

## Supplementary material

**Table S1. Proportion of missing data, for the variables included in the multivariable analyses**

Variable	N	%
Stigma	1	0.4
Prior unspecific treatment	1	0.4
Did you think you had TB?	1	0.4
Do you know what TB is?	1	0.4
Chronic diseases	2	0.8
After first visit, did you seek treatment from somewhere else?	5	2.0
First visit with GP	6	2.4
First visit at hospital	6	2.4
Age	7	2.8
Do you know how TB is diagnosed?	13	5.1
Pay for transportation to reach the health centre	21	8.3
Patient Delay	22	8.7
Health system delay	22	8.7
Diagnostic delay	28	11.1
Treatment delay	34	13.4
Did you have repeated visits with different providers in a different facility?	35	13.8
Did you have repeated visits with the same provider?	35	13.8
Total delay	45	17.8
Close distance of the first visit place	55	21.7

**Table S2. Median delays from literature and prevalence of delay in the present study**

Delay/ Prevalence of delay	Pezzotti et al. 2015 (Italy) <sup>13</sup>	Saldana et al., 2013 (UK) <sup>19</sup>	Tattevin et al., 2012 (France) <sup>24</sup>	Farah et al., 2006 (Norway) <sup>25</sup>	Jurcev- Savicevic et al. 2013 (Croatia) <sup>276</sup>
Median PD (days)	31	29	14	28	
Prevalence of PD*	64.5	50.2	59.7	50.2	
Median HSD (days)	15	30	-	33	15
Prevalence of HSD*	40.9	29.3	-	25.3	40.9
Median TOTD (days)	-	62	-	63	-
Prevalence of TOTD*	-	42.3	-	40.9	-

\*Prevalence of delay that would have been retrieved in our study, by applying median values from other studies

**Table S3. Correctness of patients' knowledge and symptoms recognition stratified for gender and country of birth**

Characteristics	Italian-born % (N)	Foreign-born % (N)	p*	Males % (N)	Females % (N)	p*
<b>Do you know what TB is? (n=252)</b>						
Yes	81.2 (91)	56.4 (79)	<b>&lt;0.001</b>	65.8 (106)	70.3 (64)	0.465
No	18.8 (21)	43.6 (61)		34.2 (55)	29.7 (27)	
<b>Do you think TB is a serious disease? (n=250)</b>						
Yes	67.9 (76)	57.2 (79)	<b>0.029</b>	63.9 (101)	58.7 (54)	0.309
No	17.9 (20)	14.5 (20)		13.3 (21)	20.7 (19)	
Don't know	14.3 (16)	28.3 (39)		22.8 (36)	20.7 (19)	
<b>What causes TB? (n=248)</b>						
Infection	77.5 (86)	43.8 (60)	<b>&lt;0.001</b>	61.1 (96)	54.9 (50)	0.491
Punishment	1.8 (2)	0.7 (1)		1.3 (2)	1.1 (1)	
Unavoidable	0.0 (0)	1.5 (2)		1.3 (2)	0.0 (0)	
Don't know	20.7 (23)	54.0 (74)		36.3 (57)	44.0 (40)	
<b>What are the symptoms TB? (n=253)</b>						
Cough for more than 3 weeks	58.0 (65)	49.6 (70)	<b>0.105</b>	54.7 (88)	51.1 (47)	0.890
Sputum with blood	13.4 (15)	9.2 (13)		11.2 (18)	10.9 (10)	
Fever	15.2 (17)	14.2 (20)		13.7 (22)	16.3 (15)	
Weight loss	2.7 (3)	3.5 (5)		3.7 (6)	2.2 (2)	
Don't know	10.7 (12)	23.4 (33)		16.8 (27)	19.7 (18)	
<b>How a person can get TB? (n=242)</b>						
Through germs present in air droplets expelled in the cough	69.4 (72)	37.7 (52)	<b>&lt;0.001</b>	55.8 (87)	43.0 (37)	0.147
Sharing utensils and objects with an infected person	3.8 (4)	7.2 (10)		5.8 (9)	5.8 (5)	
Don't know	26.9 (28)	55.1 (76)		38.5 (60)	51.2 (44)	
<b>How TB is diagnosed? (n=240)</b>						
Through sputum examination	39.0 (39)	17.1 (24)	<b>&lt;0.001</b>	23.7 (37)	31.0 (26)	0.409
Through X-ray	32.0 (32)	25.7 (36)		28.2 (44)	28.6 (24)	
Don't know	29.0 (29)	57.1 (80)		48.1 (75)	40.4 (34)	
<b>Can TB be cured? (n=249)</b>						
Yes	93.6 (103)	76.3 (106)	<b>0.001</b>	84.8 (134)	82.4 (75)	0.858
No	0.0 (0)	2.2 (3)		1.3 (2)	1.1 (1)	
Don't know	6.4 (7)	21.6 (30)		13.9 (22)	16.5 (15)	
<b>Can TB require a longer treatment to be cured as for multidrug resistant forms? (n=251)</b>						

