

Developing tools for promoting female-focused One Health in Rwanda

Authors and affiliations

Concorde Izere RWIBUTSO¹, Therese NYIRAHANIMANA^{2,3}, Alice NSENGIYUMVA⁴, Leila DUSABE⁴, Stephanie MITCHELL⁵, Barbara NATTERSON-HOROWITZ^{6,7}, Emily SCHWITZER⁷, Dawn ZIMMERMAN^{8,9}, Sabrina SHOLTS⁹

¹ Gorilla Doctors, ² Friedrich-Ebert Stiftung, ³ Rwanda Biosolution, ⁴ University of Global Health Equity, ⁵ University of Washington, ⁶ Harvard University, ⁷ University of California, Los Angeles, ⁸ Veterinary Initiative for Endangered Wildlife, ⁹ Smithsonian Institution



Smithsonian
Institution

Introduction

- Across the tree of life, **females of different species share health challenges**. Female exposure to both non-communicable and infectious diseases has increased
- Despite the growing recognition of One Health worldwide, **the cross-species vulnerabilities of females are often overlooked**
- In Rwanda, women's health is a priority issue, but like in most of low- and middle-income countries, there is limited research focusing on its connections to animal and environmental health
- To help address the problem, we initiated a **community education project** to develop and produce an exhibition that would raise awareness about these issues among Rwandan audiences



Fig 1. Above: Workshop to present and select exhibit topics in Kigali on November 3, 2023; Below: Workshop to present and discuss the completed exhibit in Kigali on May 10, 2024

Methods

Surveyed literature to identify knowledge gaps and research opportunities on female-focused One Health in Rwanda

Identified top health risks for women and related concerns in wildlife and domestic animals

Six major topics presented for discussion in Kigali at the One Health Day Workshop, November 2023 (Fig. 1)

Feedback from the November workshop was used to select topics for exhibit development

"Female Health Across the Tree of Life" (FHTOL) in Rwanda exhibit created, using the Smithsonian National Museum of Natural History's *Outbreak DIY* toolkit for One Health community education. Building on work by Barbara Natterson-Horowitz and colleagues, the exhibit was presented in May 2024 (Fig. 1)

Results

The FHTOL exhibit consisted of 20 panels presented at a workshop in Kigali on May 10, (Figs 1 and 2) with tailored messages on four major topics:

- Breast cancer** - illustrating genetic predispositions, lifestyle influences, and the role of early detection in improving outcomes for women, but also showcasing species that are naturally resistant to cancers and therefore potentially informative for new treatments
- Hypertensive disorders in pregnancy** - raising awareness about maternal health risks and the importance of prenatal care, as well as the genetic adaptations that allow giraffes to maintain very high blood pressure without impacting maternal or fetal health
- Antimicrobial resistance** - discussing concerns for women due to gender norms and overprescription of antibiotics, and making infections during pregnancy or childbirth more difficult to treat
- Postpartum depression** - destigmatizing mental health issues and promote supportive interventions for an often-neglected problem with numerous environmental factors



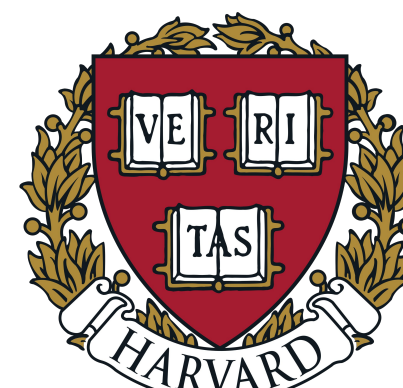
Fig 2. Left: Panels on breast cancer in English and Kinyarwanda for wider reach to local audience; Right: Panels on animal models and environmental factors for breast cancer

Limitations & Conclusions

- Female health is an under-explored aspect in One Health in Rwanda
- Initiatives like the FHTOL exhibit can both educate the public and motivate the research community to learn more about female health
- The impact of the exhibit is limited to the availability of appropriate venues for display, the Rwanda One Health Research Network continues conversations to promote further FHTOL activities: <https://onehealthresearcherhavenhub.weebly.com/>
- Find information about related initiatives at <https://www.bnatterson-horowitz.com/> and <https://naturalhistory.si.edu/exhibits/diy/outbreak>



UNIVERSITY OF
Global Health
EQUITY



Funding acknowledgment:
Draper-Hills Family
Foundation
Smithsonian National Museum
of Natural History