

A One Health Perspective for Psycho-Social and Environmental Determinants of Lymphatic Filariasis Preventive Practices in Nepal–India Border Endemic District

Santos Pandey,, Pannamas Maneekand, Ronald Enrique Morales
Vargasc, Meghnath Dhimal and Preeyaporn Koedrithe

Global Burden of LF

- LF is caused by *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori*, which are transmitted by mosquitoes (*Culex*, *Anopheles*, and *Aedes* spp.).
- 794 million people in 44 countries worldwide remain risk of LF,
- 50 million people are infected as of 2021,
- 36 million people are chronically debilitated.

Source: WHO, 2022

In Nepal, where approximately 10 million people are at risk and 37,000 were infected as of 2023 (EDD,2023). The LF elimination program, launched in 2003, has progressed through several critical phases;

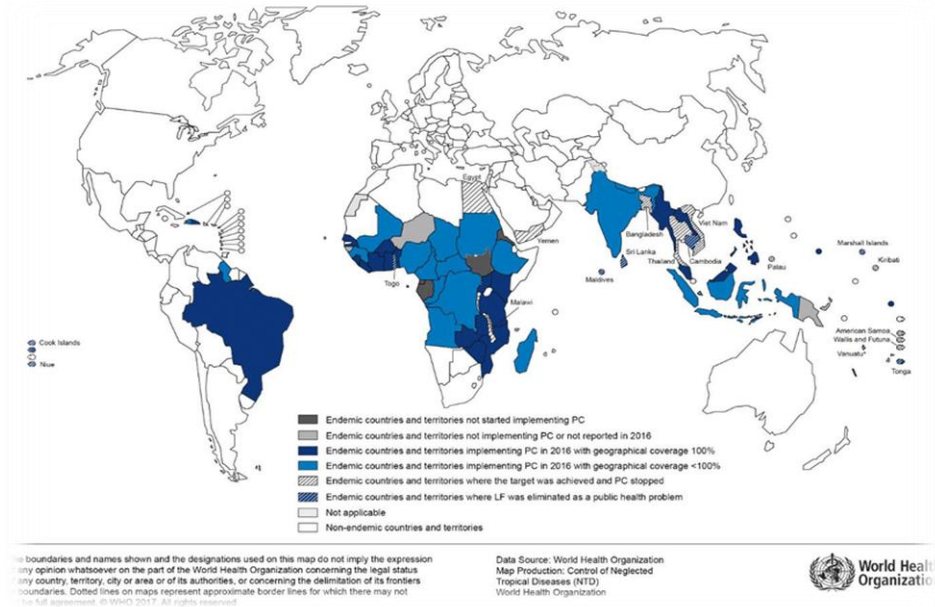
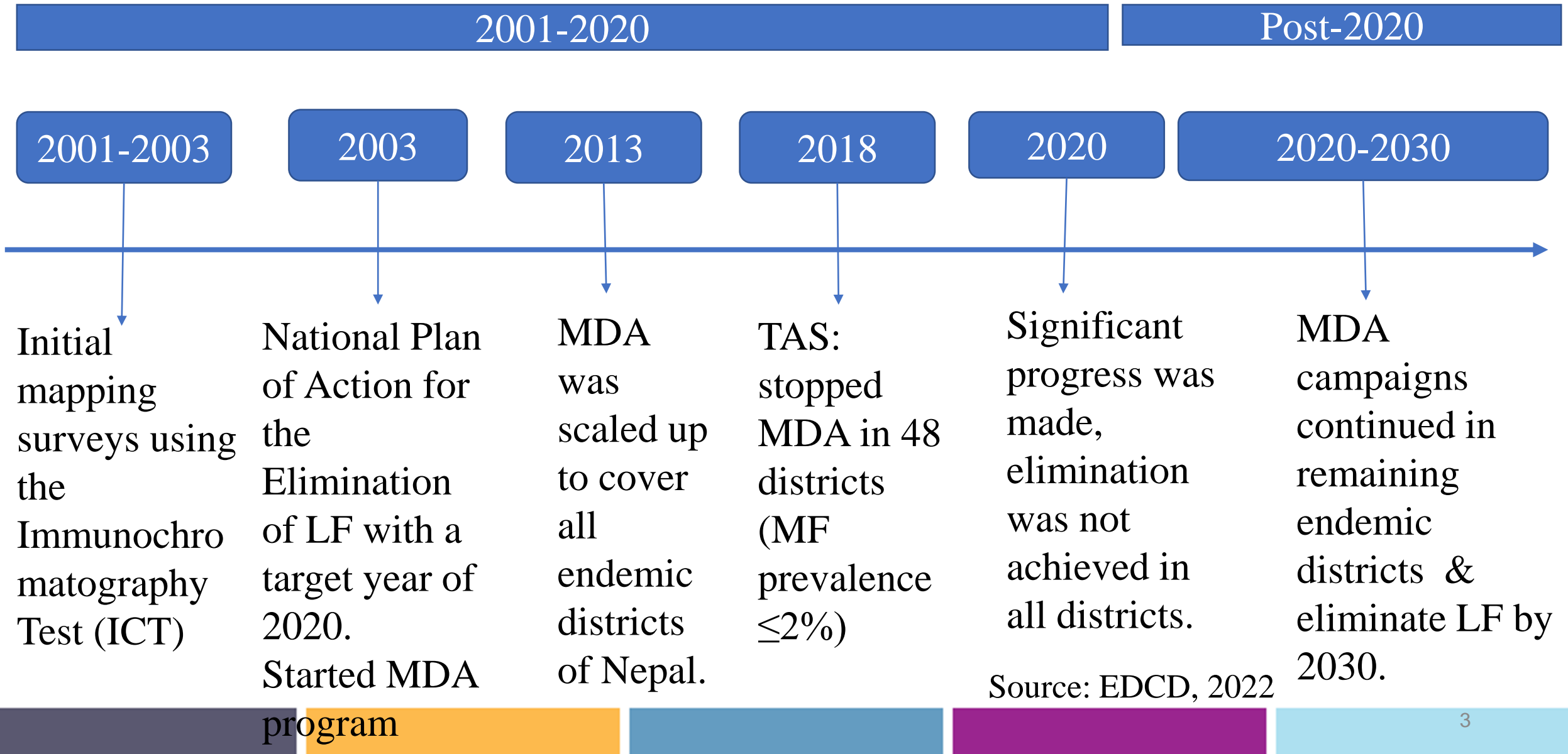


