

LED light therapy for facial acne – Attitudes of GPs and frequency of encounter in the general practice: A retrospective questionnaire-based pilot study

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Abstract

Facial acne vulgaris is a common disorder with typical onset in adolescence. The Royal Australian College of General Practitioners (RACGP) has suggested that Light Emitting Diode (LED) appeared to be a useful adjunct therapy in the treatment of acne. Clinical studies examining red/blue LED therapy suggests potential antibacterial and anti-inflammatory effects on facial acne. The goal of our study was to examine the attitudes of primary care physicians towards LED therapy as a treatment for facial acne and its frequency of encounter. General practitioners within the metropolitan area of Sydney were contacted via email, phone or face-to-face interview to complete a standardized questionnaire evaluating their opinions and/or experiences with LED therapy. Patient charts of those 15 to 50 years of age presenting with facial acne were reviewed to assess treatment regimen and the role of LED in their management. Eleven physicians volunteered for this study with forty-six patient charts reviewed. The opinions expressed by the physicians as a collective suggest that LED therapy is not advocated nor implemented in primary care. LED therapy was not included as part of the management plan for the forty-six patient cases reviewed. About one-third of patients were referred for specialist care. Therapeutic modalities utilized in management reflect suggestions from RACGP, Australian Family Physician (AFP), and Australian Journal of General Practice (AJGP) publications. The findings of this pilot study suggest that general practitioners are not familiar with LED light therapy as a treatment modality for acne. Furthermore, LED light therapy is seldom encountered in the management of facial acne in general practice settings.

Keywords

acne, general practice, light-emitting diode

Introduction

Facial acne vulgaris is a common dermatological condition with a typical onset observed in adolescence, however, can persist into adulthood.^[2] In a primary care setting, it is estimated that general practitioners (GP) see patients presenting with acne at a prevalence rate of 0.5%.^[1] Due to the ubiquitous nature of acne, it is likely that the number of cases seen in the primary care setting may be underestimated. In addition, patients afflicted with acne are more likely to try over-the-counter products and anecdotal treatments before presenting to the GP. Patients with acne are also likely to present for another medical issue in which

the acne is coincidentally identified and discussed by the treating physician.^[3] There are different types of acne ranging from simple superficial non-inflammatory comedones in the mild cases to multiple disfiguring inflammatory nodules in severe cases.^[4] The pathophysiology of the condition is thought to arise from a combination of four processes: excessive sebaceous gland activity, keratinization of sebaceous ducts, colonization of *Propionibacterium acnes* (*P. acnes*), and inflammation. Excessive activity of the bacteria *P. acnes* which is a commensal in some individuals is believed to provoke inflammation of the sebaceous glands.^[5,6] The majority of acne cases are mild or moderate in severity, many of which may be subclinical and have a favorable prognosis with treatment resulting in minimal scarring. The prognosis of severe acne is likely to result in permanent scarring without early and adequate treatment.^[2,7,8] Although facial acne is not an immediately life threatening condition regardless of its severity, it may result in reduced self-esteem, lower quality of interpersonal relationships, social isolation, and diminished psychosocial wellbeing of afflicted individuals.^[9] Depression and suicidal ideation have been associated with the condition in some cases and the extent of psychological distress is suggested to be independent of disease severity.^[7]

Recent articles published in Australian Family Physician (AFP) and Australian Journal of General Practice (AJGP) were supported by the RACGP, suggesting that diagnosis should be made clinically based on history which includes the age and gender of the patient, familial predisposition, physical symptoms and signs the patients present with, and a physical exam.^[4] Recent advances in medical diagnostic technology suggest that LED lamps and fluorescent lights may have a role in the diagnosis of acne.^[10,11] Prudent referral to endocrinologists and/or dermatologists will be guided by the severity of the presenting problem or the presence of complex contributing factors. It is recommended that all moderate and severe cases of acne be considered for referral to a dermatologist. Severe cases of acne that do not resolve with over-the-counter treatment should be referred to endocrinologists and/or dermatologists for professional opinion and management.^[4] Treatment is guided by severity, the recommended first line therapy for milder cases is lifestyle modification with an emphasis on correct facial hygiene, healthy diet, adequate physical activity, and stress management. Pharmacotherapeutic agents are usually utilized as first line therapy in more severe cases where lifestyle modifications alone have failed to demonstrate significant benefit.^[4,12] An article published in 2006 by the AFP/AJGP mentions that the role of light-based therapy in the management of acne is at best an alternative or as an adjunct, particularly in the instances where standard therapy has failed or where prolonged antibacterial therapy is of concern.^[13]

