

Supplementary File

Measuring Tuberculosis patient perceived quality of care in public and public- private mix settings in India- An instrument development and pilot validation study.

Table 1 Patient categories for qualitative interviews

Patient categories for In-depth interview	No's
Patients who initiated and continuing TB treatment in the Public health care facilities of NTEP Chennai	18
Patients who initiated and continuing TB treatment in the Public-Private Mix (PPM) health care facilities of Chennai	18
Patients who initiated treatment at Public health care facilities of NTEP Chennai to Public-Private Mix (PPM) health care facilities in Chennai	18
Patients who initiated treatment at Public-Private Mix (PPM) facilities in Chennai and further shifted to Public health care facilities of NTEP Chennai	18

Table 2 Content validation Table (¹)

Relevancy	Clarity
1- Not relevant	1 -No clarity
2- Item needs some revision	2- Item needs some revision
3 -Item relevant but require some revision	3- Item clear but require some revision
4 -High relevance	4 –Item clear

Table 3: Content Validity Index and Content Validity Ratio of the items

Items	Content Validity Index (CVI)		Content Validity Ratio (CVR)	Included /Not included
	Relevance	Clarity		
Q1	1	0.9	1	Included
Q2	0.9	0.7	1	Included
Q3	1	0.5	0.8	Included
Q4	1	0.9	0.8	Included
Q5	0.9	0.9	1	Included
Q6	0.8	0.7	0.8	Included
Q7	0.9	0.9	1	Included
Q8	0.9	0.9	1	Included
Q9	0.8	0.9	0.8	Included
Q10	1	1	1	Included
Q11	1	1	0.8	Included
Q12	1	1	1	Included
Q13	0.9	1	0.8	Included
Q14	1	1	1	Included
Q15	0.9	0.9	0.8	Included
Q16	0.7	0.8	0.4	Not included
Q17	0.7	0.6	0.6	Not included
Q18	0.8	0.7	0.6	Not included
Q19	0.8	0.8	0.8	Included
Q20	1	0.9	0.8	Included
Q21	0.5	0.5	0.8	Included
Q22	0.8	0.8	0.8	Included
Q23	1	1	0.8	Included
Q24	1	1	1	Included
Q25	1	1	1	Included
Q26	0.7	0.8	0.4	Not included
Q27	0.8	0.7	0.8	Included
Q28	0.6	0.8	0.6	Not included
Q29	0.8	0.8	0.4	Not included
Q30	0.9	0.9	0.8	Included
Q31	0.9	0.9	0.6	Not included
Q32	0.6	0.5	0	Not included

Table 4: Finalized domains and 32 items based on qualitative findings, content validation and cognitive interviews

Domain 1: TB Care Services	
The following questions pertained to the satisfaction level with the TB care services	
Item 1 (Q1)	How satisfied are you with the TB diagnostic services ? (Example: Sputum test, X-ray, other tests)
Item 2(Q2)	How satisfied are you with the TB treatment services ? (Example: TB drugs, doctor consultation, referral services)
Item 3(Q3)	How satisfied are you with the Follow-up services? (Example: reminding you about your next visit to the centre for collecting drug and sputum test).
Item 4(Q4)	How satisfied are you with the working hours of this centre?
Item 5(Q5)	How satisfied are you with the distance of this centre?
Item 6(Q6)	How satisfied are you with the waiting time spent? (to receive TB drugs, to consult the doctor)
Item 7(Q7)	How satisfied are you with contact screening services?
Domain 2: Attitude of the Health Care Provider	
The following questions indicated the patients' experiences with the health care provider.	
Item 1(Q8)	How often are you satisfied with the way the health care provider treats you?
Item 2(Q9)	How often does the health visitor respond to your queries ?
Item 3(Q10)	How often does the health visitor explain to you the importance of treatment?
Item 4(Q11)	How often do you feel discriminated by the care provider because you're affected by TB?
Item 5(Q12)	How often does the doctor spend sufficient time with you?
Item 6(Q13)	How often the health visitor does spent sufficient time with you?
Item 7(Q14)	How often do you feel that the care provider is rude to you?
Domain 3: Information given to the patient	
The following questions referred to the medical information provided to patients.	

