



An Impact Assessment of Podoconiosis Intervention Provided by Heart and Sole Africa in Rwanda

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Heart and Sole Africa

Heart and Sole Africa (HASA) is a non-governmental organization in Rwanda that is committed to eradicating podoconiosis. The main clinic is located in Musanze, a city in the northern region of Rwanda, and serves a community predominately consisting of subsistence farmers who have developed podoconiosis following years of barefoot work in the irritant soil. Five dormant/extinct volcanoes dominate the landscape and are responsible for the high irritant soil content in the region. HASA runs a clinic and multiple other programs aimed at fighting podoconiosis and empowering those who suffer from the disease. Additionally, an education campaign exists that teaches preventative techniques, such as wearing shoes, to the children at nearby schools.

**Our Vision:
A World Without
Podoconiosis**

Background

Podoconiosis is a neglected tropical disease (NTD) that affects people living and working bare foot in irritant red clay soil of volcanic origins. It is a chronic and debilitating disorder that is a considerable public health problem in at least 10 countries in tropical Africa including Rwanda. Podoconiosis has been studied in different African regions but the disease remains neglected and little information is known about it in Rwanda. Simple and inexpensive measures can be used to treat podoconiosis including foot hygiene, wearing shoes and bandaging. Large-scale intervention services are lacking despite the relative ease of treatment. Wearing shoes consistently and regularly is the best way to prevent podoconiosis. However, financial and cultural factors often prevent local subsistence farmers from purchasing shoes. This study was undertaken to assess the impact of podoconiosis intervention by Heart and Sole Africa in Musanze, Rwanda.



Figure 1: Before and After 3 months of HASA Treatment. The patient came to the clinic with clear swelling and nodules on her lower legs that prevented her from wearing closed toed shoes. She underwent soaking and bandaging procedures provided by HASA and the results after three months are shown.

Objectives

This study has three specific objectives:

- 1) to assess whether the clinic's activities are helping to manage the symptoms of those suffering from Podoconiosis in our care
- 2) to assess whether the clinic is effectively educating clients about the cause of podoconiosis and prevention techniques
- 3) to assess whether the clinic inspires positive behavioral change among podoconiosis clients (i.e. increased foot hygiene, wearing shoes, etc.)

Methodology

A cross-sectional study was designed to assess the impact of podoconiosis intervention by Heart and Sole Africa in patients seeking treatment. Demographic information on each respondent was recorded while a quantitative technique was utilized to assess the effectiveness of HASA's education, hygiene, and clinic programs. 82 participants were randomly selected from the 460 registered HASA patients to partake in the study. Participation was voluntary and the participants had the right to withdraw at any stage of the study without any consequences. Study participants were ensured that the gathered information remained confidential and were to be used for the best interests of the organization and attending patients. To minimize bias, external evaluators who have not been in contact with the organization before were recruited to conduct data collection in the absence of clinic staff. Verbal consent was obtained prior to each interview. A semi-structured interview and visual observations were used to gather data. Data analysis was performed through MS Excel and descriptive statistics were calculated to determine the mean, standard deviations, and other percentages of interest.

Results

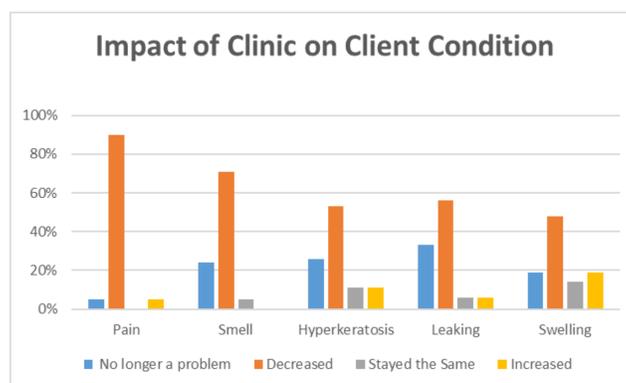


Figure 2: Quantification of HASA's Impact on Client Condition. The client was asked about the success of intervention on five different features of podoconiosis.

- Average age of participants was 57 years (SD=±14.9)
- 86% of participants were female
- A large majority of patients (~95%) said the clinic helped to reduce lower leg pain.
- Approximately half of the participants reported improvements in their hyperkeratosis, leaking, and swelling.

Impact of Clinic on Client's Podoconiosis Knowledge

	Identify Cause of Podoconiosis	Identify Prevention Measures	Identify Nutrition Practices
Yes	43%	95%	81%
No	57%	5%	19%

Table 1: Quantification of the clients' knowledge of podoconiosis following their education on the condition. Clients were asked basic questions on their knowledge of podoconiosis to assess the effectiveness of the clinic's educational efforts.

- A little less than half of the clients could identify the cause of podoconiosis.
- Nearly all clients could properly identify preventative measure and proper nutrition practices that impact the disease.

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Impact of Hygiene Education on Podoconiosis Clients

	Wash Feet	Wear Shoes
Everyday	95%	81%
Most Days	5%	10%
Sometimes	0%	5%
Never	0%	5%

Table 2: The table above describes patients behavior change towards podoconiosis prevention by wearing shoes and practice of hygiene.

- A majority of respondents reported the practice of proper measures to manage their symptoms.
- 100% washed their feet everyday and 91% said that they wore shoes either everyday most days.

Challenges to the Data

Representative Sampling: The number of clients that participated and their responses may not be representative of the entire client population. The following steps are needed to obtain a representative sample:

1. Maintenance of accurate attendance and identification of the number of 'active' clients at any given time. Clients come and go in the clinic and regular attendance would be necessary for accurate population data.
2. Surveys should be conducted with clients over several weeks in order to gain a representative sample. A 95% confidence interval with a 5% margin of error is preferred.

Bias: Results are based on subjective reporting by the clients who may/may not be accurately reporting changes in their condition. The following steps are needed to obtain a more objective calculation of the clinic's impact:

1. Take 'before' pictures of each client's feet upon their proper intake into the clinic. At 6 and 12 months, 'after' pictures can be taken and compared to the original pictures to determine improvements in podoconiosis symptoms.
2. Clients should also be asked to rate their pain on a pain scale upon their proper intake into the clinic. Clients can then be surveyed again at 6 and 12 months.

Conclusions

The current surveys, though not necessarily representative of all podoconiosis clients, indicate that the clinic has a positive impact on symptom management for clients. The change is most evident in pain management and reduction of smell. There is also a positive change in client's knowledge and behavior in regards to podoconiosis prevention.

Future Work

- Perform the survey again with more patients while clearly taking the necessary photos and pain ratings that were mentioned earlier.
- Employ third-party workers to survey the patients under the auspice of independent medical research to avoid bias.

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