Globalmix Mozambique analysis

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1 Background

This is a summary of results from analysis of GlobalMix data collected in Mozambique. The project had two aims: 1. quantify social contact patterns among individuals data using paper diaries 2. quantify social contact patter within households using paper diaries and wearable proximity sensors

This analysis focuses on aim 1 only. Data were collected from Manhica (rural site) and Polana Canhico (urban site) between April 2020 and April 2021. Individuals were identified from the health and demographic surveillance system available in each site. We aimed to recruit 63 individuals from each of 10 age groups (<6 months, 6-11 months, 1-4 years, 5-9 years, 10-14, 15-19, 20-29, 30-39, 40-59 and 60+ years).

2 Analysis

3 Results

3.1 Summary of participant details

The figures below presents a summary the characteristics of the participants in the rural and urban site. A total of 1449 individuals participated in the study, with 730 and 719 participants recruited from the rural and urban sites, respectively. In some age groups (<5 yrs and 40-59 yrs) we recruited more than the target. By site, there was no major difference in number of participants recruited by age, sex, and school enrollment status.

> **Note**
>
> Convert table to figures

3.2 Participation summary by site

3.3 Summary of number of contacts reported

Overall, 21593 contacts were reported with slightly above half (12309, 57%) from the rural site. In each site, 6% of the total contacts were reported with children aged <5 years (7% rural, 6% urban), with 1% of the contacts in each site happening with infants aged <6 months (148 rural, 82 urban).

