Background: Few studies have assessed life expectancy of patients with tuberculosis (TB) against a comparable background population, particularly in low-income, high incidence settings. This study aimed to estimate the life expectancy (LE) of patients with TB in the West African country Guinea-Bissau and compare it with the LE of the background population.

Methods: This study used data from the Bandim TB cohort from 2004-2020 as well as census data from the capital of Guinea-Bissau. LE was estimated using a bootstrapped Kaplan-Meier survival analysis for patients with TB and the background population, stratifying by age of entry and various patient subgroups. The analysis was further stratified by diagnosis period and length of schooling, an indicator of socioeconomic status, to assess their influence on LE. A sensitivity analysis was performed assuming death at loss to follow-up.

Results: The analysis included 2,278 patients and a background population of 169,760 individuals. Overall median LE among 30-year-old patients with TB was 10.7 years (95% CI: 8.7-12.6), compared with 35.8 (95% CI: 35.1-36.5) in the background population. LE was shorter in HIV-infected patients and those who had unsuccessful treatment outcome; however, even among those who were both uninfected with HIV and experienced successful treatment outcome, LE was 20% shorter than in the background population. Longer schooling appeared to decrease mortality.

Conclusions: TB substantially shortens LE. This effect is present even in patients who are uninfected with HIV and who have successful treatment outcome.
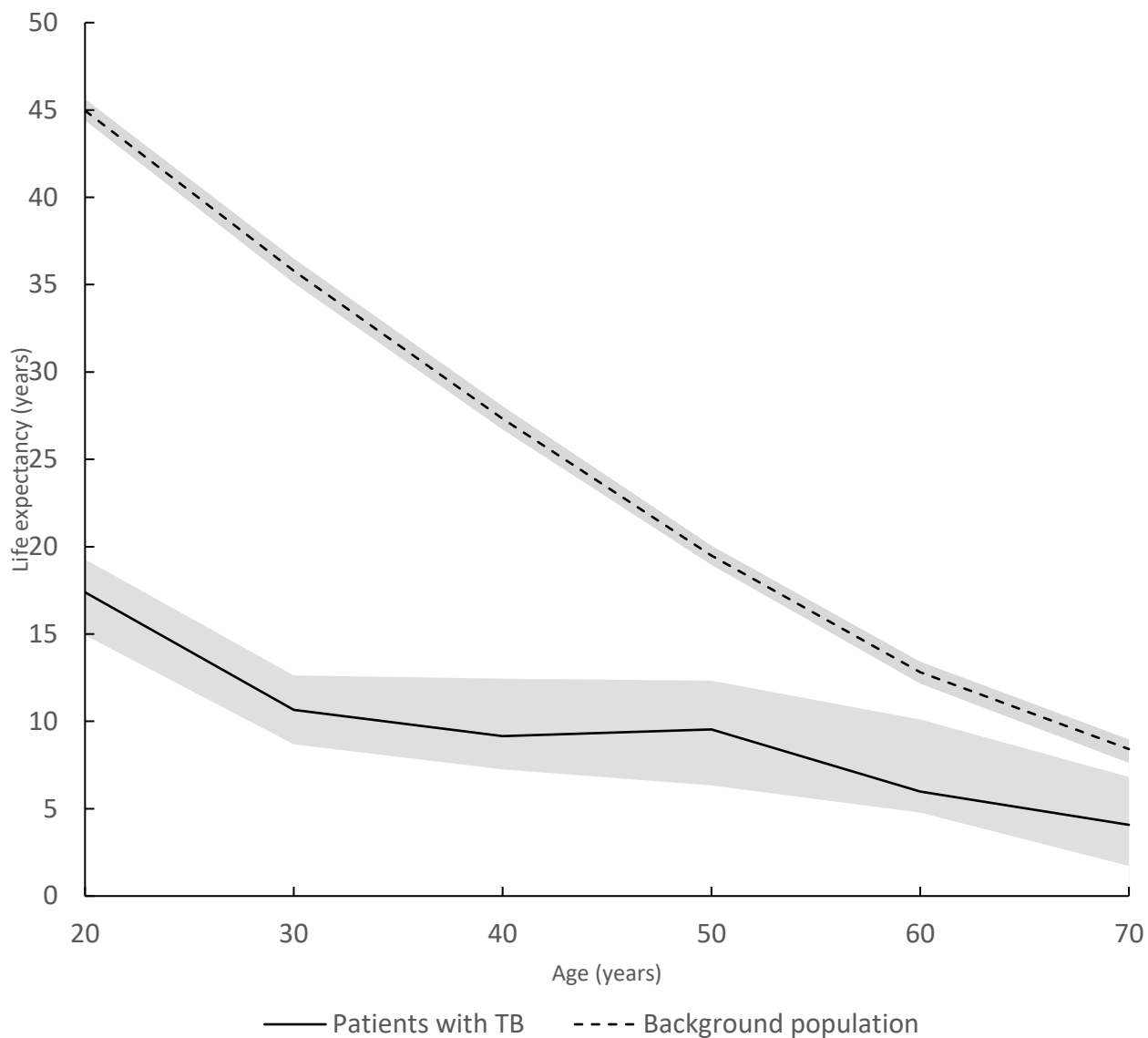
Figure 1. Remaining life expectancy in years by age of entry for background population and patients with pulmonary tuberculosis. Shaded areas are 95% confidence intervals.

