

The Dermlep Study Part 2: Results of a Nation-Wide Survey of Dermatologists' Access to Quality Leprosy Services at their Clinics and Hospitals in India

Abstract

Introduction: Dermatologists in India are trained and qualified to treat leprosy and there is evidence to suggest that they are involved in the diagnosis and management of a significant number of leprosy patients in the country. The present study evaluated the access to quality leprosy services at their clinics and hospitals to understand the extent of their role in providing comprehensive care to people affected by leprosy and how it can be organized further. **Methods:** The DermLep Study was a pan-India questionnaire-based survey carried out to evaluate the role that dermatologists play in leprosy management in the country. It included as part-2 of the survey, 11 questions on the access of the dermatologist to various quality leprosy services available at the clinic or institution including skin smears, skin biopsy, multidrug therapy (MDT) blister packs, basic physiotherapy services, and reporting to the national program (NLEP). **Results:** The dermatologists who participated in the survey included 101 private practitioners and 100 working in Government or private medical institutions. The key findings of the survey were that 78% of the participating dermatologists still encounter leprosy patients frequently in their clinics; 81.0% of them had access to skin smears; and 93.4% to skin biopsy. The World Health Organization (WHO) MDT regimen was followed by 79.0% of the dermatologists in the study, majority of whom were those working in medical colleges (88%); however overall, 87.4% extended the regimen beyond the fixed duration, mostly on a case to case basis. Thalidomide was available for 61.1% of them to treat type 2 reactions. Basic physiotherapy services were available with 70.2% of dermatologists surveyed; 58.9% dermatologists had access to MCR footwear; and RCS facility access known to 45.5% of them. About 83.5% of the dermatologists working in institutions were reporting their leprosy cases to the NLEP, whereas from a high percentage (71.4%) of dermatologists in private practice, cases were not captured in routine under NLEP. **Conclusion:** Dermatologists in India have the clinical skill, expertise, and access to most of the basic services, including skin smear and skin biopsy facilities needed to provide comprehensive care to leprosy patients in post-elimination era of integration of leprosy services. While dermatologists are already managing leprosy patients both at medical institutes and private clinics across India, their “structured” involvement at all levels in the national program will facilitate improved reporting and cataloging of cases seen by them. It will also elevate standards of leprosy care; create an effective public-private partnership and disease expertise; and assist develop a comprehensive, patient-tailored approach in the leprosy program in India.

Keywords: Dermatologists, DermLep study, public-private partnership, quality leprosy services

Introduction

The World Health Organization (WHO) in its global leprosy strategy document for 2016–2020 recommends harmonized drug regulatory policies and standards of care for leprosy patients through public–private approaches.^[1] It also notes the lack of structured involvement of the private sector, including private for-profit and informal private sectors that are very important in Asia and Africa. It mentions

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the need for increased involvement of “allopathic private providers”^[2] to manage leprosy and comments that networking with referral centers, medical colleges, and dermatologists is key to ensure a comprehensive, patient-tailored care.

Departments of dermatology in government and privately run medical colleges are considered as referral centers (tertiary health care centers)

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for leprosy care for primary health centers (PHCs) and urban health centers (UHCs) in most states of India. Qualified dermatologists are faculty and manage these departments.^[3] In addition, a large number of dermatologists (about 5 thousand) run private dermatology clinics across the country. New leprosy patients and good number of released from treatment (RFT) patients are examined, diagnosed, and managed by dermatologists in the institutions and private practice since the dermatology specialty has been established. Nonetheless, as mentioned in the WHO document,^[1] there is no structured involvement of dermatologists in the national leprosy program. In addition, there is no reliable data available on the types of services provided by them or the number and profile of leprosy patients managed by this large qualified group at their clinics. To bridge this information gap, a nationwide ‘DermLep study’ was carried out by the Special Interest Group (SIG) - Leprosy of the Indian Association of Dermatologists, Venereologists, and Leprologists (IADVL) in the year 2017–18 with two objectives; (1) To estimate the number and profile of leprosy patients seen by dermatologists in the country over a 3-month period, the results of which have been communicated as part 1 of this survey.^[4] (2) To get information on the key leprosy services available at the dermatology clinics/hospitals/institutions to manage leprosy patients. In this paper we present and discuss the results of the second part of the survey detailed in the methods section below.