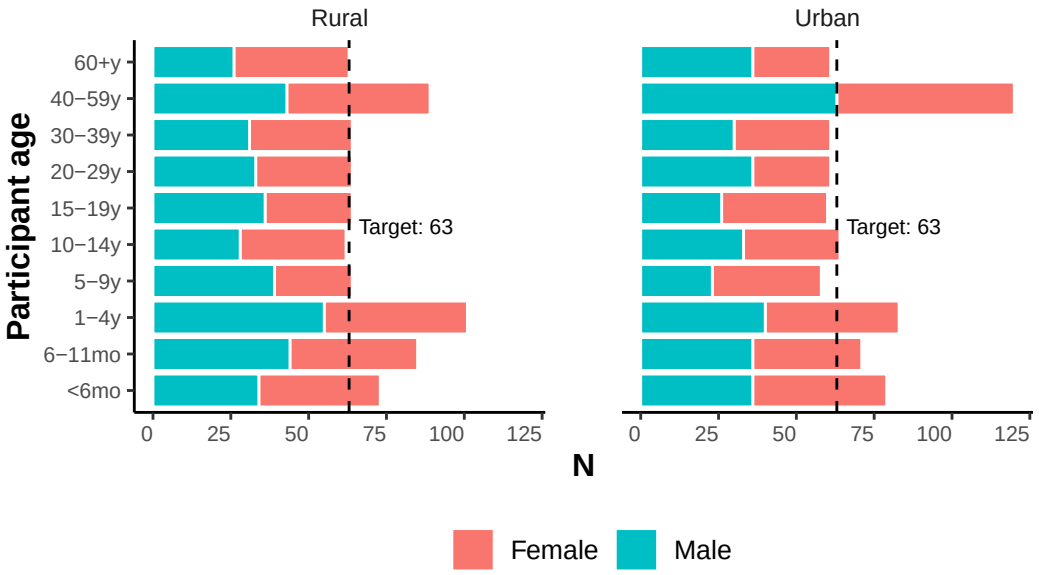

Figure 1: Participant age and sex distribution

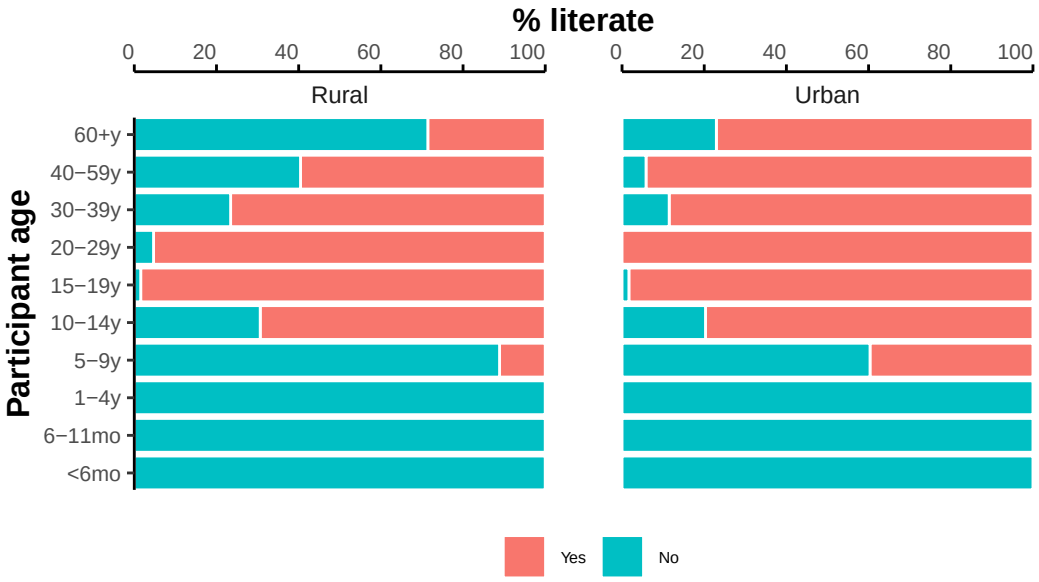

Figure 2: Literacy level

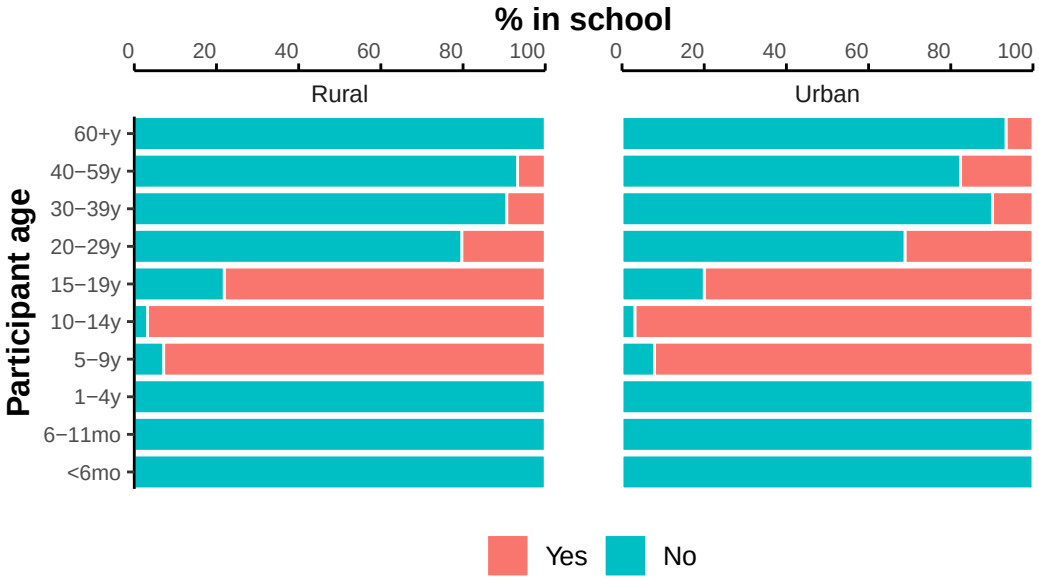

Figure 3: Participant currently enrolled in school

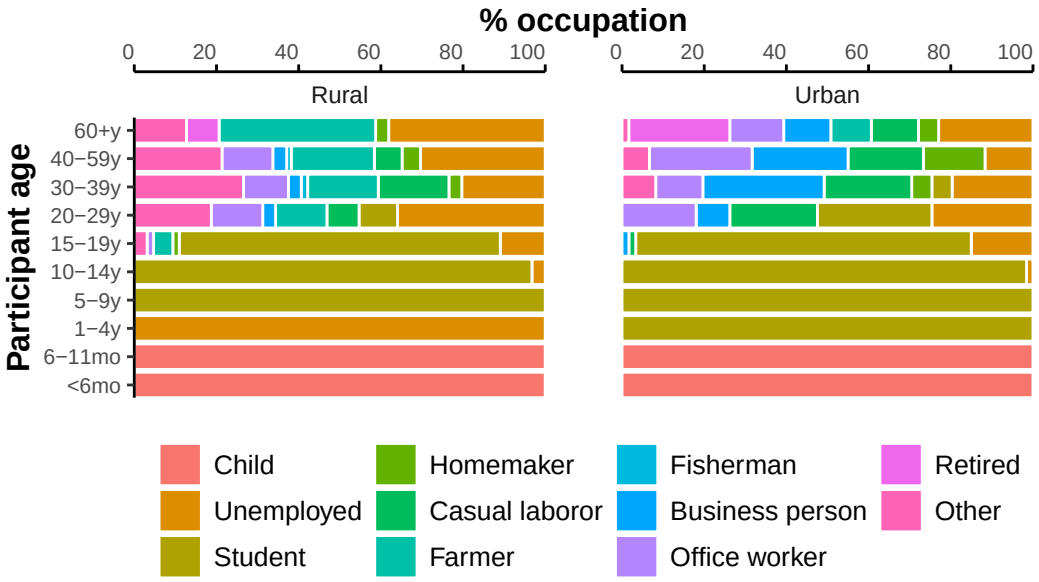

Figure 4: Participant ccupation

The highest number of contacts were reported with children aged 10-14 yrs (26% rural, 21% urban). Overall, more contacts were reported with women (54%) with no difference between sites.

> **Note**
>
> Table available separately

3.4 Distribution of number of contacts on both days

Data were collected over two consecutive study days. We present a summary of total number of contacts (including repeat contacts) over both study days.

Figure 5 shows the distribution of all reported contacts over the two days.

> **Note**
>
> Conduct statistical tests.

Figure 5: Overall distribution of contacts over two days by site.

We observe no difference in the median (IQR) number of contacts reported on day 1 compared to day 2.

Additional analysis can include: 1. mean number of contacts over both days 2. mean number of contacts of unique contacts only over both days 3. mean number of unique contacts reported on both day 1 and 2

> **Important**
>
> So from here below, I only present summaries of contacts for day 1 only.

3.5 Distrubution of number of contacts on day 1 only

Figure 6 shows the distribution of the contacts by rural and urban site and the corresponding mean contact rates on day 1 only. The rural mean contact rate was higher than the urban rate ()

Figure 6: Histogram of contact distribution by site showing mean contact rate over two days (vertical line)

3.5.1 Distribution of contacts for each site site:

3.5.1.1 by age

Figure 7: Overall distribution of contacts by rural and urban site

3.5.1.2 by sex

Figure 8: Distribution of contacts by sex

3.5.1.3 by household membership

3.5.1.4 by current school enrollment

3.5.1.5 by day of the week

3.5.1.6 by weekday/ weekend

3.5.1.7 by week of the year

3.5.1.8 by ARI infection status

3.5.1.9 by AGE infection status

3.5.1.10 by employment

Figure 9: Distribution of contacts by household membership

Figure 10: Distribution of contacts by school enrollment

3.5.2 Unweighted non-symmetrical contact matrices

3.5.3 Contact behavior

Figure 17 shows results of the question “Was the contact wearing a mask?

Figure 18 shows results of the question “What was the duration of the contact?

Figure 19 shows results of the question “Did you touch the contact?

Figure 20 shows results of the question “Did the contact occur indoors or outdoors?”