Figure: Number of LF cases distributed according to WHO estimate, 2022

Timeline for LF elimination in Nepal



- Kapilbastu district shows ongoing LF transmission even after more than 14 MDA rounds, indicating gaps in elimination strategies.
- Psychosocial determinants, including knowledge, attitudes, and perceived stigma, remain underexplored in LF research.
- Integrating human behavior, environmental conditions, and vector ecology under One Health approach, remain underexplored in LF research.
- This study examines the influence of knowledge, attitudes, and stigma on LF preventive practices in a Nepal–India border endemic district.



Methods

Study design and setting

- Community based cross-sectional study in LF-endemic Nepal–India border district (Kapilbastu)

Sampling

- 385 systematically selected households

Data collection

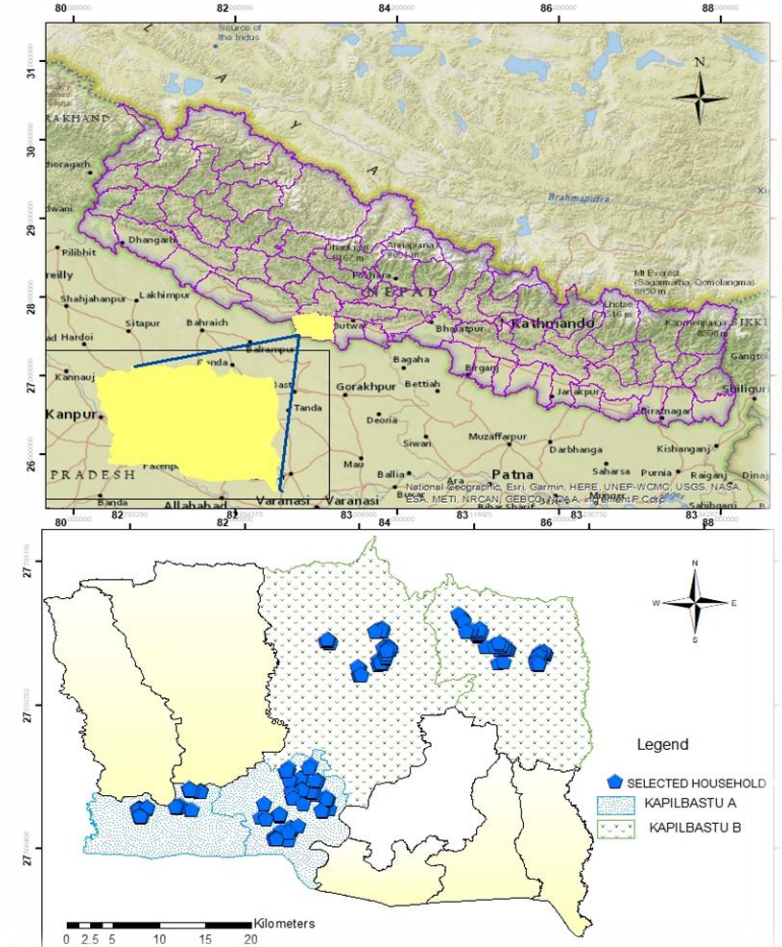
- Validated structured questionnaire covering knowledge, attitudes, stigma, practices, and sanitation

