

Willingness to receive a future adult tuberculosis vaccine in Lusaka, Zambia: Perspectives from community members and healthcare workers

Andrew D Kerkhoff¹, Jake M Pry², Mwiza Haambokoma³, Noelle Le Tourneau⁴, Sandra S Simbeza³, Bertha Shamoya³, Nelly Zulu³, Herbert Nyirenda³, Evelyn Kundu-Ng'andu³, Kombatende Sikombe³, Rupali J Limaye, Anjali Sharma³

¹Division of HIV, Infectious Diseases and Global Medicine, University of California San Francisco, San Francisco, California, USA; ²University of California, Davis, Davis, California, USA; ³Centre for Infectious Disease Research in Zambia, Lusaka, Zambia; ⁴Washington University in St. Louis, Saint Louis, Missouri, USA; ⁵International Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, USA

Background: One or more new adult TB vaccines could become available in the next 5-7 years. To assess willingness to receive a new TB vaccine, we conducted a household- and facility-based survey among adult community members and healthcare workers (HCWs), respectively, in Lusaka, Zambia.

Methods: Community members were enrolled from randomly selected households (1 per household) within 4 communities with the highest rates of COVID-19 non-vaccination in Lusaka, while HCWs were recruited from 10 public health centers. Mixed-effects adjusted Poisson regression was used to estimate the marginal probability of participants' intent to get a new adult TB vaccine upon availability and identify the most trustworthy vaccine sources.

Results: We enrolled 499 participants: 395 community members (median age: 30 years, 52.7% female, 10.9% self-reported HIV-positive, 66.6% with 0 or 1 COVID-19 vaccine doses) and 104 HCWs (29.8% with 0 or 1 COVID-19 vaccine dose). The adjusted probability that community members and HCWs intended to definitely get a new TB vaccine upon availability was 76.9% (95% CI: 71.9-82.0) and 82.6% (95% CI: 71.5-93.6), respectively. Only perceived TB risk was independently associated with an intention to get a new TB vaccine, ranging from 49.5% (95% CI: 22.6-76.5) to 82.4% (95% CI: 77.6-87.2) among those not at all concerned to very concerned about TB, respectively (Table). The most trusted sources for vaccines were the Zambian Ministry of Health (87.6%), HCWs (68.2%), and the government (53.8%).

Conclusion: High intentions to receive a future TB vaccine among community members and HCWs were strongly tied to risk perception, emphasizing the need to clearly communicate TB risks and vaccination benefits upon availability. In anticipation of new TB vaccines, it is crucial to keep governments informed and to educate healthcare workers about upcoming vaccine options, ensuring they are well-prepared to serve as advocates and trusted sources of information.

Funding Sources

This research was supported by Johnson & Johnson. The funders had no role in study design, data collection, or analysis.

Conflicts of Interest

None



Table. Adjusted probability for intent to definitely get a future TB vaccine upon availability. Participants were asked to assume the vaccine would be free of charge, recommended by the Ministry of Health for all adults, and recommended by a doctor.

Factor	Level	Adjusted probability (%)	95% CI	
Age	18-24 years	77.2%	66.0%	79.3%
	25-29 years	83.7%	73.2%	94.3%
	30-34 years	77.6%	69.6%	85.7%
	35-44 years	76.8%	67.8%	85.8%
	45-54 years	74.4%	63.3%	85.5%
	55+ years	77.4%	66.3%	88.5%
Sex at birth	Male	75.3%	68.5%	82.1%
	Female	80.6%	76.0%	85.2%
Marital status	Single	81.8%	74.5%	89.0%
	Stable relationship, not married	77.5%	62.1%	92.9%
	Co-cohabiting/Married	74.2%	68.5%	79.9%
	Divorced/Separated	79.1%	63.7%	94.4%
	Widowed	83.5%	67.6%	99.4%
Educational attainment	Less than secondary school	78.5%	63.7%	93.4%
	Some secondary school	82.6%	74.2%	91.1%
	Completed secondary school	76.8%	72.1%	81.5%
	Post-secondary education	75.7%	66.8%	84.7%
Employment status	Unemployed	77.3%	70.2%	84.4%
	Housewife/Caregiver	70.8%	58.7%	82.9%
	Casual worker/Piece work	77.8%	62.8%	92.8%
	Self-employed/Business	76.9%	70.4%	83.4%
	Formal employee	82.1%	73.4%	90.9%
	Student	72.2%	58.5%	85.9%
	Retired/Volunteer/Other	83.2%	73.8%	92.6%
HCW status	Community Member	76.9%	71.9%	82.0%
	Healthcare Worker	82.6%	71.5%	93.6%
HIV status	HIV negative	76.4%	72.1%	80.7%
	HIV positive	86.2%	77.2%	95.2%
	HIV status unknown	81.4%	72.5%	90.2%
Self-perceived risk of TB disease	Not at all concerned	49.5%	22.6%	76.5%
	A little concerned	57.0%	39.6%	74.4%
	Moderately concerned	75.5%	67.3%	83.8%
	Very concerned	82.4%	77.6%	87.2%
Number of COVID-19 doses	0	81.8%	74.1%	89.6%
	1	72.2%	62.4%	82.1%
	2+	79.3%	75.3%	83.3%