Item 1(Q15)	How satisfied are you with the information given by the doctor on TB care services? (Example: cause, spread, prevention)
Item 2(Q16)	How satisfied are you with the information given by the doctor on TB care services? (Example: drug regimen, duration of treatment, curability, side effects)
Item 3(Q17)	How satisfied are you with the information given to you by the Health provider ? (Example: cause, spread, prevention)
Item 4(Q18)	How satisfied are you with the information given to you by the Health provider ? (Example: drug regimen, duration of treatment, curability, side effects)
Item 5(Q19)	How satisfied are you with the information given to you about the consequences of irregular treatment by the Health Provider? (Example: that discontinuation of TB drugs would sometimes lead to drug resistance).
Domain 4: Basic amenities in the center	
The following questions indicated basic amenities in the health facility.	
Item 1(Q20)	How would you rate the seating facility in this centre?
Item 2(Q21)	How would you rate the quality of drinking water available in this centre?
Item 3(Q22)	How would you rate the cleanliness of this centre?
Item 4(Q23)	How would you rate the toilet facility available in this centre?
Item 5(Q24)	How would you rate the injection room in this centre?
Domain 5: Affordability	
The following questions represented the expenditure incurred on TB treatment.	
Item 1(Q25)	How often have you spent money on doctor consultation ?
Item 2(Q26)	How often have you spent money on TB diagnostic tests?
Item 3(Q27)	How often have you spent money on the purchase of TB drugs ?
Item 4(Q28)	How often did you spend money to travel to a health facility?
Item 5(Q29)	How often was the incentive provided by the programme helpful?
Item 6(Q30)	How often you have to pay bribes for availing TB care services in this centre?
Item 7(31)	How often did the financial costs prevent you from going to the health facility?
Domain 6 Overall rating	
Item 32	Overall satisfaction with the facility

Table 5: Demographic profile of the respondents (TB patients) of the pilot validation

	N = 714 (%)
Type of facility	
Public	489 (68.5)
Public-Private Mix (PPM)	225 (31.5)
Mean Age and Standard Deviation (in years)	44.3 ± 14.5
Age Range (in years)	18 – 91
Gender	
Male	481 (67.4)
Female	233 (32.6)
Disease classification	
Pulmonary	555 (77.7)
Extra-pulmonary	159 (22.3)
Type of treatment	
Category I	539 (75.5)
Category II	140 (19.6)
MDR	27 (3.8)
XDR	8 (1.1)
Type of patients	
New	541 (75.8)
Treatment after default	53 (7.4)
Relapse	120 (16.8)

Table 6: Rotated component matrix of the factors obtained

Variable	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7	Factor8
q1	0.1903	0.0389	0.0211	0.5697*	-0.1382	-0.195	0.0576	0.0192
q2	0.0556	0.1808	0.1602	0.6363*	0.0368	-0.0988	0.1167	0.0809
q3	0.0204	0.1045	0.3062	0.436*	0.0232	-0.1389	0.052	0.1044