3.6 Negative binomial mixed model for crude contact rate ratio (CRR)

4 Proposed additional analysis

Analysis	Status
Bootstrapped contact rates	
Weighted contact matrices	
Multivariate analysis (Negative binomial model)	
Contact outlier analysis	
Masking and contact reporting	
Contacts vs indoor/outdoor locations	
Contacts by location of contact	
National policy measure timelines	
Known vs unknown contacts over time	
Contacts by vaccination status	

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Figure 11: Distribution of contacts by day of the week

Figure 12: Distribution of contacts by weekday/weekend

Figure 13: Distribution of contacts by week of the year

Figure 14: Distribution of contacts by ARI status

Figure 15: Distribution of contacts by AGE infection status

Figure 16: Crude contact matrices in rural and urban Mozambique

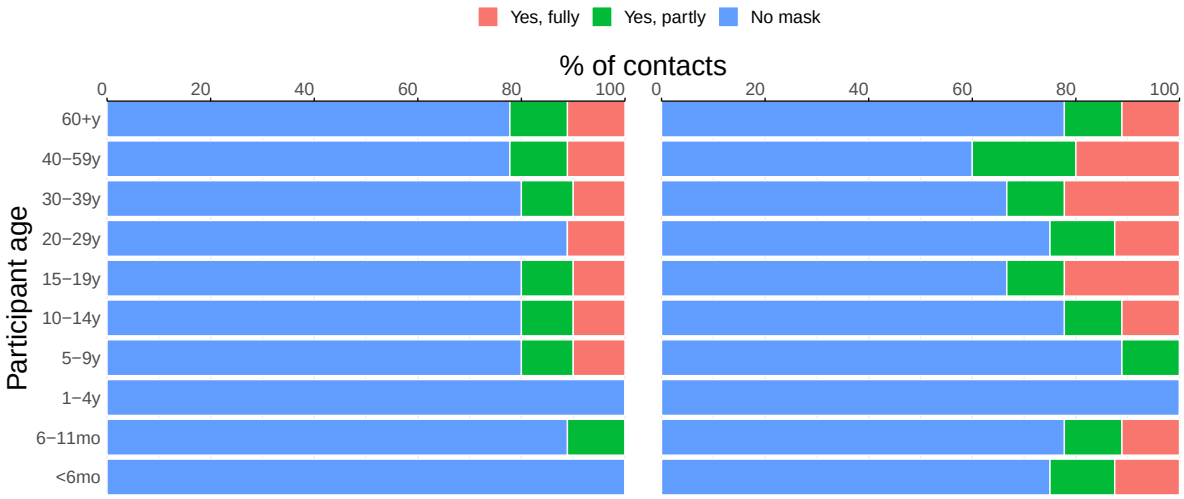

Figure 17: Mask wearing

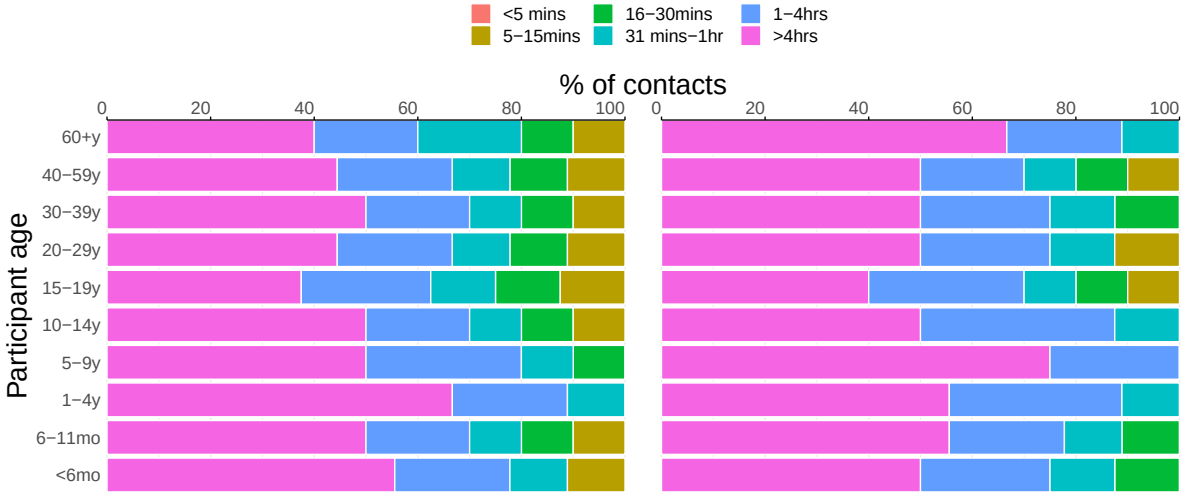

Figure 18: Duration of contact

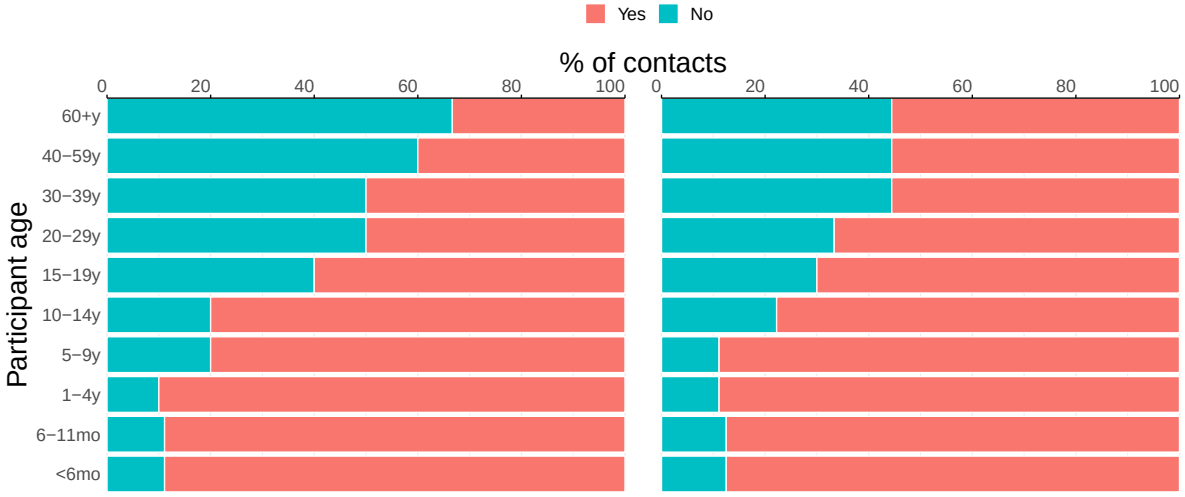

Figure 19: Type of contact

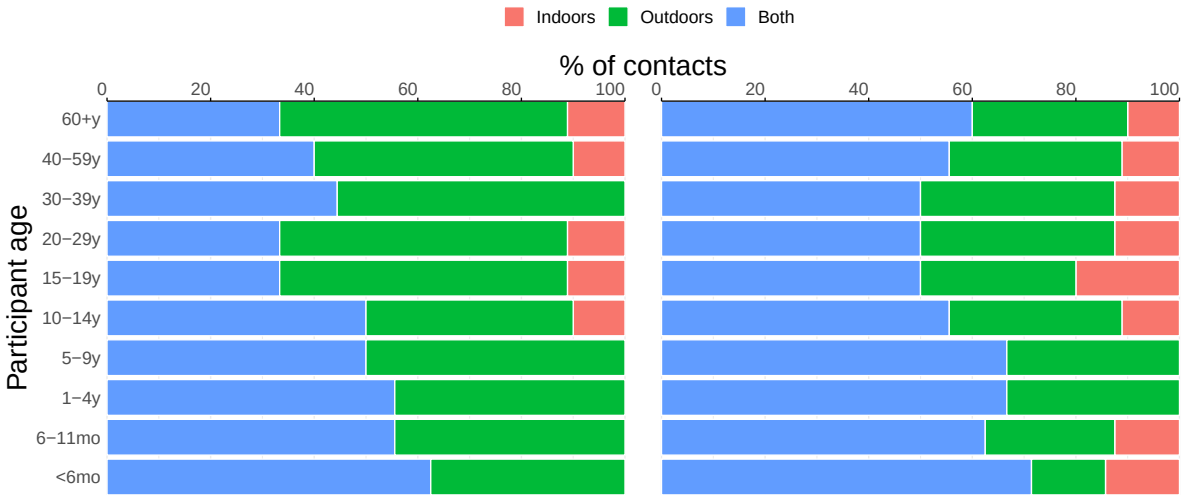

Figure 20: Location of contact