Enhancing Ethiopian youths' Literacy about the Gene x Environment Contributions to Health using the Context of Podoconiosis

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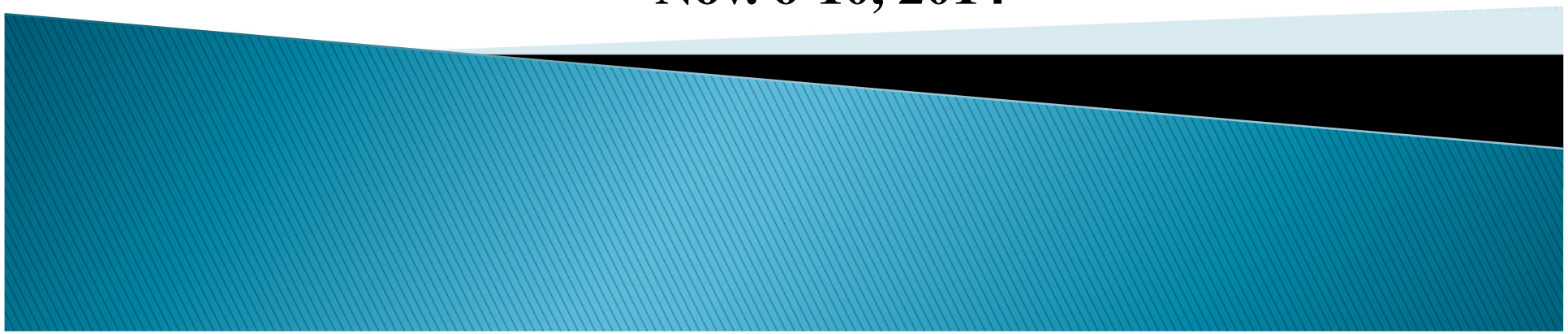


Context of the Study

- Poor understanding of gene-environment contributions to health conditions can
  - lead the public to conceive that genetics alone determines health outcomes.
- These misunderstandings could diminish public enthusiasm
  - about the benefits of changing behaviors to reduce risky health behaviors
  - for participating in genomics research due to concerns that findings might invite social stigma; and
  - leading a life style that might lead to different ailments.

Podoconiosis is a non-filarial elephantiasis endemic in highland Ethiopia that is caused.

-When genetically susceptible individuals are exposed to irritant particles in volcanic soil via walking and farming barefoot.

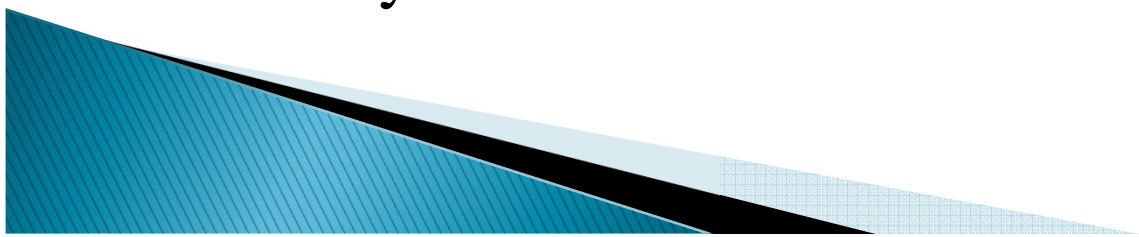
-The condition is entirely preventable if susceptible individuals begin wearing shoes at an early age and do so consistently.

Podoconiosis offers an excellent and concrete context for identifying

- **best practices in enhancing literacy regarding gene x environment contributors to health, which could be generalized to other health conditions.**

Context…

- Studies revealed that individuals' knowledge of podoconiosis is far from the 'scientific knowledge';
- Those misconceptions are said to create a blithe disregard among individuals who are genetically susceptible to the disease for preventive measures.
- The lack of proper understanding of gene × environmental contributors of podoconiosis
- And the undesirable consequences stem from it can justify the need for an intervention to improve health literacy.