Methods

The DermLep survey was a national study carried out by SIG leprosy of IADVL. Member dermatologists from the entire country were informed and approached to participate in the “Dermlep study” and participation was voluntary and confidential. The participating dermatologists, to meet the second objective of the study, were asked to provide information about the key facilities available to manage leprosy patient at their clinic/hospital/institution in a fixed questionnaire based format of eleven questions, at the time of enrolment in the study [Appendix 1]. This survey format was available both in printed booklet and as a web-form. It was designed to provide brief details of the dermatologists; how often they saw leprosy patients; access to skin smear and biopsy; their choice and duration of multidrug therapy; availability of thalidomide; access to leprosy care services like physiotherapy, simple splints, specialized microcellular rubber (MCR) footwear, reconstructive surgery (RCS); and referral services at their center. The form once filled was passed on to the principal investigators of the study for compilation and analysis. All the data obtained was used only for the purpose of the survey and confidentiality of both the patient and the participating dermatologist was maintained. This national study was carried out as per the protocols of IADVL academy after ethical clearance.

Results

A total of 201 dermatologists from 20 states of India took part in the ‘DermLep study’. All the participating dermatologists provided information on the key leprosy facilities available at their institutions and private clinics. While 188 of them sent back the filled in survey booklets, the rest of the 13 members completed it through the web-based survey.

Of the 201 dermatologists, 100 were working in medical institutions (medical college hospitals or other institutions), and 101 were private practitioners. Of the 100 dermatologists from medical institutions, 48 were working in Government medical college hospitals, 45 in private medical college hospitals, and 7 in other corporate medical institutions.

Out of the total 201 participating dermatologists, 197 of them recorded a response to the question on how often they saw leprosy patients in their clinic [Table 1]. Among them, 78.2% ($n = 154$) responded that they frequently encountered leprosy patients in their clinic, while 16.2% ($n = 32$) mentioned that they encountered leprosy patients occasionally in their practice. Rest of the dermatologists (5.5%, $n = 11$) stated that they do not see leprosy patients at all in their dermatology practice.

Most importantly, the leprosy care parameter with regard to leprosy diagnosis in form of “access to slit skin smear and access to skin biopsy” were evaluated in the survey. Two hundred dermatologists registered a response to this question. Overall, 81% ($n = 168$) of the dermatologists had access to skin smear services of which 95% (95 out of 100) were in institutions and 73% (73 out of 100) were in private practice. Similarly, 98% dermatologists in institutions had access to skin biopsy, while 88.7% dermatologists in private practice had access to skin biopsy services [Table 2].

Adherence of dermatologist to WHO recommended fixed duration multi drug therapy (MDT) was assessed in the DermLep survey. Most dermatologists 79%, (158/200) followed WHO recommended MDT in their practice, while 17.5% (35/200) stated that they follow the WHO- fixed duration MDT regimen depending on the case [Table 3]. Only 3.5% (7/200) of dermatologists stated that they do not follow the WHO-MDT in their practice. Among

Table 1: On whether leprosy patients are seen in their dermatology practice

Response	Dermatologist in Private Practice	Dermatologists in Institutions	Total
Yes	69	85	154
No	09	02	11
Rarely	20	12	32
Total	98	99	197*

*Non-response by 4 dermatologists

Table 2: Access to Skin Smear and Skin Biopsy services

Access to Skin Smear services				Access to Skin Biopsy services			
Response	Dermatologists in Private Practice	Dermatologist in Institutions	Total	Response	Dermatologists in Private Practice	Dermatologists in Institutions	Total
Yes	73	95	168	Yes	87	98	185
No	27	05	32	No	11	2	13
Total	100	100	200*	Total	98	100	198 [#]

*Non-response by 1 dermatologist. [#]Non-response by 3 dermatologists

Table 3: Choice of dermatologists regarding WHO MDT and on Fixed Duration of MDT (FDT)