The agents used in the management of facial acne may involve one of the following agents either as monotherapy or a combination therapy: topical benzoyl peroxide, topical and/or oral antibiotics, the oral contraceptive pill (for females), and topical or oral derivatives of vitamin A. Severe cases warrant laboratory testing and referral to specialists for second opinion and shared management.^[4]

Isotretinoin (Roaccutane®), an oral vitamin A derivative, is currently the most effective treatment and the so called 'magic bullet' for acne. Its mechanism of action is thought to suppress sebaceous glandular activity via inflammatory signaling.^[4,7] It is reserved for recalcitrant, nodulocystic, resistant, disfiguring, or severe cases due to its side effect profile which may limit its usefulness as a long-term agent. Major undesirable effects include a tendency to induce a rebound flare of acne, severe depression, suicidal ideation, dry skin, thinning skin, bone mineralization abnormalities, hepatotoxicity and teratogenicity.^[12,14] The use of isotretinoin does not prevent future recurrences, but may result in long term remission of acne. The concomitant use of at least two different modes of contraceptive methods is advised when isotretinoin is considered in females of reproductive years due to the teratogenic potential.^[14]

The use of topical retinoids (i.e. Adapalene®) may not carry the same adverse effect profile as that of oral retinoids, however, they may not be as effective as oral retinoids. They act by comedolysis and are more effective than salicylic acid as a comedolytic agent. As such, they are invaluable and have been recommended by the RACGP in all grades of acne. The most common side effects are photosensitivity which may be less tolerated by those with sensitive skin. [4,15]

In situations where not contraindicated in reproductive age females, the oral contraceptive may be considered as a treatment option even in the absence of isotretinoin co-therapy. A formulation involving cyproterone or spironolactone has been shown to be as effective as the use of a tetracycline alone. However, the therapeutic anti-androgenic effects and sebaceous gland suppression can take several months to become clinically apparent. [7]

Antibiotic therapy is aimed at reducing the activity of *P. acnes*. The concern with antibiotic therapy which limits its usefulness is the potential of propagating antimicrobial resistance when not prescribed prudently. In some countries, at least half of the *P. acnes* strains have demonstrated antibiotic resistance, particularly towards the macrolide class of antibiotics. [5] Trimethoprim and minocycline have been reported to be the agents with least resistance when used to treat *P. acnes*. [7] Tetracycline class antibiotics are used for their anti-inflammatory activity rather than bactericidal action. [14]

Topical antibiotics act slower than oral antibiotics, and benzoyl peroxide has a greater bactericidal activity than topical antibiotics. If topical therapy is used, it is common to combine benzoyl peroxide with topical antibiotics. If systemic therapy is desired, a combination of oral vitamin A derivative, oral antibiotics, and topical benzoyl peroxide is recommended. Combining therapy with different mechanisms of action is more likely to achieve faster and desired effects than monotherapy. [7]

Current recommendations suggest that topical antibiotics have a role to play in the management of acne. The suggested topical antibiotics are topical clindamycin and topical erythromycin, both appear to have similar efficacy. Oral antibiotics should be considered carefully and only in moderate to severe cases. Oral doxycycline is first choice with minocycline being an alternative where the former is not tolerated or contraindicated. If oral tetracyclines are not tolerated or contraindicated, oral erythromycin should be substituted. The combination therapy of oral and topical antibiotics is not advised as it does not provide any additional therapeutic benefit and may in fact carry the risk of contributing to antimicrobial resistance. Topical benzoyl peroxide and topical retinoids should be included in the regimen as antibiotic sparing agents where possible. [4]

Persons afflicted with acne who also have antibiotic resistant *P. acnes* are more likely to benefit from the inclusion of benzoyl peroxide as part of management. [5] The use of benzoyl peroxide should be encouraged early on in the treatment regimen because it is not associated with antibiotic resistance [4] and is effective against both antibiotic susceptible and resistant strains of *P. acnes*. The utility of topical benzoyl peroxide is limited by the extent of drug penetration into the skin or its mild side effects such as bleaching and skin irritation which may be less tolerated by some patients. [7]

Light-based therapies for acne involve the manipulation of the cellular environment to reduce the inflammation triggered by the activity of *P. acnes* or to modulate the activity of sebaceous glands, both of which are implicated in the pathogenesis. [16] Red (613nm) or blue (415nm) lights are thought to provide the energy necessary to induce the formation of reactive oxygen singlet radicals from bacterial porphyrins within