Yes	51.8 (58)	34.5 (48)	<b>0.016</b>	41.0 (66)	44.4 (40)	0.868
No	10.7 (12)	18.7 (26)		15.5 (25)	14.4 (13)	
Don't know	37.5 (42)	46.8 (65)		43.5 (70)	41.2 (37)	
<b>Which symptoms made you seek healthcare?</b>						
Cough for more than 3 weeks (n=253)						
Yes	57.1 (64)	72.3 (102)	<b>0.011</b>	65.2 (105)	66.3 (61)	0.861
No	42.9 (48)	27.7 (39)		34.8 (56)	33.7 (31)	
Sputum with blood (n=253)						
Yes	8.0 (9)	17.7 (25)	<b>0.025</b>	14.3 (23)	12.0 (11)	0.601
No	92.0 (103)	82.3 (116)		85.7 (138)	88.0 (81)	
Fever (n=253)						
Yes	50.9 (57)	50.4 (71)	0.932	50.3 (81)	51.1 (47)	0.905
No	49.1 (55)	49.6 (70)		49.7 (80)	48.9 (45)	
Weight loss (n=253)						
Yes	28.6 (32)	44.7 (63)	<b>0.009</b>	44.7 (72)	25.0 (23)	<b>0.002</b>
No	71.4 (80)	55.3 (78)		55.3 (89)	75.0 (69)	
Tiredness/weakness (n=253)						
Yes	38.4 (43)	52.5 (74)	<b>0.026</b>	50.9 (82)	38.0 (35)	<b>0.048</b>
No	61.1 (69)	47.5 (67)		49.1 (79)	62.0 (57)	
Dizziness (n=253)						
Yes	4.5 (5)	6.4 (9)	0.507	6.8 (11)	3.3 (3)	0.232
No	95.5 (107)	93.6 (132)		93.2 (150)	96.7 (89)	
Chest pain (n=253)						
Yes	17.0 (19)	30.5 (43)	<b>0.013</b>	28.6 (46)	17.4 (16)	<b>0.047</b>
No	83.0 (93)	69.5 (98)		71.4 (115)	82.6 (76)	
Night sweat (n=253)						
Yes	20.5 (23)	30.5 (43)	0.073	31.1 (50)	17.4 (16)	<b>0.017</b>
No	79.5 (89)	69.5 (98)		68.9 (111)	82.6 (76)	
<b>Did you think you had TB? (n=252)</b>						
Yes	5.4 (6)	11.4 (16)	0.090	11.8 (19)	3.3 (3)	<b>0.022</b>
No	94.6 (106)	88.6 (124)		88.2 (142)	96.7 (88)	
<b>Factors for delay in seeking care</b>						
Not aware of symptoms (n=253)						
Yes	38.4 (43)	43.3 (61)	0.434	57.1 (92)	62.0 (57)	0.454