Data analysis

Descriptive, correlation, and multivariate logistic regression analysis using SPSS

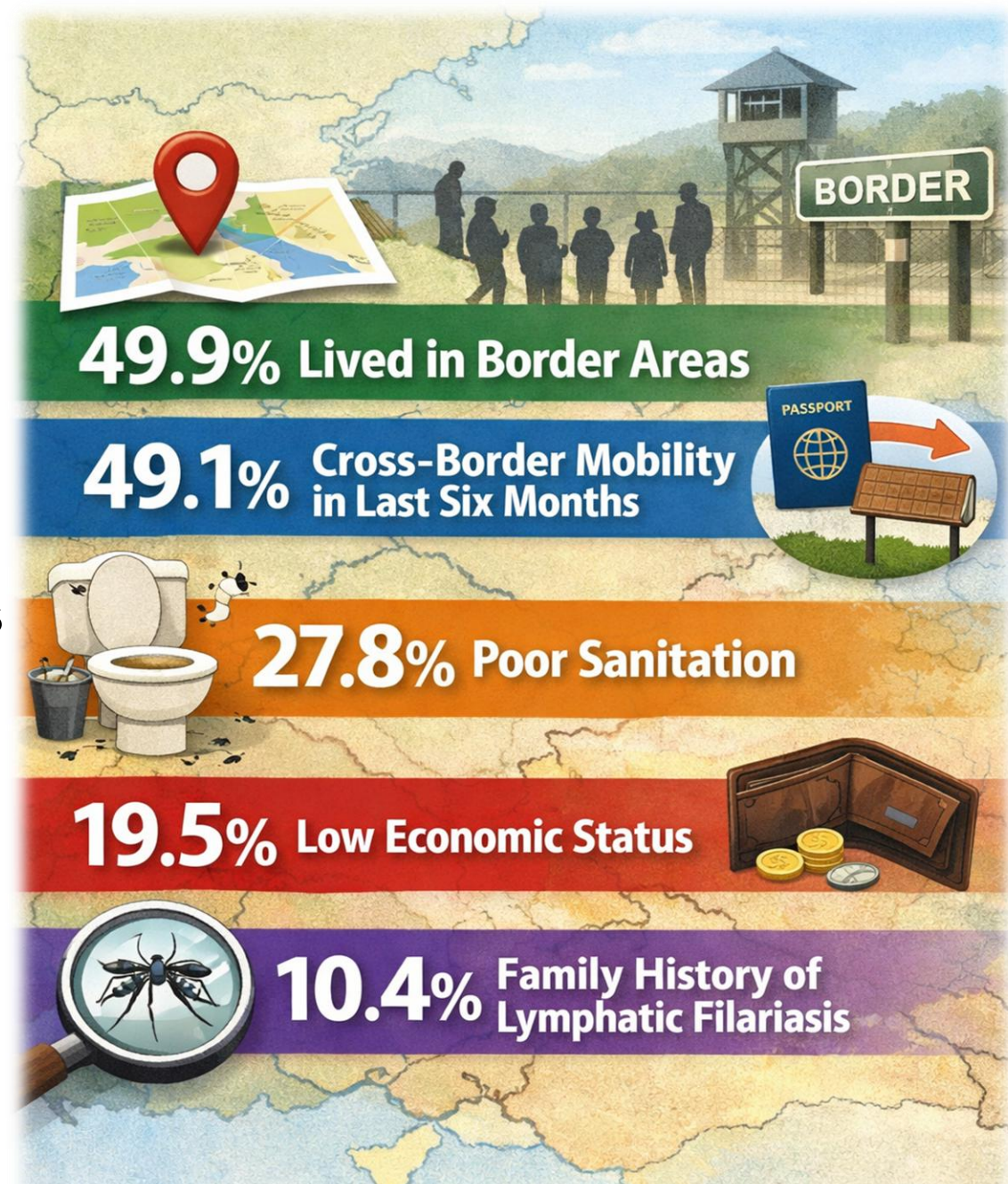
Ethics

Approved by MU-CIRB and NHRC with informed consent and Helsinki compliance

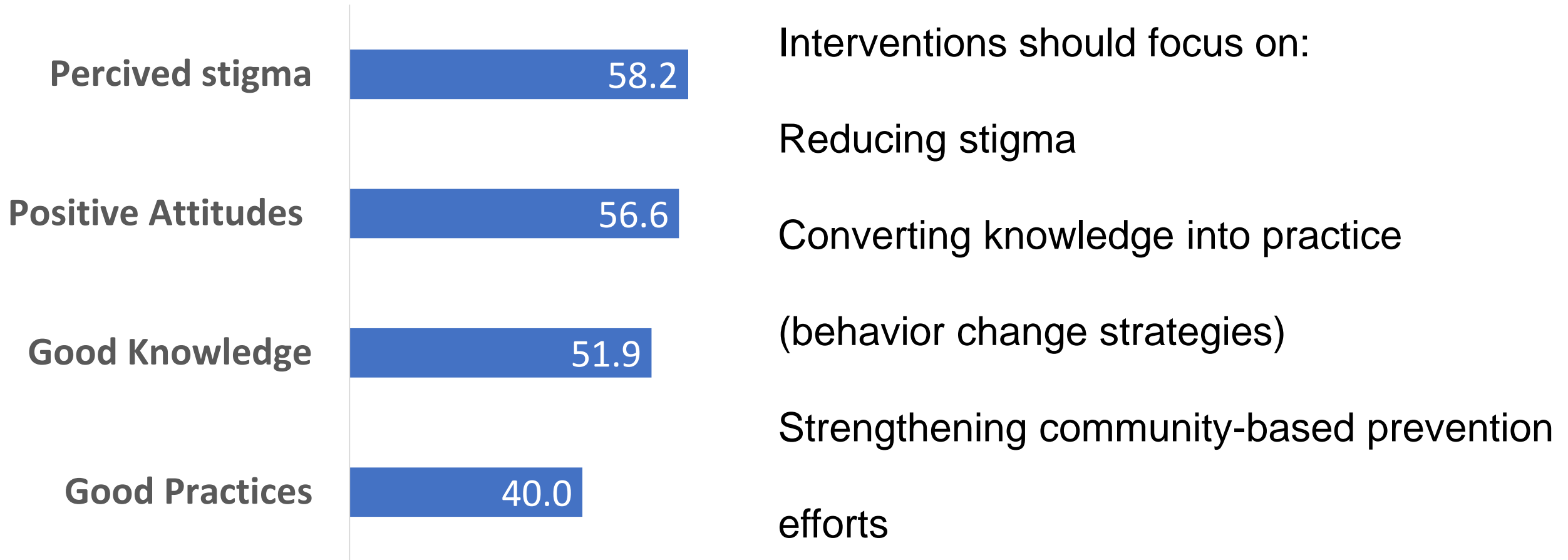


Highlights of the descriptive results

- Nearly half report recent cross-border travel within the past six months, indicating high population movement.
- A considerable portion of the population faces hardships related to poor sanitation and low economic status.
- One in ten families has a history of LF infection.