P. acnes, thereby causing bacterial destruction.^[17,18,19,20] Sources of light may include fluorescent lamps, halogen lights, LED diode arrays or lasers.^[16]

For all forms of light therapy to be effective, it is imperative that the correct wavelength and correct dosage be used in the treatment. Red and blue light encompass a range of light wavelengths, however blue light with a wavelength between 415-420nm or red light with a wavelength of 613nm appears to confer optimal therapeutic effect.^[20] Application of blue or red light with wavelengths outside these ranges are less likely to be effective. Blue light wavelength of 418 appears to be optimal in the photoexcitation of porphyrin producing free oxygen radicals for bactericidal action within *P. acnes*. Blue light, however, has poor skin depth penetration, while red light has better skin penetration and plays an anti-inflammatory role owing to cytokine modulation.^[20] Administering combination therapy of both red and blue light together has better outcomes than blue or red light therapy alone.^[21] Light intensity and dosage are important factors to consider, the right amount of light energy radiated at a sufficient duration is vital to produce a biological and therapeutic effect in addition to avoiding transformation and loss of excessive light energy as heat.^[22]

Laser is a light-based therapy which employs focused light energy at a greater intensity than LED lights,^[23] resulting in bactericidal action via activation of bacterial porphyrins, reducing inflammation and induction of collagen deposition around sebaceous glands which reduces glandular activity.^[24] When laser is coupled with a targeted cryogen spray, sebaceous glands can be effectively destroyed.^[20] Seaton et al (2003), in a well-designed randomized controlled clinical trial involving therapeutic pulsed-dye lasers (PDL) and sham lasers as controls showed that laser therapy was useful for inflammatory acne with therapeutic effect favoring PDL over sham laser treatment.^[25]

Studies have also examined the effect of combination light therapy on acne. The application of 5-aminolevulinic acid (5ALA) with light therapy is known as photodynamic therapy (PDT). This is thought to augment the process of producing reactive radicals as 5ALA is chemically converted to porphyrins under the action of light energy. The action of these free radicals is not only directed at *P. acnes* but also at the sebaceous glands. PDT is more commonly used in the treatment of basal cell skin carcinomas, squamous skin carcinomas, and actinic keratosis.^[14] The combination of light therapy with topical 5ALA in the treatment of moderate to severe acne suggests a possible beneficial effect even in the absence of concurrent oral or topical antibiotics.^[10,17,26,27] There is evidence to suggest the benefits of a low dose 5ALA regimen outweigh the adverse events when used for severe or cystic acne.^[27] These studies identified significant yet self-limiting adverse effects such as erythema, burning sensation, hyper-exfoliation, and crusting.^[10,28] These side effects are dose dependent and worsen with greater light intensity and/or dosage. Therefore, the lowest dose should be used where possible to minimize adverse effects while producing therapeutic effect.^[29] There is evidence that red light PDT is well tolerated.^[30] In the absence of 5ALA, LED light therapy alone did not carry the same adverse effects.^[31]

In a Chinese study where PDT monotherapy was compared against laser monotherapy or LED monotherapy for efficacy, all forms of light therapy resulted in improvement of moderate to severe acne. However, PDT was found to produce the most therapeutic benefit with fewer number of treatment sessions required to achieve disease reduction compared to laser therapy or LED therapy. Though all three modalities had self-limiting side effects, those associated with PDT therapy had the longest duration lasting several days. The side effects of laser or LED based light therapy were much milder and subsided within hours post treatment session.^[28]

Sadick (2009) studied the effect of combining two light therapy modalities, that is LED light with near infra-red light-therapy, to treat a small sample of persons with moderate acne in a pilot study. The authors of this study concluded that the combination of LED light with near infra-red achieved better efficacy with treating non-inflammatory acne lesions than either modality alone.^[32]

Kwon and colleagues (2012) through a double-blinded randomized controlled trial of LED devices for usage at home in the treatment of mild to moderate acne, demonstrated clinically that LED therapy reduced the lesion size and counts. Histological analysis showed there was a reduction in sebaceous gland activity and reduced biochemical indicators of inflammation.^[33]

Ash and colleagues conducted a randomized control study in 2015 examining the effect of high intensity blue light-therapy delivered through solid state diode arrays to treat persons with mild to moderate acne. Their results showed a reduced inflammatory lesion count as a primary outcome. Improved patient satisfaction, reduced severity and recurrence were observed as secondary outcomes.^[31]