No	61.6 (69)	56.7 (80)		42.9 (69)	38.0 (35)	
Fear of rejection/losing job (n=253)						
Yes	2.7 (3)	6.4 (9)	0.169	5.6 (9)	3.3 (3)	0.402
No	97.3 (109)	93.6 (132)		94.4 (152)	96.7 (89)	
Costs (n=253)						
Yes	0.0 (0)	9.2 (13)	<b>0.001</b>	5.6 (9)	4.3 (4)	0.667
No	100.0 (112)	90.8 (128)		94.4 (152)	95.7 (88)	
Lack of time (n=253)						
Yes	5.4 (6)	7.1 (10)	0.573	5.6 (9)	7.6 (7)	0.526
No	94.6 (106)	92.9 (131)		94.4 (152)	92.4 (85)	
Distance to health centre (n=253)						
Yes	0.9 (1)	2.8 (4)	0.270	2.5 (4)	1.1 (1)	0.442
No	99.1 (111)	97.2 (137)		97.5 (157)	98.9 (91)	
Lack of transportation (n=253)						
Yes	0.9 (1)	0.7 (1)	0.870	0.0 (0)	2.2 (2)	0.060
No	99.1 (111)	99.3 (140)		100.0 (161)	97.8 (90)	
Previous non-satisfactory experience with the health system (n=253)						
Yes	1.8 (2)	2.1 (3)	0.846	1.9 (3)	2.2 (2)	0.864
No	98.2 (110)	97.9 (138)		98.1 (158)	97.8 (90)	

\*p-values <0.05 are indicated in bold

TB: tuberculosis

**Table S4. Attitude towards TB stratified for gender and country of birth**

	Italian-born % (N)	Foreign-born % (N)	p*	Males % (N)	Females % (N)	p*
<b>Should people with TB disclose their illness to other people? (n=252)</b>						
Yes	70.5 (79)	47.1 (66)	<b>0.001</b>	53.1 (85)	65.2 (60)	<b>0.040</b>
No	8.9 (10)	19.3 (27)		18.8 (30)	7.6 (7)	
Don't know	20.5 (23)	33.6 (47)		28.1 (45)	27.2 (25)	
<b>Who do you think is more likely to get TB, men or women? (n=252)</b>						
Men	12.5 (14)	15.0 (21)	0.305	21.2 (34)	1.1 (1)	<b>&lt;0.001</b>
Women	5.4 (6)	10.0 (14)		4.4 (7)	14.1 (13)	
Don't know	82.1 (92)	75.0 (105)		74.9 (119)	84.8 (78)	
<b>How did you feel when you found out that you had TB? (n=253)</b>						
Scared	37.5 (42)	45.4 (64)	0.376	36.6 (59)	51.1 (47)	0.164
Depressed	20.5 (23)	14.2 (20)		18.0 (29)	15.2 (14)	
Didn't believe (denial)	29.5 (33)	31.2 (44)		33.5 (54)	25.0 (23)	
Other	12.5 (14)	9.2 (13)		11.8 (19)	8.7 (8)	
<b>Did you inform your friends/ family that you had TB? (n=248)</b>						
Yes	90.9 (100)	55.1 (76)	<b>&lt;0.001</b>	61.4 (97)	87.8 (79)	<b>&lt;0.001</b>
No	9.1 (10)	44.9 (62)		38.6 (61)	12.2 (11)	
<b>Have your relationships with your friends/ family changed since finding out you have TB? (n=245)</b>						
Yes	22.0 (24)	14.7 (20)	0.138	15.4 (24)	22.5 (20)	0.165
No	78.0 (85)	85.3 (116)		84.6 (132)	77.5 (69)	
<b>If yes, how? (n=43)</b>						
Improved	41.7 (10)	10.5 (2)	<b>0.024</b>	26.1 (6)	30.0 (6)	0.775
Worsened	58.3 (14)	89.5 (17)		73.9 (17)	70.0 (14)	
<b>Are people with TB discriminated in the community? (n=249)</b>						
Yes	46.4 (51)	41.0 (57)	<b>0.002</b>	40.3 (64)	48.9 (44)	0.386
No	33.6 (37)	19.4 (27)		26.4 (42)	24.4 (22)	
Don't know	20.0 (22)	39.6 (55)		33.3 (53)	26.7 (24)	
<b>Among TB patients, are male or female patients more discriminated? (n=249)</b>						
Male	3.7 (4)	9.3 (13)	<b>0.027</b>	10.1 (16)	1.1 (1)	<b>&lt;0.001</b>
Female	2.85 (3)	8.6 (12)		2.5 (4)	12.1 (11)	
Don't know	93.6 (102)	82.1 (115)		87.3 (138)	86.8 (79)	

