Gender and zoonotic pathogen risk in a resource-limited community at the livestock-wildlife interface, Mpumalanga, South Africa: a qualitative analysis

Pallavi Oruganti, Amanda Berrian, Elisabeth Root, Violet Ndlovu, Philemon Mbhungele, Ilana Van Wyk

Abstract

Background The Mnisi community is a livestock-dependent community neighbouring the Great Limpopo Transfrontier Conservation Area in South Africa. Here, zoonotic pathogens contribute to as many as 77% of cases of acute febrile illness, including those associated with tick, domestic animal, rodent, and wildlife exposure. Previous gender-disaggregated analysis has shown that men and women have different risks of zoonotic illness, suggesting that exposure routines for zoonotic infections should be further explored to inform gender-sensitive risk mitigation strategies. Using a One Health approach, we focused on interactions between community residents, domestic animals, and the built and natural environment to investigate potential exposure pathways for zoonotic infections from a gendered perspective.

Methods We used an ethnographic approach, combining data from direct household observations and focus group discussions, to examine behaviours that may be linked to zoonotic pathogen exposure. Participating households were randomly selected from three villages under the leadership of the Mnisi Traditional Authority in Mpumalanga, South Africa. We conducted four household observations in each village followed by one male and one female focus group per village. Observations and discussions focused on previously identified gendered tasks such as domestic animal care, water collection, and food preparation, and how and by whom these tasks were performed. Data were triangulated across methods, and analysis included translation, transcription, and thematic coding using fundamental grounded theory.

Findings Observations and focus groups took place during July, 2019. The focus groups included 44 participants: 23 men and 21 women, mean age was 36 years. Mean household size was nine people. Observations were conducted in 12 households (four per village) for a total of 50 h. We noted gender differences for household tasks, animal care duties, and environmental exposure. Male gender-typed roles included cattle husbandry such as taking cattle to the bush daily for grazing (13 mentions) and slaughter of cattle (7 mentions). Female gender-typed tasks included household duties such as food preparation (13 mentions), household cleaning including sweeping the yard, taking out trash (10 mentions), water collection from boreholes or neighbourhood taps (7 mentions), and feeding and care of smaller livestock such as goats and chickens (4 mentions). Other emergent themes included decreased water and grazing land availability in the community, affecting both men and women, as water collection and cattle grazing now required more time spent in the bush and increased potential vector-borne disease exposure. From observations, it was noted that men wore covered protective work clothes (such as long trousers and closed-toe shoes) more commonly than women did, but women did not often wear these for household duties including water collection in the bush. Conflict with wild animals and domestic animals, such as wild animals killing domestic animals in the bush and domestic animals entering other households was also noted as a concern by men and women (13 mentions).

Interpretation We recommend that these gender-typed roles serve as specific critical control points for zoonotic pathogen exposure. For example, tick-bite exposure prevention should be directed at both men and women based on their daily activities, such that prevention in men should target exposure from cattle and prevention in women should focus on personal protective measures during water collection. Exposure prevention strategies at the household level for water-borne zoonotic diseases like leptospirosis should be targeted towards women. These findings contribute to a more detailed understanding of risk behaviour and critical control points for zoonotic disease—a significant contributor to acute febrile illness in this rural, resource-limited setting.

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Declaration of interests
We declare no competing interests.