The efficacy of combination blue and red LED light treatment has also been studied. The landmark randomized clinical study conducted by Papageorgiou (2000) demonstrated that the combination of red and blue LED light therapy was significantly superior when compared to either blue light, red light, or benzoyl peroxide topical treatment alone in a 12-week study of mild to moderate acne.^[34] Goldberg and Russell (2006) built on this and observed that persons with severe acne had a slightly better therapeutic effect than those suffering with moderate or mild acne when treated with the combined blue and red LED therapy.^[35]

The consensus is that most studies conducted on animal and human models of mild to moderate acne showed a similar beneficial effect when exposed to blue and/or red LED therapy.^[18,19,36,37,38] However, many of these studies are limited by study design issues. Methodological limitations include lack of a control group, poor sampling size, and lack of randomization or blinding.^[35,36,38,39,40]

Though the current evidence for the role of light therapy in the management of acne is non-conclusive, it suggests that treatment modalities other than conventional therapy may have a place and potential as an adjunct to standard care to maximize clinical resolution and satisfaction, while minimizing adverse events. Elman and Lebzelter in their 2004 paper have proposed that LED therapy be considered in situations where antibiotic sparing is desired or as an adjunct when isotretinoin therapy is to be weaned.^[20] A potential concern with using self-administration of light therapy involves over-the-counter home handheld LED devices. Very few of the current devices on the market are supported by clinical trials which assessed their efficacy.^[41] In addition, patients who have used these devices may do so with unrealistic expectations based upon product misinformation.^[42]

A systematic review by Jagdeo and colleagues (2018) assigned level B evidence for the use of LED to treat acne vulgaris after evaluating eight randomized controlled clinical trials examining red or blue light in the treatment of acne vulgaris.^[43] To date, no studies have yet examined the frequency of LED light phototherapy use by general practitioners in the primary health care setting. The purpose of this study was firstly to investigate the opinions and attitudes of general practitioners on the use of LED light in the management of patients suffering from facial acne; and secondly, to evaluate the frequency with which LED therapy is encountered in the general practice setting. We hypothesize that the proposed therapy will be encountered in the community but will not be commonly utilized as part of management.

Methods

The ethics approval was granted by the institutional research board of the Oceania University of Medicine. Data was collected retrospectively from general practitioners within the metropolitan area of Sydney via questionnaire delivered by email, phone or face-to-face interview. Physicians who responded were approached and informed consent was discussed and obtained. Participating physicians were evaluated for their opinions and prior experience with LED light therapy. In addition, each of the participating physicians was requested to recall or provide data for up to ten cases of facial acne. The criteria for inclusion was patients aged 15 to 50 years, presenting in the past 5 years with a diagnosis consistent with acne vulgaris of the face. Exclusion criteria included persons aged under 15 or older than 50 years of age. Persons with a diagnosis of acne affecting parts of the body other than the face were excluded from this study. Confidentiality of patient information was maintained and enforced. Any data decoded and collected was used solely for the purpose of this study. Participating general practitioners were also given the option to answer the questionnaire anonymously at their leisure via secure Google Forms™.

Physicians were asked to answer the following questions:

1. Have you ever encountered or advocated for blue/red LED light therapy in the treatment of acne in your practice?
2. Would you recommend blue/red LED light therapy as an adjunct in the treatment of acne to future patients?
3. What do you think about the effectiveness of the LED light therapy as an adjunct for acne treatment?
4. What do you think are or might be side effects associated with using LED light therapy as therapy for acne?
5. What are common antibiotics and topical agents you might prescribe with LED light therapy?
6. Physicians were also invited to provide further comments.

For each patient case volunteered, basic demographics such as age, gender, disease severity and duration were obtained. Disease severity indicated was judged by their respective treating physician. Data on treatment modalities was collected via multiple-response check boxes in which physicians were asked to select from a predetermined list of responses, with all options applying to a given case. Possible answer options included referral as part of management, no active treatment, reassurance and health advice, topical agents, oral antibiotics, benzoyl peroxide, hormonal therapy including combined oral contraception (COCP), isotretinoin, salicylic acid, topical retinoid, LED therapy, and other. For each case volunteered, physicians were given the option to volunteer reasons for possible treatment failure or disease relapse if they had deemed therapy was inadequate.

