

Prevalence surveys for podoconiosis and other neglected skin diseases: time for an integrated approach



Understanding of the geographical distribution of diseases is needed to inform health service design and delivery. It is also a necessary step in targeting priority areas and serves as a baseline to measure the impact of future interventions. In *The Lancet Global Health*, Kebede Deribe and colleagues¹ present a large-scale nationwide prevalence survey for podoconiosis in all 30 districts across Rwanda. Podoconiosis is a neglected tropical disease and data on its prevalence and geographical distribution worldwide is scarce.² Podoconiosis is a type of elephantiasis (lymphoedema) found in farming communities in the tropics and is triggered by an abnormal reaction to irritant mineral particles in volcanic soils amongst people who cannot afford shoes. The disease can be avoided by appropriate use of footwear and is treated through simple lymphoedema management measures, such as proper foot hygiene, bandaging, and exercises.³ As such, detection of affected and at-risk populations is vital to ensure prevention and treatment measures are available for everyone in need.

The survey by Deribe and colleagues¹ is an impressive and substantial undertaking that has been done at an almost unprecedented scale, reaching more than 1 in 10 Rwandans. Few mapping projects for any disease have been done anywhere in the world at this scale and the authors are to be congratulated for managing the logistics of such a challenge. To achieve this feat, the researchers trained 282 community health workers to do a census and screen for cases of lymphoedema before confirmation of podoconiosis by a team of expert examiners. This operational model has previously been used for other skin diseases such as leprosy and Buruli ulcer.⁴

The study also highlights challenges involved in mapping a relatively rare disease. Around 1.3 million individuals were screened to identify 914 cases of podoconiosis. Although these diagnoses are an impressive achievement, there is also a need to reflect on how to establish effective ongoing case detection for rare conditions, which are often highly focal (geographically), outside of a research agenda. This challenge is not restricted to podoconiosis and is true of various other skin-related neglected tropical

diseases, such as leprosy, yaws, Buruli ulcer, mycetoma, cutaneous leishmaniasis, and scabies.⁵ Integrated case finding through skin examination is one possible approach to identify multiple conditions in a single visit, and WHO has developed a manual to aid training of front-line health workers in recognition of the signs and symptoms of neglected skin diseases.⁶ An integrated approach might target not only neglected tropical diseases, but also common skin conditions and skin health in general. Studies are needed to explore if the model of community health worker screening and expert verification can be extended to multiple diseases and to validate diagnostic algorithms and training packages that can be delivered on a large scale by health systems. Although national programmes will need to be tailored to neglected tropical diseases of the skin that prevail in a given country, there are opportunities to develop common and cross-cutting tools.

Deribe and colleagues report that podoconiosis is widespread across Rwanda, with an overall prevalence of 68.5 per 100 000 people (95% CI 41.0–109.7). These findings add to a growing body of evidence that podoconiosis is a substantial public health problem. Progress with the mapping of this disease has been hampered by a scarcity of interest and investments in epidemiological surveys and by the inconsistent methodologies that have been used to assess its geographical distribution and spatial epidemiology.² In May, 2017, Deribe and colleagues⁷ announced in *The Lancet Global Health* the launch of a programme to develop a global atlas of podoconiosis through funding from the Wellcome Trust. They have mapped the distribution of the disease in Cameroon⁸ and are in the process of mapping podoconiosis in other African countries and India. Notably, the study provides guidance for the standardised design, implementation, analysis, and reporting of podoconiosis surveys. The study describes an accurate and precise methodology that combines several developments, including the use of clear case definitions, a diagnostic algorithm,⁸ the application of a grading system,⁹ and the adoption of validated modelling with environmental data to predict the prevalence of the disease in unsampled locations.¹⁰

Published Online
March 26, 2019
[http://dx.doi.org/10.1016/S2214-109X\(19\)30158-5](http://dx.doi.org/10.1016/S2214-109X(19)30158-5)
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In 2011, podoconiosis was recognised by WHO as a neglected condition, but the disease does not appear on the 2018 list of WHO neglected tropical diseases. Owing to similarities in the clinical presentation and morbidity management strategies between lymphatic filariasis and podoconiosis, podoconiosis was previously grouped alongside the lymphatic filariasis programme. Despite this, podoconiosis is often found in different regions of countries where lymphatic filariasis is endemic and also in countries where lymphatic filariasis is not found at all (as the present study in Rwanda shows). Consequently, inadequate coverage of health interventions for people with podoconiosis is expected from programmes that are based only on the presence of lymphatic filariasis. Podoconiosis affects the poorest individuals, is easily preventable and treatable, and—as this study shows—requires a WHO programme that is separate from the Global programme to Eliminate Lymphatic Filariasis.

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