Proportion of LF related knowledge, attitudes, perceived stigma and practices



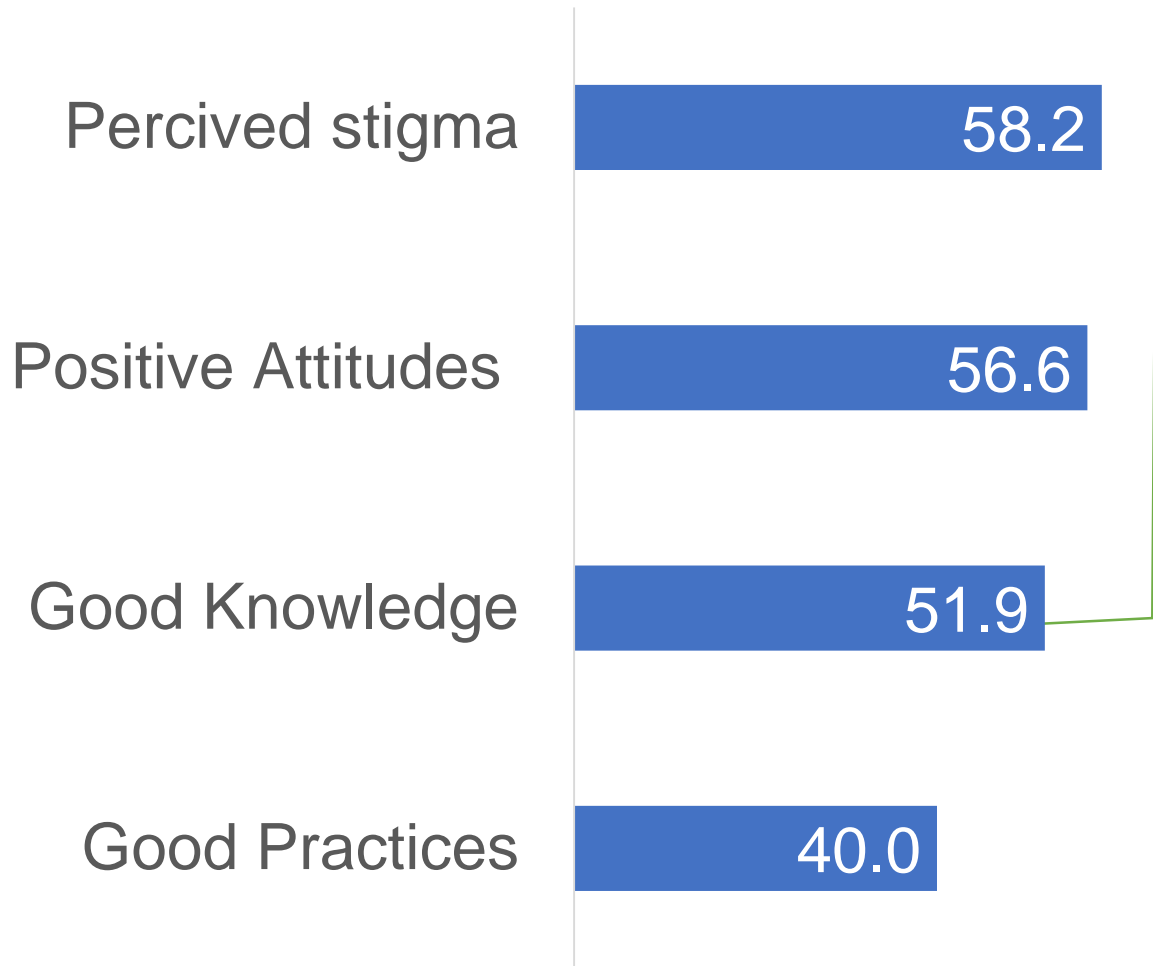


Fig: Proportion of LF related **knowledge**, attitudes, perceived stigma and practices

Major knowledge gaps:

40.3% understood parasite–vector–host cycle

37% knew LF is mosquito-borne parasitic disease

59.4% knew personal protection methods

26% knew MDA drug distribution sites

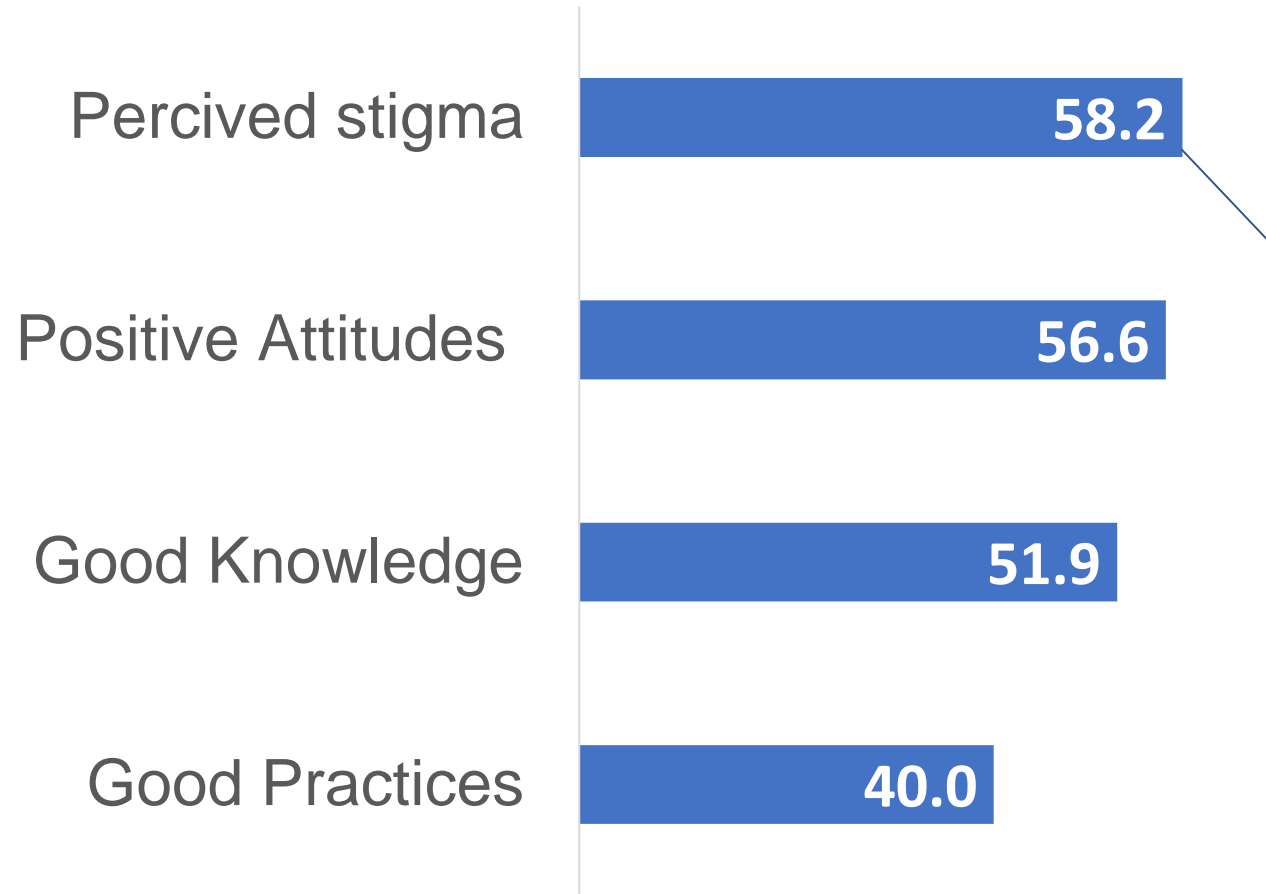
Program fatigue and declining confidence



Program fatigue and declining confidence;

- 53.2% believe LF is preventable
- 42.3% trust MDA effectiveness

Fig: Proportion of LF related knowledge, **attitudes**, perceived stigma and practices