Whether follow WHO prescribed fixed duration MDT in practice				Extension of duration beyond WHO fixed duration MDT			
Response	Dermatologists in Private Practice	Dermatologists in Institutions	Total	Response	Dermatologists in Private Practice	Dermatologists in Institutions	Total
Yes	76	82	158	Never	15	10	25
No	03	04	07	On a case to case basis	70	80	150
Depends on case to case	21	14	35	Usually	14	10	24
Total	100	100	200*	Total	99	100	199 [#]

*Non-response by 1 dermatologist. [#]Non-response by 2 dermatologists

dermatologists in institutions, 82% dermatologists practiced WHO MDT, while among private dermatologists the frequency of its use was 76%. On further analysis, 87.5% (42 out of 48) dermatologists from Govt medical colleges and 88.8% (40 out of 45) from private medical colleges stated that they always follow WHO recommended MDT schedules for leprosy patients.

To the question whether dermatologists extend the duration of MDT beyond the fixed duration treatment (FDT) prescribed by WHO, 12.6% said they never extended the duration; 75.4% extended the duration of MDT on a case to case basis; and 12.1% usually extended the duration of MDT in their patients [Table 3]. Extension of MDT on a case to case basis was seen both among dermatologists working in institutions (80%); and in private dermatologists (70.7%).

To the question on whether dermatologists report leprosy patients seen by them to the National Leprosy Eradication Programme (NLEP), overall, 44.1% (86 out of 195) of dermatologists did not report in routine their cases to NLEP [Table 4]. There was a marked difference between private practitioners and dermatologists in institutions in reporting of cases. In institutions, 81 of the 97 dermatologists (83.5%) reported their cases, and in private practice only 28 of the 98 dermatologists (28.6%) reported their cases to the NLEP. When further analyzed for institutions, it was noted that out of dermatologists working in Govt medical colleges, 43 out of 48 (89.6%) reported all cases, while only 34 out of 45 (75%) dermatologists in private medical college report cases to NLEP for registration.

The dermatologists were asked regarding the access to thalidomide to treat type 2 ENL reactions [Table 5]. Seventy-five dermatologists (38.9%) had no access to thalidomide. The availability of thalidomide was very

similar in both groups of participants, 63.2% (60 out of 95) for institutions and 59.2% (58 out of 98) for those in private practice.

Access to simple splints to prevent disability was available in 61 out of the 191 (31.9%) of the dermatologists [Table 6]. The access was 50% in institutions (47 out of 94) and only 14.4% in private dermatology clinics (14 out of 97). Out of the 195 dermatologists who recorded a response on access to microcellular rubber (MCR) footwear for their patients, 115 (59%) had access, while 80 (41%) responded that they had no access [Table 6]. Dermatologists in institutions had higher (66%, 64 out of 97) access to MCR footwear for their leprosy patients than those in private clinics (52%, 51 out of 98).

Regarding access to leprosy physiotherapy services, 137 of the 195 (70.3%) who provided responses said that they had access to physiotherapy services [Table 7]. The access was higher for dermatologists (84.7%) in the institutions compared to dermatologists in private practice (54 out of 97; 55.7%). On the access to reconstructive surgery (RCS) for their patients, 45.6% (88 out of 193) of the dermatologists said that they had access to RCS and 54.4% (105 out of 193) had no easy access to RCS facility [Table 7].

Discussion

The DermLep survey as a whole was designed to provide objective, quantitative, and qualitative information on the role played by dermatologists in managing leprosy patients in India and help define their future role in addressing the remaining challenges in leprosy. With the integration of leprosy services into the general medical health services in India there is an increased awareness in the community that individuals with skin lesions suspicious of leprosy can approach dermatologists for diagnosis and management. However, the actual number of leprosy patients treated

