SHORT REPORT

A study to assess the usage of MCR footwear in West Bengal, India

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Summary  The routine use of appropriate footwear is an important intervention to prevent disability in leprosy. We conducted a study to assess utilisation of MCR footwear and observe the condition of footwear. Fifty-six persons affected by leprosy who had been provided MCR footwear in the preceding 3 years were paid home visit and administered a semi-structured interview schedule. Although a total of 30 participants reported using special footwear currently, only 10 reported usage during participation in social events. On observation, 16 pairs were found to be in an unusable condition owing to foot deformity and another 14 pairs in poor condition. In order to ensure greater utilisation of special footwear, the National Programme may seek local solutions through engagement of cobblers and shoemakers with appropriate training in customisation. Persons affected by leprosy should be empowered to appreciate the benefits of special footwear and to take care of themselves, including taking responsibility for using their footwear.

Introduction

Plantar anaesthesia and ensuing plantar ulcer is a common disability among persons affected by leprosy. These comprise a vulnerable group as the morbidity imposes restrictions on mobility and often livelihood leading to poverty and further vulnerability.

The routine use of appropriate footwear is one of the most important interventions to prevent disability in leprosy. Appropriate footwear is an integral part of self-care and rehabilitation programmes. Microcellular rubber footwear (MCR) has been found to be helpful in healing plantar ulcers as well as in the prevention of recurrences. MCR provides for a soft insole; the cushioning reduces force which in turn reduces pressure over the plantar surface.
The National Leprosy Eradication Programme in India has laid great emphasis on provision of MCR footwear, thereby increasing the coverage of protective footwear. There is evidence that the footwear usage may be affected by perception of footwear usability, involving aspects of appearance, comfort and benefit.\(^5,6\) A majority of this research has been conducted on patients suffering from diabetic neuropathy. There is a paucity of data on utilisation of MCR footwear by people affected by leprosy. Such insights would be important to bring about positive changes in their attitude and behaviour and promote disability prevention.

**Material and Methods**

The aims of the present study were to assess the utilisation of MCR footwear by people affected by leprosy and to observe the condition of the footwear that was provided. The study was conducted in three Blocks of Malda district of West Bengal State in India during January 2014. Those who had been provided MCR footwear in the preceding 3 years were considered eligible for the study. The MCR footwear had been provided free of charge by the District Leprosy Office. Provision was made according to the requirements of the peripheral health units. Standard shoe sizes and models of footwear were provided (Figure 1).

People affected by leprosy who were eligible for provision were paid home visits and were asked to agree to contribute to a semi-structured interview. The interview schedule comprised questions related to socio-demographic details, use of footwear, preference for footwear, usage of MCR footwear and periodicity, benefits and problems in usage thereof. Informed consent was obtained prior to all interviews.

Figure 1. MCR Footwear.
Results

A total of 70 people affected by leprosy had been provided with MCR footwear in the preceding 3 years of the study. Of these, 56 could be interviewed; the remainder were not available at the time of the home visits. 41 study participants were male, 15 were female. The age of the participants ranged from 21 to 70 years. A majority of them (32) were manual labourers/agricultural workers. Only eight participants were taking MDT at the time of interview; the remainder had been released from treatment. We found that 31 participants presented with WHO Grade 2 disability of the foot; among them 21 participants had plantar ulcers.

All (56) the participants reported the routine use of footwear of some kind. A majority of the participants (49) reported having been counselled about the importance of footwear. However most of them (41) claimed to be using footwear only when outside their houses. A total of 30 participants reported the current use of MCR footwear. The use of special footwear declined during participation in social events or festivals. Only 10 participants reported wearing MCR footwear during such occasions.

A majority of the participants (38 out of 56) reported having received only one pair of MCR footwear in the last 3 years. Twenty-two participants had received the MCR footwear within the last year. On observation, 16 pairs were found to be in an unusable condition and another 14 pairs in poor condition. The footwear that was unusable were those that belonged to people with compromised foot structure. Those people reported problems including fitting and repairs, the lack of solutions to which rendered special footwear unusable.

The most commonly reported benefit reported was the healing of ulcers. This was reported by 19 study participants.

Discussion

We found that the utilisation of MCR footwear was often limited by its durability, as only 26 pairs were found in a satisfactory condition. MCR footwear is subject to wear and tear and so it is our opinion that the provision of two pairs of the special footwear per year to eligible people affected by leprosy is required. However, we found that availability could not always be ensured. We further found that the usage of MCR footwear declined during social occasions. This suggested to us that its usage may be deemed to be stigmatising.

A pragmatic solution for a person affected by leprosy may be to wear locally available and socially acceptable shoes whenever they are on their feet and walking. Most people may not require specially-made footwear; the right shoes found in the local market can be just as effective if they comply with the general principals of having a hard outsole and soft insole; fit comfortably with Velcro straps for fastening. Locally-available wider options in terms of design and colour may add to the demand and ultimately greater utilisation.

With the implementation of the DPMR (disability prevention and medical rehabilitation) programme there should be an accurate completion of nerve function assessment forms. Such information should be sufficient to raise alert for the vulnerability of anaesthetic feet. For reasons of ready availability and socio-cultural acceptability there has been a paradigm shift. Health workers more readily recommend commercially available footwear for normally shaped feet with plantar anaesthesia over custom-made protective footwear. For people
affected by leprosy who present with Grade 2 disability, however, the need for customised protective footwear cannot be over-emphasised.

Custom made footwear have proven to be effective in increasing contact areas and decreasing peak pressures on plantar surfaces, and are important, therefore, as an adjunct to other interventions for the prevention of plantar ulcers. It has been shown that those presenting with plantar ulcers whose MCR footwear had been modified to include appropriate orthotic appliances were benefitted to a greater extent than those who had not been given orthoses.

In a recent study it was found that 83% of diabetic subjects did not wear appropriate footwear. It seems apparent that many patients with diabetes wear shoes that do not fit. A particular problem is shoes that are too narrow for foot widths. Footwear usage has also been reported low to moderate dependent on the perceived benefit of the footwear; comfort being reported as the highest priority by patients.

In its goal to prevent disability, it may be useful for the National Programme to seek local solutions to ensure the utilisation of special footwear, which is often limited by accessibility and need for customisation. In this regard, the operational feasibility of utilising local skills, such as shoemakers/shoe technicians, who have received appropriate training in customisation will need to be explored. In addition, persons affected by leprosy should be made aware of the therapeutic benefits of special footwear and should be encouraged to take control for their own care; this includes taking responsibility for regular usage of footwear in order to minimise disability.

Ethics Approval

All the interviews were carried out as part of routine monitoring and therefore formal ethics approval was not required.

Contributors

All the authors were involved in planning, drafting and finalisation of paper. VL, DS and MM were involved in data collection.

References

1. Consensus Development Conference on the Prevention of Disability (POD), co-sponsored by American Leprosy Missions (ALM), the World Health Organisation (WHO), and the International Federation of Anti Leprosy Associations (ILEP), held at the Waterfront Hotel in Cebu City, Philippines, from 13–16 September 2006. (Accessed from lep-consensus-stmt-pod-En.pdf on 5 May 2015)