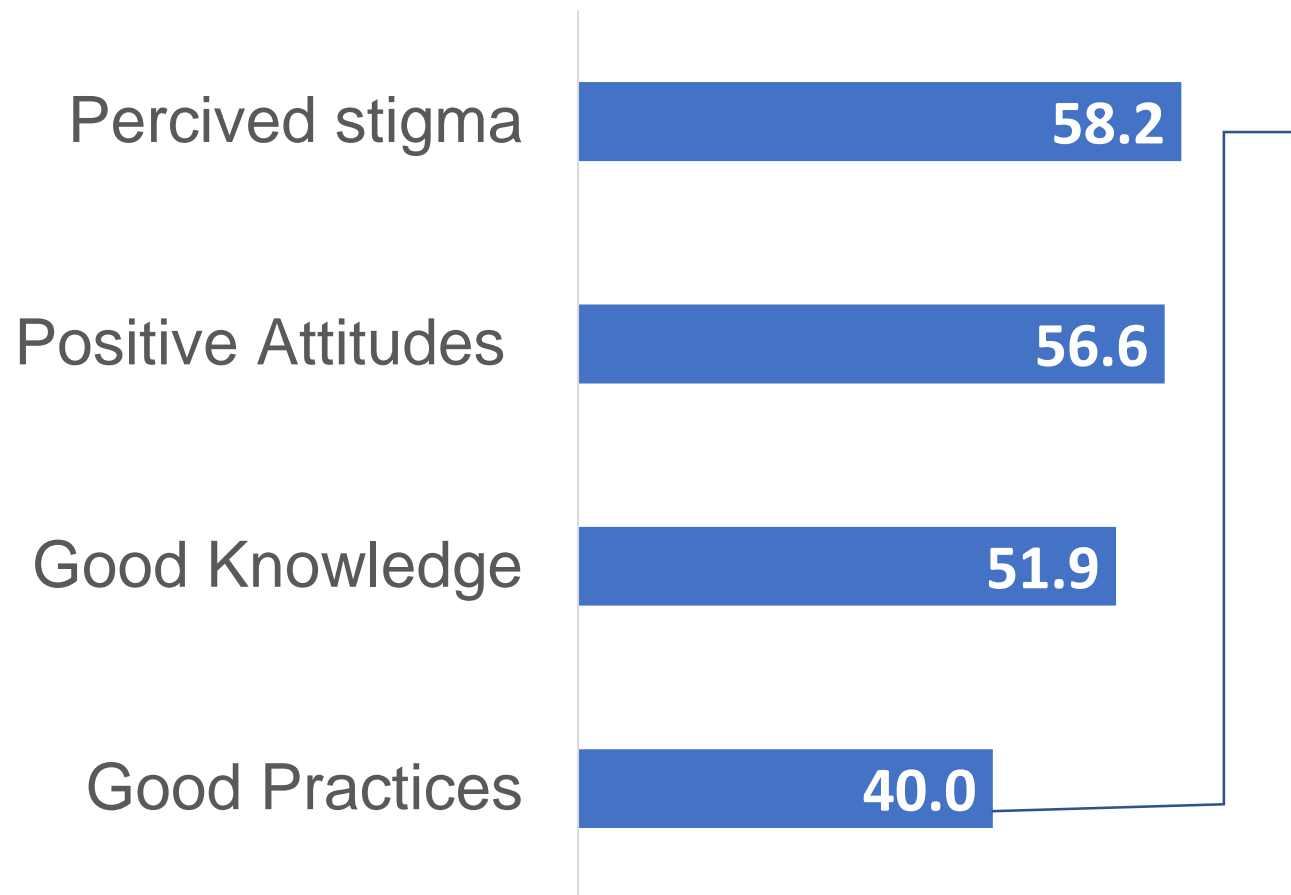


Perception of Stigma:

- 57.7% prefer to hide LF cases in family
- 34.5% believe patients should be isolated

Stigma hides cases and weakens elimination

Fig: Proportion of LF related knowledge, attitudes, **perceived stigma** and practices



Weak collective practices:

- Reducing breeding sites (10.4%)
- Stakeholder collaboration (8.1%)
- Awareness campaigns (5.7%)