by dermatologists has not been accurately assessed. The first objective of the 'DermLep study' therefore was to estimate the number and profile of leprosy patients seen by dermatologists in India (part-one of the survey), which revealed that a significant number of leprosy patients are seen and managed by dermatologists in India and a considerable proportion of whom are missing from government statistics.^[4] The present paper evaluates the second objective and part two of the survey, which reports on the quality of leprosy care services available with dermatologists to manage this significant load of leprosy patients including diagnostics (skin smear and skin biopsy); management (MDT and thalidomide); and other supportive services (access to physiotherapy, simple splints, MCR footwear and RCS) and reporting of cases to NLEP, thus giving a holistic appraisal of the quality of care provided by dermatologists to a leprosy patient. These core areas are emphasized by the Global Leprosy Strategy 2016–2020 operational manual^[1] as an essential and integral component of an effective leprosy program.

Table 4: Reporting of leprosy patients to NLEP by dermatologists

Response	Dermatologists in Private Practice	Dermatologists in Institutions	Total
Yes	28	81	109
No	70	16	86
Total	98	97	195*

*Non-response by 6 dermatologists

Table 5: Dermatologists access to Thalidomide

Response	Dermatologists in Private Practice	Dermatologists in Institutions	Total
Yes	58	60	118
No	40	35	75
Total	98	95	193

*Non-response by 8 dermatologists

Table 6: Access to simple splints and MCR footwear

Access to simple splints				Access to MCR footwear			
Response	Dermatologists in Private Practice	Dermatologists in Institutions	Total	Response	Dermatologists in Private Practice	Dermatologists in Institutions	Total
Yes	14	47	61	yes	51	64	115
No	83	47	130	No	47	33	80
Total	97	94	191*	Total	98	97	195 [#]

*Non-response by 10 dermatologists. [#]Non response by 6 dermatologists. (MCR: micro cellular rubber)

Table 7: Access to Leprosy physiotherapy and to reconstructive surgery (RCS)

Access to leprosy Physiotherapy				Access to Reconstructive surgery			
Response	Dermatologists in Private Practice	Dermatologists in Institutions	Total	Response	Dermatologists in Private Practice	Dermatologists in Institutions	Total
Yes	54	83	137	Yes	41	47	88
No	43	15	58	No	47	58	105
Total	97	98	195*	Total	88	105	193 [#]

*Non-response by 6 dermatologists. [#]Non-response by 8 dermatologists

In this study, out of 201 dermatologists who took part, 46% ($n = 93$) were working in various medical college hospitals of India and manage leprosy patients. As of year 2020, there are 542 medical colleges in India.^[3] Of these >51% (about 279) are government run medical colleges, while the rest are under private management. All medical colleges have dermatology departments, where leprosy patients can access treatment. More than half (about 275) of these colleges have facilities and faculty to train post graduate students^[3] in the combined specialty of dermatology, venereology, and leprosy (DVL). In addition, there are more than 5000 qualified dermatologists in private practice, all over India.

Nonetheless, at present there is no systematic and organized way of involvement of medical college hospitals or of the private sector (both individual practitioners as well as private hospitals) in NLEP directed leprosy control activities.^[5] The findings of the present study show that both public and private sectors contribute significantly to the care and management of leprosy and the role of the private sector should be recognized and mainstreamed into the national program. It is heartening to note that a recent independent evaluation of the NLEP has recognized the value of this partnership and advocates measures to foster this strategic participation of dermatologists in the national leprosy program.^[5]

Concerns have been raised regarding the program doing away with slit skin smears and the declining interest and ability to perform skin smears correctly among all the persons involved in leprosy work, even in the teaching/training institutions.^[6] The present survey has revealed that a significant proportion of dermatologists (81%) continue to have access to skin smear services although the national program has discontinued its routine use. Skin smear is an important diagnostic test in leprosy to demonstrate M leprae; during follow-up of patients under

treatment; and in diagnosing bacteriological relapse.^[6,7] The national leprosy statistics of India have shown an increase in multibacillary (MB) leprosy in recent years^[8] and skin smears can be a valuable tool to diagnose MB forms with greater ease. Early diagnosis and treatment of MB leprosy will also help interrupt transmission of the disease. Dermatologists recognize this and use skin smears as a key tool while managing leprosy patients. Those in institutions have greater access (95%) than in private practice (73%) and dermatologists use it as valued tool in leprosy-case management. There are many leprosy workers who feel that skin smears need to be urgently brought back into the leprosy program^[9,10] and there is a need to re-evaluate its relevance and importance in the present context.