Results

A total of thirty-eight medical clinics (medical centers or private practices) were contacted via email, phone call, or face-to-face visit. Of the clinics contacted, a total of 11 physicians from 10 different clinics responded and consented to participate in the study. All 11 of the participating physicians consented to provide their opinions to the standardized questions. Only one general practitioner declined to provide access to patient

data for review, that participant stated that the intervention of interest was not used in any of his patients. Data was obtained from a total of 46 patients reviewed retrospectively between the 10 physicians.

Physician opinions on LED therapy:

Results from the study found that 10 out of the 11 physicians were not familiar with LED therapy for the treatment of acne. One physician volunteered the use of LED therapy for an unrelated dermatological condition. All the physicians reported they did not have enough knowledge or experience with the use of this therapy. When advocacy of use was investigated, 9 out of the 11 physicians stated they would not recommend LED light therapy to their patients. The remainder would consider it as part of treatment only if guidelines advocated for its usage. All physicians declined to comment on the efficacy of the LED therapy. When physicians were asked about adverse effects associated with LED therapy, 7 responded that they were not comfortable discussing the adverse effects, and 4 raised concerns of possible burns, secondary infection, post exposure light sensitivity, hyperpigmentation, and tanning. When questioned about topical application of agents in conjunction with LED, 9 of the 11 physicians were not aware of any topical agents appropriate to use with LED therapy. The two remaining physicians suggested topical clindamycin or oral doxycycline as their agent of choice to be used with LED treatment. Between doxycycline and clindamycin, the preferred topical agent was clindamycin. Other opinions or closing comments provided by the participating physicians and their frequency are shown in Table 1.

Opinions expressed	No. of physicians expressed
Specialist (dermatology) usually make the call for using such a treatment modality.	1
Light therapy is probably more likely to be effective in conditions like severe psoriasis and eczema.	1
May be useful for milder cases of acne.	2
LED is unlikely to be effective as monotherapy for severe or cystic acne.	1
Patients treated with LED for acne should avoid sunlight.	1
Placebo effect likely.	2
Therapeutic benefit may be possible, but true effect is currently unknown.	2
Would consider if better research evidence existed.	1
Light from LED is unlikely to be powerful enough to produce any significant therapeutic effect.	1

Table 1. Other comments expressed by general practitioners regarding LED in the treatment of facial acne.

Retrospective Chart Reviews:

Data from forty-six patients was reviewed retrospectively with clarification from the treating physician in situations where details regarding assessment of the severity or treatment modalities were unclear. The patient demographics obtained from chart review are shown in Table 2 and the collective frequency of treatment options involved in their management are shown in Table 3. None of the 46 patients had received LED therapy as part of their management, from the physician, from a shared health care practitioner, as a previous treatment modality, or as part of current therapy.

Gender of sample	n = 46	
Male	21	(45.65%)
Female	25	(54.35%)

Age of Sample		
	n = 46	
15 -19 years	17	(36.96%)
20 - 24 years	23	(50.00%)
25 - 29 years	5	(10.87%)
30 - 34 years	1	(2.17%)
>35 years	0	(0.00%)
Severity of disease		
	n = 46	
Mild	9	(19.57%)
Moderate	22	(47.83%)
Moderate-severe	15	(32.61%)
Severe	0	(0.00%)
Other/not recorded	0	(0.00%)
Duration of condition		
	n = 46	
Less than 1 year	13	(28.26%)
1 to 3 years	19	(41.30%)
3 to 6 years	9	(19.57%)
6 years or more	1	(2.17%)
Unknown or not recorded	4	(8.70%)

Table 2. Demographics of patients and the nature of their disease state.

Management option	Frequency	
Referred as part of management	16	(34.78%)
No active treatment	0	(0.00%)
Reassurance and health advice	31	(67.39%)
Topical agent	20	(43.48%)
Oral antibiotics	26	(56.52%)
Benzoyl peroxide	32	(69.57%)
Hormonal therapy (including COCP)	10	(21.74%)
Isotretinoin	6	(13.04%)
Salicylic acid	10	(21.74%)
Topical retinoid	4	(8.70%)
LED therapy	0	(0.00%)
Other (not listed above)	0	(0.00%)

Table 3. Treatment options and the frequency with which they were included as part of management. Some patients may have received more than one option as part of their management.