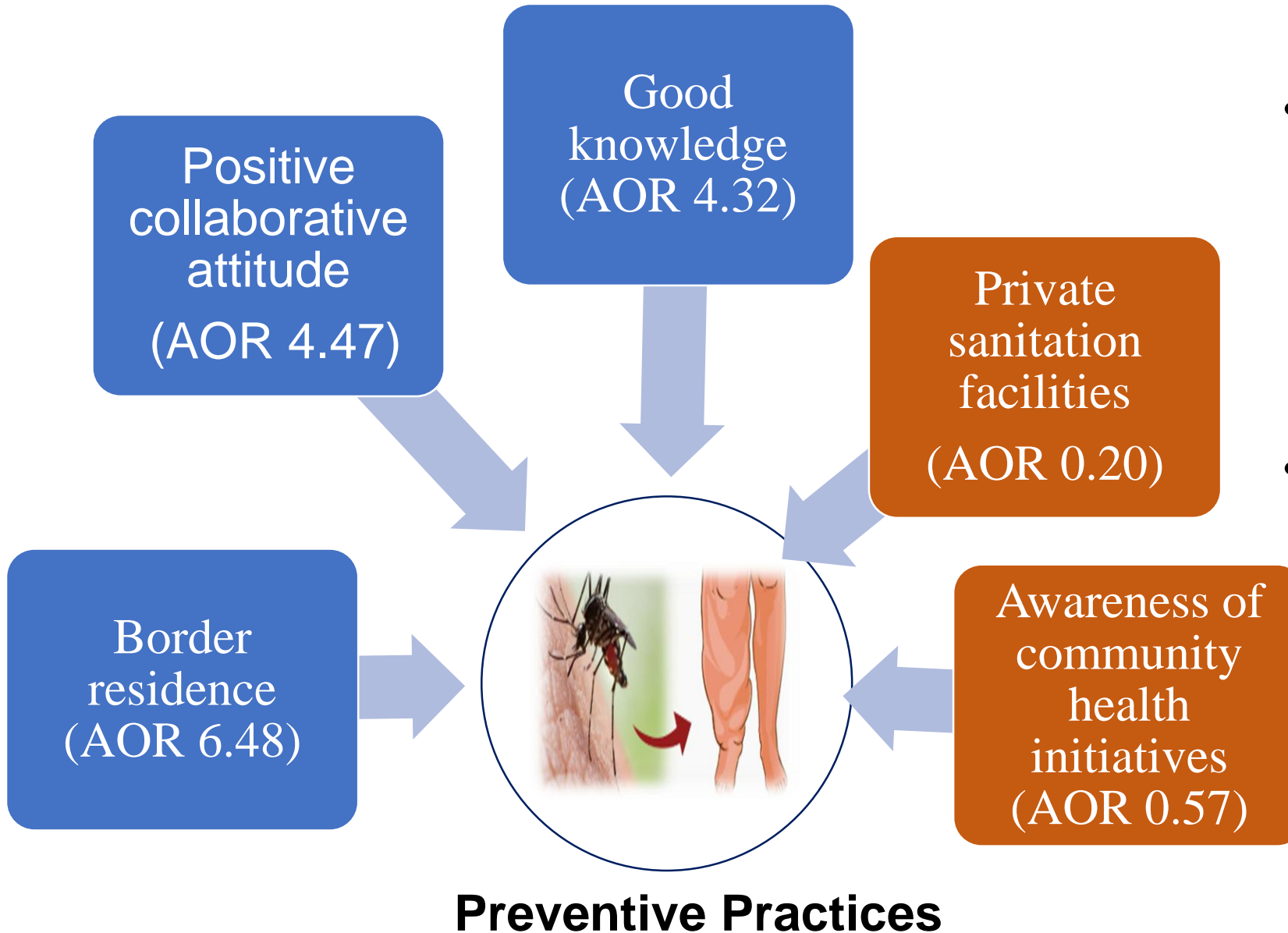
Fig: Proportion of LF related knowledge, attitudes, perceived stigma and **practices**

Correlation with preventive practices

- Reducing stigma and strengthening knowledge and attitudes are essential to improve LF prevention and achieve elimination goals.

Variables	coefficient rho
Knowledge	0.374 (P < 0.001)
Attitudes	0.220 (P < 0.001)
Perceived stigma	-0.207 (p<0.001)

Determinants of Preventive Practices



- Knowledge and attitude both play critical roles, reinforcing KAP relationships.
- Mismatch in awareness and practice suggests that current health programs may not be effectively translating awareness into action.

Take-Home Message

- LF persistence is driven by **border vulnerability, knowledge gaps, stigma, and weak community engagement.**
- Even with reasonable knowledge and attitudes, **this is not translating into action.**
- **MDA alone is insufficient** for elimination.
- **One Health approach integrating social behavior, sanitation, and community participation is essential for sustainable LF control.**



SANTOS PANDEY

PhD. in Health and Sustainable Development Mahidol
University, Thailand

Lecturer: Sanothimi Campus, Bhaktapur