Table 1. Remaining life expectancy in years by age of entry and different subgroups among patients with pulmonary tuberculosis.

		20-year-olds, LE (CI95%)	30-year-olds, LE (CI95%)	40-year-olds, LE (CI95%)
Overall (2,307)		17.4 (14.9 - 19.3)	10.7 (8.7 - 12.7)	9.2 (7.4 - 12.6)
Sex				
	Females (1,511)	13.6 (10.5 - 18.1)	8.7 (6.3 - 12.2)	10.5 (6.2 - 15.7)
	Males (796)	18.8 (16.8 - 21.7)	11.6 (9.0 - 14.1)	9.0 (7.1 - 13.2)
Smear-status				
	Smear-positive (1,737)	19.2 (17.6 - 21.7)	11.7 (9.3 - 14.6)	10.8 (8.4 - 14.8)
	Smear-negative (570)	10.9 (4.2 - 14.9)	6.8 (4.6 - 11.3)	7.4 (3.7 - 11.9)
HIV-status				
	HIV-1 (358)	0.5 (0.4 - 10.3)	4.2 (2.6 - 6.3)	3.2 (2.2 - 7.8)
	HIV-2 (122)	4.2 (0.8 - 18.1)	4.9 (3.2 - 10.5)	9.2 (0.5 - 20.5)
	HIV-1/2 (60)	8.9 (5.5 - 21.7)	6.9 (1.2 - 14.6)	3.3 (1.3 - 14.7)
	Uninfected (1,483)	28.7 (24.6 - 33.5)	20.9 (16.5 - 25.7)	14.2 (11.2 - 21.8)
	Unknown (284)	17.8 (9.5 - 23.8)	9.4 (3.3 - 17.4)	7.4 (2.5 - 10.8)
TBscore, severity class				
	SC-I (148)	24.2 (15.4 - 51.7)	14.2 (5.4 - 41.7)	7.8 (3.5 - 31.9)
	SC-II (1,183)	21.3 (17.8 - 28.7)	13.9 (10.4 - 23.2)	16.1 (12.6 - 20.8)
	SC-III (717)	11.2 (8.8 - 14.7)	7.5 (4.5 - 10.7)	6.6 (3.3 - 9.9)
	SC-IV (77)	8.2 (3.0 - 17.6)	6.8 (0.1 - 12.1)	0.5 (0.1 - 7.5)
Treatment outcome				
	Successful (1,703)	24.1 (21.4 - 28.7)	17.0 (12.7 - 21.1)	13.8 (10.5 - 19.5)
	Successful and HIV-uninfected (1,152)	34.1 (31.1 - 43.7)	28.7 (22.0 - 34.3)	20.0 (13.5 - 25.8)
	Unsuccessful (604)	8.0 (4.0 - 10.5)	4.5 (2.8 - 7.5)	2.9 (1.8 - 7.1)
Inclusion period				
	2004-2006 (502)	13.9 (9.3 - 18.9)	9.2 (4.9 - 13.8)	11.8 (7.1 - 17.7)
	2007-2009 (386)	17.9 (13.5 - 23.9)	11.9 (7.4 - 17.8)	8.7 (3.9 - 14.2)
	2010-2012 (404)	18.7 (11.8 - 26.2)	11.6 (8.4 - 19.0)	9.0 (2.8 - 23.1)
	2013-2015 (426)	20.5 (16.1 - 29.5)	11.3 (7.6 - 20.5)	10.5 (2.6 - 21.0)
	2016-2019 (589)	13.4 (8.6 - 19.4)	8.3 (4.7 - 14.6)	6.2 (2.8 - 14.1)
Schooling				
	No schooling (498)	10.7 (2.4 - 20.1)	7.5 (3.4 - 11.9)	6.2 (2.6 - 11.2)
	1-11 years of schooling (1,593)	17.6 (14.9 - 19.9)	11.2 (8.4 - 13.9)	10.8 (7.8 - 16.3)

	12+ years of schooling (216)	21.4 (16.8 - 34.0)	17.0 (7.8 - 29.9)	8.5 (1.4 - 19.9)
Lifestyle indicators				
	Non-smokers (1,798)	17.5 (14.9 - 19.5)	10.5 (8.4 - 12.8)	9.0 (7.1 - 12.9)
	Smokers (499)	18.4 (14.1 - 23.8)	11.3 (6.8 - 15.8)	10.8 (5.5 - 18.7)
	Patients without alcohol addiction (560)	21.2 (15.0 - 25.8)	12.8 (8.1 - 17.5)	8.6 (5.6 - 14.2)
	Patients with alcohol addiction (201)	18.7 (12.4 - 29.5)	8.7 (2.4 - 19.5)	10.9 (1.4 - 26.0)

LE=life expectancy; HIV=human immunodeficiency virus; SC=severity class. Alcohol addiction was defined as drinking alcohol every day (self-reported).