In 22 of 46 patient cases (47.83%), the treating physician was confident that treatment failure did not occur. For the remaining 24 patients, the probable reasons for treatment failure or disease state relapse are shown in Table 4. For responses listed under ‘other,’ the physician noted the following responses:

- Poor dietary factors
- Antibacterial resistance or incorrect choice of antibiotic therapy
- Genetics as a predisposing factor
- Pregnancy
- Polycystic ovarian syndrome
- Medications stopped due to side effects (especially isotretinoin)

Possible reason	Frequency	
Incorrect/ineffective treatment regimen	16	(34.78%)
Patient ran out of medications	6	(13.04%)
Non-compliance of patient's part	17	(36.96%)
Therapy was discontinued by patient	2	(4.35%)
Natural history	30	(65.22%)
Other	8	(17.39%)

Table 4. Possible reasons attributed by the treating physician for patients with perceived treatment failure. Some patients may have been assigned more than one reason for unsuccessful therapy.

Discussion

The purpose of this research was to evaluate the attitudes of physicians to the use of LED therapy as an adjunct to standard therapy in the management of facial acne in primary care practice. The results clearly show that LED therapy was seldom employed in the GP clinical setting. General practitioners have a role in maintaining a very high standard of care in primary health care and thus it is not surprising that therapeutic decisions must be based on evidence demonstrating a clear benefit over their risks. The RACGP frequently provides updated articles for general practitioners through the AJGP/AFP which are based on the findings of peer-reviewed research. As there are few high-quality studies published showing a clear advantage of LED therapy over existing conventional treatments, it is not surprising that utilization rates of LED therapy for facial acne would be less optimistic. This would support our hypothesis that LED therapy is not a commonly utilized form of therapy for facial acne in the GP setting.

The patient cases reviewed showed a good distribution between males and females, with the majority of patients between 15 and 25 years of age. Interestingly, there were more patients presenting with moderate or moderate-severe disease in comparison to milder presentation. This disproportionate representation may be explained if one assumes that persons with moderate to severe cases may find their condition less tolerable than those with milder disease.

When the data for the treatment modalities was studied, it is interesting to note that almost one-third of the sample population was referred for shared care with another health professional, our study did not specify the proportion of referrals made to dermatologists. It is also interesting to note that the outcome of referrals did not always result in the prescription of isotretinoin which was prescribed only in 13.4% of our studied population. Isotretinoin can currently only be prescribed under the supervision of a dermatological specialist or an experienced general practitioner^[44].

Our findings showed that the four most common therapeutic decisions advised involved reassurance and health advice regarding facial hygiene, diet and exercise (67.39%), benzoyl peroxide facial wash (69.57%), oral antibiotics (56.52%), and other topical agents (43.48%). This is consistent with the recommendations from AFP/AJGP and RACGP. It is interesting to note that though clindamycin was the preferred topical antibiotic agent of choice, a multicenter non-blinded clinical study conducted by Gold and colleagues (2005) demonstrated that LED therapy would have been superior to 1% clindamycin topical therapy.^[4,45]

One of the major drawbacks in our study is the small population size of patients and the small sample size of participating general practitioners. There also exists a potential selection bias as the physicians who participated in the study were not chosen at random but were themselves volunteers. In our study, the assessment of acne severity and the presence of treatment failure was subjective on the physician's part. In

hindsight, the employment of the Burton's scale to assess acne severity or the inclusion of patient satisfaction with their treatment regimen might have improved the quality of data collected. Our study did not collect data on the skin type of the patient case such as skin tones or oiliness, factors which could potentially have played a role in influencing clinical decisions.

Though acne of the face is clearly a distressing dermatological condition, acne may also affect other parts of the body. Our study did not examine the frequency of LED light therapy utilization in the management of acne affecting other parts of the body, nor did it study the effect of light therapy for the treatment of acne scars. Scarring is an undesirable complication resulting from increasing severity of disease and is the source of much anxiety in persons with moderate to severe acne.^[7]

Since LED therapy was not included in the management of any of the patients in our sample, we were not able to identify the clinical efficacy nor the issues with its utilization as per reported by the treating physicians. All the physicians in our sample had declined to comment on the effectiveness of the therapy of interest. Further research is warranted and it may have been useful to extend the target population to gather the opinions of LED light therapy from specialists, such as dermatologists, who may have had more experience with and exposure to the intervention of choice.

Our study was unique in that there are very few studies which have examined LED therapy and its use in the primary care setting. We hope that the findings of our pilot study will inspire interest in future investigators to engage in higher quality research to elicit the true role of LED therapy as a treatment for facial acne in primary care.

Conclusion

The findings of this pilot study suggest that general practitioners were not familiar with LED light therapy as a treatment modality for acne, and that LED light therapy was not a frequently encountered treatment modality in the management of facial acne in the general practice setting.

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