

From steps to solutions: Advancing podoconiosis prevention and control in Ethiopia

- Podoconiosis is preventable with access to well-fitting footwear. Advocating for the inclusion of shoes in the national water, sanitation and hygiene strategy would improve access to shoes, encourage uptake of shoe wearing and foot hygiene practices, and promote prevention.
- Wearing shoes from an early age prevents podoconiosis and related lymphoedema. Embedding multistakeholder podoconiosis prevention packages in schools will improve access to shoes, early behaviour change and service uptake, and raising awareness.
- Women are disproportionately affected by podoconiosis and require tailored services that respond to their needs. As caregivers in their households, they can help to sustain positive behaviour change among their families.

Background

Globally, an estimated four million people are affected by podoconiosis, a non-infectious neglected tropical disease caused by chronic exposure of bare feet to irritants in volcanic red clay soils.^[1] The disease disproportionately affects farmers, the majority of whom are women, as well as marginalised people and those living in poverty. These groups typically lack access to shoes, which are the first-line preventive measure against podoconiosis.

Ethiopia bears the highest burden of podoconiosis. With more than 1.5 million cases, the country accounts for approximately 38 percent of cases globally.^[2] Almost 35 million people are at risk of developing the disease,^[2] the likelihood of which increases with age.^[3] Limited awareness around the fact that podoconiosis exists, what causes the condition, how to prevent and manage cases,

and when to seek treatment remains a challenge in the country. As a result, infection occurs where it could easily be prevented and existing cases go unmanaged, often developing in severity.

Over time, exposure to podoconiosis results in debilitating swelling of the lower leg, a condition known as lymphoedema. Alongside the physical impact on quality of life, the economic burden of podoconiosis is high. In Ethiopia, lost productivity from podoconiosis costs an estimated US\$213.2 million annually, with the average economic burden per case amounting to US\$137.^[2] Those affected by podoconiosis also experience social stigma, which can lead to isolation within the community and reluctance to seek treatment for fear of discrimination.

Our view

Podoconiosis can be prevented easily, at little cost, by wearing shoes and practising good foot hygiene. However, a study in southern Ethiopia revealed that, in rural areas, nearly half of all school children aged 9–15 years either walk barefoot or wear under-protective footwear.^[4]

While shoe-wearing among adults in Ethiopia can be as high as 84 percent,^[5] 53 percent wear nonprotective shoes (e.g. open shoes, such as sandals).^[4] Shoe-wearing habits also differ depending on events and activities. Four percent wear shoes only for holidays, believing shoes to be for special occasions^[4]. Twelve percent spend their time on farming activities barefoot.^[5] Given that gender imbalances can influence access to resources, including shoes and socks, lymphoedema from podoconiosis is more common among women than men, at a ratio of 0.7:1.^[6]

Common misconceptions act as barriers to wearing shoes, such as the belief that shoes can weaken the feet. This is compounded by misconceptions about podoconiosis, including that transmission can be prevented by not marrying an affected person.^[7] It is, therefore, essential to promote and sustain increased knowledge and positive behaviour change within communities, and to embed these practices into policy.

Effective treatment of podoconiosis relies on early diagnosis. The World Health Organization recommends two public health strategies to tackle NTDs^[1]: innovative and intensified disease management, and water, sanitation and hygiene (WASH). The first encourages an integrated approach to the management of NTDs, while the second focuses on hygiene-based case management.

We believe that the first strategy can be amplified through our existing experience of supporting the integration of NTDs into primary healthcare, while the second should be adapted to facilitate policy change at regional and federal levels. By advocating to update WASH to include the provision and use of shoes (i.e. WASSH), podoconiosis cases will be more effectively prevented and managed, through reduced exposure to irritant soils, and through the provision of custom shoes to patients affected by the disease, respectively. For these strategies to be successful, it will be critical to engage multiple stakeholders including policymakers within key ministries, such as those for agriculture, education, finance and economics, and health.