Besides skin smear, a skin biopsy is often considered a gold standard for diagnosis and classification of leprosy, especially in most research studies.^[11-13] The importance of accurate histological assessment is augmented by the widespread poor performance of slit-skin smear bacteriology and also its declining expertise.^[14] It is observed that histopathological type of leprosy detected from biopsies of skin lesions differs from that diagnosed by clinical examination or based on skin smears and often the histology reveals more advanced forms of disease.^[15-18] The present study observed that a high proportion of dermatologists (93.4%) have access to skin biopsy facility to manage their leprosy patients, which was 98% and 88.8% for those in institutes and for those in private practice, respectively. This is heartening as low densities of acid-fast bacilli in skin smears are underestimated or undetected entirely, so that cases may be missed as well as being misclassified^[19] which can be overcome by the help of skin histopathology. The WHO has grouped leprosy for therapeutic purposes for field workers into paucibacillary (PB) and MB leprosy based on count of skin and nerve lesions with no reference to skin smears or biopsy.^[13,20] It is time to assign skin biopsy a role as an additional guide in leprosy classification and treatment wherever possible and more certainly when there are fewer than five skin lesions.^[12]

Lepra reactions are a common accompaniment of leprosy and can occur before, during, and even after completion of MDT. Type 2 reactions (ENL) are more troublesome and can continue to occur for many months and years after RFT in a proportion of patients and are more difficult to handle. Corticosteroids are the drug of choice but not without side effects of steroid toxicity, dependence, or unresponsiveness. Thalidomide is a highly effective drug to manage ENL and is being widely used.^[21] The survey revealed that 61% of the dermatologists had access to this important drug, which is useful in the prompt management of ENL and can be a part of providing quality leprosy service to patients. There is a need to include thalidomide along with MDT as part of the essential drugs in the program while ensuring that there are clear guidelines on its use and adequate counseling is

in place. Availability of thalidomide is also an important concern in private practice and steps should be taken to ensure its equitable availability and distribution.

Part one of the DermLep survey revealed that a significant proportion of patients seen by dermatologists had lepra reactions, neuritis/nerve damage, and grade-2 disability (G2D). Lepra reactions were noted in 30.9% of patients and G2D in 23.58% of patients. Even in new patients, 17.79% had G2D at the time of examination.⁴ All these patients needed supportive care and physiotherapy. It is good to note that overall, 70.3% of the dermatologists had access to basic physiotherapy services for their patients; with a higher percentage in institutions (84.7%) and lower (55.7%) among private dermatologists. Physiotherapy is an important component of leprosy management and an essential part of prevention of disability (POD) care and support. Simple active and passive physiotherapy exercises given to patients with early nerve function impairment (NFI) helps the nerve and muscle function to recover quicker and produce long lasting benefit.^[1] The use of specific physiotherapy measures such as simple gutter splints and adductor bands to prevent/treat leprosy disabilities were however low (31.9%); both in institutions (50%); as well as among private dermatologists (14.4%). Reconstructive surgery (RCS) is also an essential aspect of the long-term care in leprosy and an important aspect of rehabilitation. In the present study, 45.6% of the dermatologists had information or access to RCS facility. RCS helps in making the limb functional and enables the patient to return to his work, apart from reducing stigma. Access to MCR footwear for use in leprosy patients in our study was 59% and 66% among private practitioners and institutions respectively. However, there is a paucity of data on utilization of MCR footwear by people affected by leprosy and insight into it would be important to bring about positive changes for its improved usage and promote disability prevention.^[22]