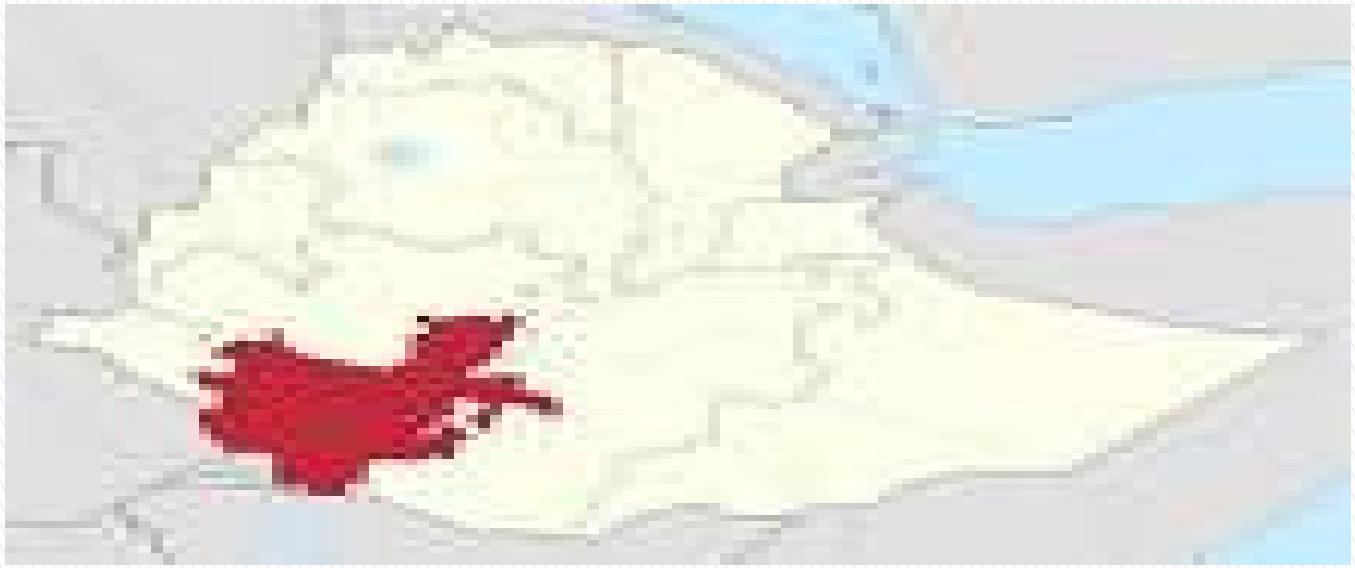
Objectives of the Study

- Documenting the prevalent knowledge of podoconiosis among the youth and indicate the convergence and divergence of it with expert-generated knowledge;
- Identifying the personal attributes and socio-economic status of the youth associated with the prevalent knowledge of podoconiosis;
- Assessing the knowledge production and dissemination regarding podoconiosis in the targeted population.

Objectives…

- Exploring optimal strategies and settings to conduct literacy-building activities to youth living in the communities;
- Implementing and evaluating gene x environment literacy-building activities in a small feasibility pilot; and
- Characterizing generic best practices to guide the development of gene-environment literacy-building approaches for under-resourced and low literacy communities in Africa.

Study Setting

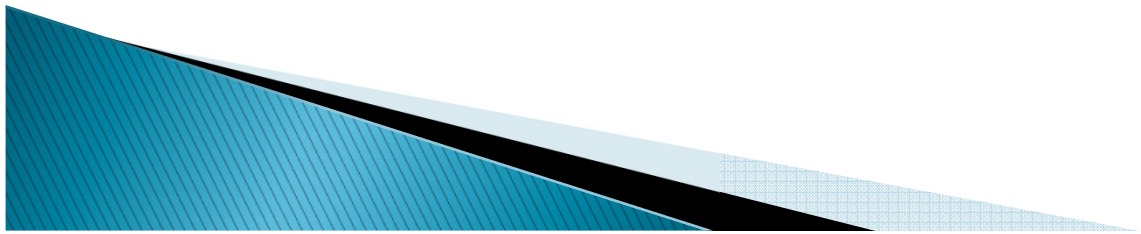


In Ethiopia, 11 million people are at risk through exposure to irritant soil, and an estimated 1 million people are affected nationwide (Desta et al. 2003)

The study will be conducted in two communities in Wolaita zone of southern Ethiopia. This zone has been selected because of the relatively high prevalence of podoconiosis.

Research Strategy
Mental Models Methodology

- Mental models methodology aims at
  - Utilizing educational tools which make up for the gaps in lay knowledge
  - by improving and "correcting" the mental models and
  - thereby having an indirect impact on people's behaviors and actions.
- Attempts will be made to document youth's beliefs and knowledge of the disease and address identified gaps and misconceptions.



Mental Model…

1 Step	2nd Step	3rd Step
Youth and expert Mental Model	Survey	Pilot Evaluation
- Experts - 30 Semi-structured interviews with youth (15 per community).	Interviewer administrated survey questionnaires will be administrated to 200 purposively selected youths. Strata: (1) affected or unaffected family ; (2) male or female; (3) in the age group, 15-18 or 19-24.	The youths will randomly be assigned into two different groups: the experiment and control group.

Data Analysis

NVIVO-10. (qualitative)

The codes will be used to depict the convergence and divergence of the expert model from that of the youth's.

SPSS (Quantitative)

Univariate and bivariate analyses.

Statistical tests such as t-test will be executed on results obtained from the experimental and control groups to asses the impact of the educational materials.

Protection of Human Subjects

- There is minimal risk of psychological or other harm as a result of participating in this study.
  - It is possible that completion of interviews could be upsetting to youth as they will be asked to consider exposures that might lead to developing podoconiosis.
  - Interviewers will emphasize to participants that they can skip any questions that they would prefer not to answer, and can terminate study participation at any time without adverse consequences.
  - Another, though unlikely possible risk is breach of confidentiality. To reduce this risk, interviews will be conducted individually in a private location.