Our experience

Malaria Consortium has played a key role in building the evidence base for NTD programming in Ethiopia. In 2017–2018, we conducted a study in Southern Nations, Nationalities, and Peoples' Region (SNNPR) that focused on lymphatic filariasis, schistosomiasis and trachoma, podoconiosis and soil-transmitted helminths.^[8] The study explored the feasibility and acceptability of using targeted materials and processes to improve the detection, management and recording of these NTDs at the primary healthcare level. It also gathered evidence of the potential impact on health workers' knowledge and skills, as well as the system's capacity to produce relevant, timely and accurate data.

We subsequently applied a gender lens to health seeking for these five NTDs.^[9] The findings provided crucial insights into how gender influences access to health services. This work underscored the importance of addressing gender disparities to improve access to, and use of, NTD-related services to achieve universal health coverage.

Between 2019 and 2020, we conducted a small-scale study exploring the feasibility, acceptability and cost-effectiveness of integrating NTD interventions for lymphatic filariasis, schistosomiasis and trachoma into the primary healthcare system.^[10] Alongside this work, we developed a complementary intervention in 2020 to improve prevention, diagnosis and management of podoconiosis in SNNPR. As well as co-designing and validating the process and materials, we examined the community's perception and awareness of podoconiosis, disability and stigma.

Our collective research has allowed us to develop robust evidence supporting the mainstreaming of NTDs into the national health system, in alignment with national and global efforts.^[11,12] This has facilitated engagement with key stakeholders to advocate for stronger integration of diseases like podoconiosis in health policies.

Through our most recent project, Happy Feet,^[13] we aim to accelerate the control of podoconiosis by creating universal access to better quality preventive and healthcare management services. We will conduct a formative assessment to determine how stakeholders, who are so far supportive of this work, can best be engaged to advance the podoconiosis agenda in policy discussions.

Recommendations

Advancing and strengthening the NTD agenda in Ethiopia, particularly for podoconiosis, requires close collaboration with a variety of stakeholders. The recommendations that follow are primarily aimed at the federal ministries of agriculture, education, economy and finance, and health, along with development partners working on NTDs in Ethiopia. However, these recommendations provide valuable information to other ministries that are looking to integrate NTDs more firmly into their policies.

1. **Integrate podoconiosis packages in schools.** Embedding integrated packages of regular education sessions and key messages about podoconiosis will make young children aware of the disease and its causes, and encourage early care-seeking behaviour. Intervention packages would also play a critical role in encouraging appropriate foot hygiene practices.
2. **Engage women to strengthen social and behaviour change communications.** To reinforce messaging introduced at schools, relevant ministries and development partners can mobilise women to use their influence as caregivers within households to sustain positive behaviours in the home.
3. **Advocate for the inclusion of shoes in WASH at the federal and regional levels.** In addition to supporting equitable access to shoes, this would contribute to embedding prevention as a key message in federal and regional policies. Advocating for WASH would also help to prioritise podoconiosis treatment in primary healthcare, in line with the National NTD Master Plan — particularly with regard to strengthening the integration and linkage of NTD programmes with other health programmes. The formative assessment planned as part of Happy Feet, along with the evidence generated from this research, will inform future advocacy engagements.
4. **Provide custom shoes to women affected by podoconiosis, facilitated by tax subsidies or waivers to custom shoe producers.** Given that women are most affected by podoconiosis, it is important that prevention and management strategies address their needs. Subsidising the cost of shoes for women would be a transformational preventive measure, given that most of them are farmers. Custom shoes would also aid faster recovery, thereby minimising loss of economic productivity and improving physical health and wellbeing. Adopting tax incentives or exemptions for local shoemakers would improve equitable access to health services, both for those susceptible to the disease and for individuals already affected by podoconiosis.
5. **Strengthen public-private-philanthropic partnerships to increase the availability of foot hygiene resources.** Engaging organisations and individuals to support the provision of shoes and socks to children, farmers and those already affected by podoconiosis will improve equitable access to these resources and, by extension, improve prevention.

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Contact: info@malariaconsortium.org



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