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# Using art and story to explore how primary school students in rural Tanzania understand planetary health: a qualitative analysis

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## Abstract

**Background** The global planetary health community increasingly recognises the need to prepare students to investigate and address connections between environmental change and human health. As we strive to support education on planetary health themes for students of all ages, understanding students' concepts of linkages between the health of people and animals, and their shared environments might advance educational approaches. Children living in villages bordering Ruaha National Park in Iringa Region, Tanzania, have direct experience of these connections as they share a water-stressed but biodiverse environment with domestic animals and wildlife. Livelihoods in these villages depend predominantly on crop and livestock production, including extensive pastoralist livestock keeping. Through qualitative research, we aim to explore and describe Tanzanian primary school students' understanding of connections between human health and the environment.

**Methods** Working with 26 village primary schools in Iringa Rural District, Tanzania, we adapted an art and story outreach activity to explore student perceptions of planetary health concepts. Following a standardised training session, a lead teacher at each primary school helped students aged 12–15 years form small teams to independently develop and illustrate a story centred on themes of how human health depends on water sources, wildlife, livestock, climate, and forest or grassland resources. Students were encouraged to discuss these themes with their teachers, peers, and families while developing their stories to gain broader as well as historical perspectives. The students generated stories that incorporated solutions to challenges within these themes. Written materials and illustrations were collected from each school along with data on sex and tribe of the group members. We translated all stories from Swahili to English for analysis. The primary outcomes of interest in analysing the students' writing and illustrations were the relationships students identified between human health and wildlife, livestock, water sources, and forest resources.

**Findings** A total of 1043 students in 168 groups participated in the art and story activity between October and November 2017, with groups containing a mean of six students (SD 1.5, range four to 11). In our preliminary review that we present here, students identified diverse beneficial and adverse connections between human health and environmental change through direct and indirect pathways, which included both ecological or biological and socioeconomic linkages. Preliminary themes noted in student work were clean air and water provision by forests, altered food, fuel, and medicinal resources, contact with animals and their waste, livelihood impacts, and cultural values. We are in the process of coding and analysing the student submissions to explore and describe their understanding of planetary health and to identify potential differences among student groups related to village, gender, and tribe.

**Interpretation** Through their art and writing, rural primary school students showed evidence of systems thinking in describing connections among human health and their surrounding environments. Focusing on links to wildlife, livestock, water sources, or forest resources, the students described both direct (eg, meat from wildlife or livestock to support human nutrition) and indirect (eg, funding for local human health clinics from wildlife tourism revenue) relationships between the environment and human health. Many student groups also interpreted relationships among people and components of their surrounding environment as beneficial or adverse, proposing specific solutions to enhance or mitigate these effects. Because responses varied widely among the included primary schools, future research on these gaps has the potential to improve planetary health educational approaches and student understanding.

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### Contributors

All authors designed the study. JM and EK did the art and storyboard outreach activity with primary schools. All authors contributed to data analysis and writing of this report.

### Declaration of interests

We declare no competing interests.

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