The survey observed that about 88% of dermatologists from institutions follow WHO recommended MDT for patients, and only 76% of dermatologists in private practice follow it. While ideally this figure should be 100% for medical colleges, it should be noted that not all medical colleges are linked to NLEP services.^[4] The reasons for lower adherence to WHO-MDT by private dermatologists could be due to the lack of access to MDT blister packs and periodic non-availability of clofazimine in the private pharmacies, among others. There is a scope for private for-profit health sector to play an increasing role in the provision of leprosy services in India. However, national strategies should clearly define the private sector's role, including training and quality control.^[23]

To the question whether dermatologists extend the duration of MDT beyond the fixed duration therapy (FDT) prescribed by WHO, 75.4% who took part in the survey stated that they extended the duration of MDT on a case

to case basis. The reasons could be many and needs to be elaborated. This issue of extending MDT comes up more commonly for cases of MB leprosy, especially of borderline lepromatous-lepromatous spectrum where the BI continues to remain high and there is a concern regarding relapse with use of shorter regimens.^[24] In this context it should be noted that the current recommended length of treatment for MB patients, which originally was until smear negativity was reduced to 24 months, and further has been shortened to 12 months.^[25] No controlled clinical data was generated to support for reducing the duration of MDT from 24 months to 12 months. The classification of MB patients had been widened based on counting of number of skin lesions, so some patients who would previously have received PB treatment for six months now receive MB treatment for 12 months.^[26] For these reasons the fixed-duration (FD) therapy for leprosy patients is not popular among academicians and private practitioners who prefer precise diagnosis and treatment.^[27] Studies from Institute Marchoux and from Central JALMA institute for Leprosy and other mycobacterial diseases clearly point to a subgroup of high bacteriological index (BI) MB patients who show a higher risk of relapse after MDT.^[28,29] However, the general health services often lack the manpower and resources required to follow up the high BI patients who have completed their MDT, as they are no longer considered as active cases.^[25] Moreover, there is also a difference observed in the rates of relapse based on whether they are field studies or institutional studies. This could be attributed to more regular as well as long-duration follow-up with periodic clinical and skin smear examination in institutional studies which may be lacking in the field.^[26] In addition, the WHO action program for elimination of leprosy states that MB patients with an initial high BI may have a higher risk of developing reactions and nerve damage during the second year and for those who may not show any improvement or show evidence of deterioration, an additional 12 months of MDT may be required.^[30] Hence it would not be inappropriate for dermatologists, who are qualified leprosy specialists, to extend the MDT in individual cases beyond the fixed duration, based on clinical, and laboratory assessment.

To the question on whether dermatologists report leprosy patients seen by them to the NLEP, 83.5% of dermatologists from institutions stated that they report their cases, while only 28.6% of dermatologists in private practice report their cases. This discrepancy is due to the fact that while most medical college hospitals work in tandem with the state and regional NLEP, private practitioners do not have such access. This was also corroborated in the results of the first part of the DermLep survey, wherein about 40% of all patients seen by dermatologist were not reported to NLEP.^[4]

India continues to have the highest caseload of leprosy in the world with over 125,000 new patients added each

year^[8] and it is right time that dermatologists are made a part of the national strategy to address leprosy. The WHO has recognized this and has included the partnership with the private sector and allopathic private providers as a program performance indicator.^[2] Some of the other key indicators like G2D rates and child rates both of which have remained relatively stagnant suggest that there is a delay in the diagnosis and that there are hidden cases in the community.^[31] Considering the epidemiological situation and prevailing operational factors, the past approach and strategies of NLEP may not be effective in attaining the aspired zero leprosy goal.^[5] A broader integrated approach with involvement of dermatologists at all levels in the leprosy programme can help flush out undiagnosed cases; ensure that they are adequately treated with MDT and successfully interrupt further transmission of the disease. The WHO independent evaluation of NLEP 2019 recommended, as a part of engaging the private sector, that IADVL should be involved in NLEP review meetings at central, state and district level at least once a year. It has also recommended that NLEP should develop a web-based reporting system where the dermatologists can access and update the number of new leprosy cases detected by them.