\*p-values <0.05 are indicated in bold

TB: tuberculosis

**Table S5. Risk analysis for DD (Univariate and logistic regression analysis)**

	<b>DD &gt;7 days %</b>	<b>OR 95%CI</b>	<b>p</b>	<b>aOR 95%CI</b>	<b>p</b>
<b>Foreign-born patients</b>					
Yes <sup>^</sup>	36.6	<b>1</b>	<b>&lt;0.001</b>	<b>1</b>	<b>0.024</b>
No	64.7	<b>0.32 (0.18 – 0.54)</b>		<b>0.48 (0.25 – 0.91)</b>	
<b>Chronic disease</b>					
Yes <sup>^</sup>	59.3	<b>1</b>	0.061	-	-
No	45.1	1.77 (0.97 – 3.24)			
<b>Gender</b>					
Female <sup>^</sup>	37.5	<b>1</b>	<b>0.008</b>	<b>1</b>	<b>&lt;0.001</b>
Male	55.9	<b>0.47 (0.27 – 0.83)</b>		<b>0.30 (0.15 – 0.58)</b>	
<b>First visit with GP</b>					
Yes <sup>^</sup>		<b>1</b>	<b>&lt;0.001</b>	-	-
No	71.2 40.5	<b>3.63 (1.95 – 6.77)</b>			
<b>First visit athospital</b>					
Yes <sup>^</sup>	36.1	<b>1</b>	<b>&lt;0.001</b>	<b>1</b>	<b>0.002</b>
No	67.0	<b>0.28 (0.16 – 0.49)</b>		<b>0.35 (0.18 – 0.67)</b>	
<b>After first visit, did you seek treatment from somewhere else?</b>					
Yes <sup>^</sup>	71.0	<b>1</b>	<b>&lt;0.001</b>	-	-
No	34.4	<b>4.67 (2.62 – 8.31)</b>			
<b>Cough more than 3 weeks</b>					
Yes <sup>^</sup>	44.2	<b>1</b>	<b>0.035</b>	<b>1</b>	<b>0.048</b>
No	59.0	<b>0.55 (0.32 – 0.96)</b>		<b>0.51 (0.27 – 0.99)</b>	
<b>Dizziness</b>					
Yes <sup>^</sup>	23.1	<b>1</b>	<b>0.051</b>	<b>1</b>	<b>0.039</b>
No	50.9	<b>0.28 (0.08 – 1.08)</b>		<b>0.21 (0.04 – 0.92)</b>	
<b>Prior unspecific treatment</b>					
Yes <sup>^</sup>	60.4	<b>1</b>	<b>&lt;0.001</b>	<b>1</b>	<b>0.002</b>
No	33.0	<b>3.11 (1.78 – 5.43)</b>		<b>2.85 (1.47 – 5.52)</b>	
<b>Did you have repeated visits with different providers in a different facility?</b>					
Yes <sup>^</sup>	66.3	<b>1</b>	<b>&lt;0.001</b>	-	-
No	37.6	<b>3.26 (1.82 – 5.86)</b>			

\*p-values <0.05 are indicated in bold

<sup>^</sup> reference category