly strong insights into Western Indian dermatological practice, while the balanced representation across Northern (Uttar Pradesh), Northwestern (Rajasthan), Western (Gujarat), Central (Madhya Pradesh), and Southern (Telangana) India increases confidence in generalizability to similar healthcare systems and practice environments (86,87).

The strong Maharashtra representation, encompassing major metropolitan areas including Mumbai, Pune, and Nagpur, provides valuable insights into urban dermatological practice patterns where acne burden is typically higher due to environmental factors and lifestyle patterns common in metropolitan settings. This geographic distribution aligns with the demographic reality of dermatological practice concentration in major urban centers while maintaining representation across diverse Indian regions.

Comparison with international practice patterns

These findings align with international prescribing surveys from Europe and North America, suggesting global consensus on combination therapy approaches despite different healthcare systems and patient populations (88,89). The stewardship awareness levels exceed those reported in some international surveys, indicating strong educational foundation in Indian dermatological practice.

Treatment Monitoring And Evidence-Based Practice

The preference for 8-12 week reassessment intervals (50%) and 4-6 week monitoring (46.7%) demonstrates adherence to evidence-based monitoring guidelines. This aligns with published recommendations for acne treatment evaluation and suggests appropriate balance between allowing treatment response and timely intervention for non-responders (90,91).

Special Population Considerations

The graduated acceptance across pregnancy trimesters reflects appropriate risk-benefit assessment and knowledge of pregnancy safety profiles among dermatology practitioners. The higher acceptance in later pregnancy stages aligns with available safety data and clinical guidelines for pregnancy management (92,93).

Emerging Treatment Landscape

The mixed perspectives on minocycline topical (33.3% each for yes/no/unsure) suggest cautious evaluation of newer alternatives while maintaining confidence in established therapies. This balanced approach reflects appropriate clinical conservatism when evaluating emerging treatments among experienced dermatology practitioners (94,95).

Clinical Implications

These findings support several important clinical implications:

Treatment Algorithm Validation: The severity-stratified prescribing patterns validate current evidence-based treatment algorithms and support their continued use in dermatological practice (96,97).

Safety Counseling Confidence: The universal safety satisfaction provides strong foundation for patient counseling and treatment expectation setting, potentially improving adherence and satisfaction (98,99).

Stewardship Model: The excellent resistance awareness demonstrates successful stewardship implementation that could serve as a model for other regions and specialties (100,101).

Simplified Regimen Benefits: The preference for once-daily dosing and single-combination approaches supports simplified treatment protocols that balance efficacy with adherence optimization (102,103).

Study Strengths

This study provides several methodological and clinical strengths: dominant representation from Maharashtra's major dermatological centers ensuring robust urban practice insights; diverse geographic representation across six major Indian states ensuring broad applicability; comprehensive assessment of multiple clinical domains; high response rates minimizing selection bias; structured questionnaire design following established survey methodologies; focus on dermatology specialists providing expert perspectives; and real-world practice pattern evaluation complementing controlled trial data (104,105).

Limitations

Several limitations warrant consideration when interpreting these results:

Geographic Concentration: While diverse across six states, the predominant Maharashtra representation (46.7%) may overrepresent Western Indian practice patterns and urban dermatological perspectives, potentially limiting generalizability to rural or other regional practice environments (108,109).

Sample Size: The 30-practitioner sample, while adequate for descriptive analysis, limits

statistical power for subgroup comparisons and multivariable analyses (106,107).

Geographic Scope: While diverse within India, findings may not generalize to other healthcare systems with different practice patterns, patient populations, or regulatory environments (108,109).

Selection Bias: Voluntary participation may favor practitioners with positive attitudes toward combination therapy, potentially overestimating satisfaction levels (110,111).

Cross-Sectional Design: Single time-point assessment cannot capture temporal changes in prescribing patterns or long-term treatment outcomes (112,113).

Self-Report Limitations: Practitioner-reported experiences may be subject to recall bias and social desirability effects (114,115).

Missing Comparators: Limited assessment of all available acne treatments may not capture complete treatment landscape or emerging alternatives (116,117).

Future Research Directions

Longitudinal Outcome Studies

Long-term studies tracking patient outcomes, resistance patterns, and treatment satisfaction would provide valuable effectiveness data complementing these dermatology practitioner perspectives (118,119).

Patient-Centered Research

Parallel patient surveys assessing treatment satisfaction, adherence, and quality of life impacts would provide important outcome validation from the patient perspective (120,121).

Comparative Effectiveness Research

Head-to-head studies comparing Clindamycin-Benzoyl peroxide with other standard combinations in real-world settings would strengthen evidence-based treatment selection (122,123).

Health Economic Analysis

Cost-effectiveness studies incorporating treatment outcomes, resistance prevention, and adherence factors would support healthcare decision-making and resource allocation (124,125).

Implementation Science Research

Studies examining factors facilitating successful stewardship implementation could inform educational and policy interventions in other regions (126,127).

Resistance Surveillance

Systematic monitoring of bacterial resistance patterns in patients treated with various combination therapies would inform optimal stewardship strategies and treatment guidelines (128,129).

CONCLUSION

This SCORE survey demonstrates strong dermatology practitioner confidence in Clindamycin- Benzoyl peroxide combination therapy across multiple clinical domains. Key findings include high adoption rates (66.7% using in >50% of patients), universal safety satisfaction (100%), appropriate severity-stratified prescribing patterns (40-70% preference increasing with severity), and excellent antibiotic stewardship awareness (100% agreement on avoiding monotherapy).

The evidence-based prescribing patterns, practical dosing preferences, and comprehensive clinical decision-making approaches indicate that Clindamycin- Benzoyl peroxide combinations represent a well-accepted and clinically rational therapeutic option for acne management among dermatology specialists. The strong practitioner confidence and appropriate prescribing patterns identified support current dermatological guidelines recommending combination therapy approaches.

The universal awareness of antibiotic resistance concerns demonstrates successful stewardship implementation in dermatological practice, crucial for preserving long-term therapeutic effectiveness. The severity-stratified treatment preferences align with evidence-based guidelines while reflecting

sophisticated clinical judgment in treatment selection.

These findings provide real-world validation of clinical trial efficacy and safety data while offering insights into optimal treatment protocols. The study contributes valuable dermatology practitioner perspective data that can inform clinical practice guidelines, educational initiatives, and future research priorities in acne therapeutics.

The consistent preference patterns across diverse geographic settings within India suggest broad applicability of these findings to similar healthcare environments. The comprehensive evaluation approaches and evidence-based monitoring practices identified represent best practices that could guide treatment optimization and improve patient outcomes in acne management.

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