A few lessons can be drawn from the program in Somalia and Afghanistan. In Somalia, community awareness activities and free dermatological screening and counseling was initiated in year 2014. This led to a spurt in new case detection with almost 5000 new cases of leprosy detected within four years; the number of patients increasing from 107 in the year 2015 to 2610 in the year 2018.^[32] In Afghanistan, leprosy capacity-building activities were held regularly from 2009 for dermatologists and other program staff and it led to a consistent reduction of pediatric cases and a decrease in the proportion of new cases with G2D in the last 6 years.^[1] These examples illustrate that continued community awareness campaigns and involvement of specialist groups such as dermatologists may lead to an initial spurt in new cases due to better detection; however, over the years it will eventually reduce the disease burden as well as key disease indicators like child cases and G2D rates of the population under care. In India when the leprosy patients seen by dermatologists begin to be reflected accurately in NLEP registers, the annual new case detection numbers may go up, however, this should not be a cause for concern as this patient group is receiving treatment under the competent care of a dermatologist, who is also a qualified leprologist. It is time that the role and contribution made by dermatologists to leprosy in India is recognized and fostered. Strengthening the involvement of dermatologists could be the key to develop a comprehensive, yet patient-tailored care in the leprosy program in India.

Conclusion

The findings of the present study show that dermatologists are able to provide comprehensive care and support services

to leprosy patients in the post elimination era. Besides the clinical skill and expertise to diagnose and treat leprosy, dermatologists have access to most of the basic services needed to diagnose and treat leprosy both in institutions as well as in private clinics. They are already playing a significant role in the management leprosy patients in India over decades, while continuing to make use of assessments based on bacteriological and histological parameters. In addition, majority of dermatologists (>55% as observed in this study) are also reporting leprosy patients to NLEP when there is access. There is a need to nurture this relationship further. For this, involvement of dermatologists at all levels of NLEP should be welcome to improve standards of care; ensure an effective “public-private” and a “public-for-profit” partnership in a structured manner, all of which falls within the vision of the NLEP and the WHO. The way forward is to strengthen the partnership of the NLEP with dermatologists and other partners to re-define the leprosy control strategy in order to achieve the long-term goal of a leprosy-free India.

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Conflicts of interest

There are no conflicts of interest.

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Appendix 1

Information to be furnished by the Dermatologist at the time of enrolling for study:		
(Note: All the data obtained will be used only for the purpose of the survey and confidentiality of both the patient and the participating dermatologist would be maintained.)		
Name of Dermatologist: Age: LM No:.....		
Mobile No : Address of Clinic:		
..... District: State:		
Specify the 3-month period of survey: month to month		
1. Do you often see leprosy patients in your practice?		
Yes	NO	Rarely
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Do your patients have access to Skin smear services?		
Yes	NO	
<input type="checkbox"/>	<input type="checkbox"/>	
3. Do you usually follow WHO recommended MDT in your practice?		
Yes	NO	Depends on case to case
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Do you have access to thalidomide?		
Yes	NO	
<input type="checkbox"/>	<input type="checkbox"/>	
5. Would you go beyond WHO recommended duration of MDT therapy for leprosy?		
Never	on case to case basis	usually
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Do your patients have access to leprosy physiotherapy?		
Yes	NO	
<input type="checkbox"/>	<input type="checkbox"/>	
7. Do your clinic provide simple splints (Gutter/dynamic splint/adductor band)?		
Yes	NO	
<input type="checkbox"/>	<input type="checkbox"/>	
8. Do your patient have access to MCR foot wear?		
Yes	NO	
<input type="checkbox"/>	<input type="checkbox"/>	
9. Do your patients have access to deformity corrective surgery?		
Yes	NO	
<input type="checkbox"/>	<input type="checkbox"/>	
10. Do you report all leprosy cases seen by you routinely to NLEP /Govt leprosy worker?		
Yes	NO	
<input type="checkbox"/>	<input type="checkbox"/>	
11. Do you have facility to skin biopsy services?		
Yes	NO	
<input type="checkbox"/>	<input type="checkbox"/>	
Any comment/ info you like to share:		
Mode of preference for participating in survey:		
By Web based Survey forms	By Manual entry on a Hard copy	Both
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>