q4	-0.0177	0.113	0.0869	0.316	-0.0372	-0.2064	0.3478	0.037
q5	-0.0217	-0.0028	0.0186	0.0701	-0.0095	-0.0645	0.6361*	-0.1091
q6	-0.0258	0.1303	0.095	0.2651	0.079	-0.0609	0.3697	0.0206
q7	0.1958	0.0478	0.0822	0.1022	-0.1036	0.0217	0.029	0.0038
q8	0.0781	0.1709	0.5976*	0.2504	-0.0015	-0.1465	0.0756	-0.055
q9	-0.0034	0.086	0.6814*	0.0639	0.0552	0.0626	0.0174	-0.1109
q10	-0.0612	0.176	0.4962*	0.0478	0.0566	-0.0242	-0.0135	0.1357
q11	0.0031	-0.1038	-0.2293	0.0059	-0.0513	0.2396	-0.1695	-0.0322
q12	0.5559*	0.0077	0.1751	0.0344	0.1681	-0.03	-0.0702	0.1503
q13	0.0273	0.1069	0.5356*	0.0272	0.0422	-0.1032	0.0269	-0.104
q14	-0.0089	0.0503	-0.0834	-0.0817	0.0096	0.5834*	-0.0128	0.026
q15	0.8957*	0.1865	-0.0401	0.1303	0.1028	-0.0503	0.0483	0.1623
q16	0.9006*	0.1554	-0.0277	0.0544	0.1133	0.0003	-0.0523	0.1381
q17	0.1578	0.8277*	0.1878	0.1234	0.007	0.0716	0.059	0.0823
q18	0.1372	0.8271*	0.2158	0.1267	0.0194	0.0686	0.0428	0.0488
q19	0.0796	0.4239*	0.1834	0.0881	0.0444	-0.0735	0.0619	0.134
q20	0.0628	0.028	0.0388	0.0941	0.008	-0.1324	0.0911	0.1046
q21	0.0583	0.077	-0.0183	0.034	0.0457	0.022	-0.0826	0.5197*
q22	-0.0031	0.0087	0.0383	0.0982	-0.0507	-0.014	-0.0422	0.119
q23	0.1949	0.0422	-0.0955	0.0962	-0.0034	-0.0055	-0.0262	0.579*
q24	0.1592	0.0753	-0.0735	-0.0522	-0.2397	0.1131	0.0132	0.3256
q25	0.1351	0.0289	0.0453	0.0588	0.6379*	0	0.0142	-0.0059
q26	0.0778	0.0245	0.0685	-0.1297	0.6614*	0.0605	0.0009	0.0201
q27	-0.0466	-0.179	0.0019	-0.1204	-0.0221	0.0698	-0.0501	0.013
q28	-0.0177	-0.0766	0.0333	0.0232	0.0046	0.004	-0.4276	0.1494
q29	0.0694	-0.0134	-0.0482	0.043	0.1769	0.0027	0.0055	-0.0019
q30	-0.0449	0.0291	-0.01	-0.2916	0.056	0.6255*	-0.1561	0.0409
q31	-0.0326	-0.0053	-0.0187	-0.0562	0.0228	0.0596	-0.065	-0.0686

The bold values show the extracted components. Principal factor analysis used for extraction. Varimax with Kaiser Normalization used for Y Rotation method. The correlation (t-value > 1.96) between items and factors which was highly significant with values > 0.40 were categorized into Factors.

Table 7 : Test-Retest Reliability using Intra-class correlation coefficient (ICC) for the individual items

Factors	Items	ICC (95% confidence interval)	p-value
Satisfaction with doctor's care	q12	0.80 (0.64 , 0.89)	<0.001
	q15	0.83 (0.70 , 0.91)	<0.001
	q16	0.85 (0.74 , 0.92)	<0.001
Satisfaction with the information given by the health care provider	q17	0.53 (0.17 , 0.74)	0.005
	q18	0.69 (0.45 , 0.83)	<0.001
	q19	0.74 (0.54 , 0.85)	<0.001
Satisfaction with the health visitor	q8	0.71 (0.48 , 0.83)	<0.001
	q9	0.54 (0.17 , 0.74)	0.005
	q10	0.70 (0.46 , 0.83)	<0.001
	q13	0.20 (-0.42 , 0.55)	0.22
Satisfaction with the TB services	q1	0.82 (0.68 , 0.90)	<0.001
	q2	0.63 (0.34 , 0.79)	<0.001
	q3	0.66 (0.40 , 0.81)	<0.001

Table 8: Test-Retest Reliability using Intra-class correlation coefficient (ICC)

Factor	ICC (95% confidence interval)	p-value
Factor 1	0.83 (0.70, 0.91)	<0.001
Factor 2	0.68 (0.44, 0.82)	<0.001
Factor 3	0.63 (0.35, 0.79)	<0.001
Factor 4	0.74 (0.54, 0.86)	<0.001
Global (Overall) Score	0.76 (0.57, 0.87)	<0.001

Supplementary References

1) Ishanuddin N.M. et al. (2021) Design and Implementation Content Validity Study: Development of an Instrument for Measuring Consumers' Perception of Automatic Emergency Braking (AEB). In: Stanton N. (Eds) Advances in Human Aspects of Transportation. AHFE 2021. Lecture Notes in Networks and Systems, vol 270. Springer, Cham. https://doi.org/10.1007/978-3-030-80012-3_44