

User Experiences with the Sangaati Voice Bot: findings from telephonic interviews with Persons with TB and their caregivers

Background

Despite progress in TB prevention and treatment, challenges like misconceptions, lack of timely information, and difficulties in engaging with patients and caregivers remain. Regional languages or dialects, as well as personalised interactions, are crucial to overcoming these challenges. KHPT, with support from ACT philanthropy, developed a voice bot, also called the “application” or “App” in this report, aiming to provide personalised responses and engage users through lively conversations. The assumption is that the voice bot would improve awareness, treatment adherence, and eventually the treatment outcomes. KHPT implemented the adoption of the bot in 11 districts of Karnataka, and before this can be scaled up based on findings from a study. Now, to assess the user experience of the Bot, a user experience study was conducted.

Objective

The objective of the study was to measure the level of satisfaction in using the bot in terms of providing awareness about symptoms, side-effects and their management, nutritional need, and awareness about DBT-NPY among TB patients who are exposed to the bot.

Methodology

Cross-sectional sample of Persons with TB (PwTB) was selected from the list of PwTBs who the KHPT staff in the field confirmed to have downloaded the application. Telephonic interviews were conducted with a sample of PwTBs by 3 Field Investigators based out of Bengaluru. About 215 PwTBs were sampled, assuming that 60% will be satisfied with the use of the bot, and with a one-sided test at

95% confidence level, further inflated by 40% for any non-response. The interviews were conducted with DS TB (pulmonary) patients who were initiated on treatment from May 1st to 31st of August, 2025, and were on treatment. The interviews were conducted at least one month after downloading the bot. Verbal informed consent was obtained before the interviews.

Results

Younger users (<24 years) showed strong initial adoption of the Sangaati voice bot, with 92.6% using the app after download and 32% reporting weekly use (Fig 1). They primarily received download support from hospital staff (44.4%) and NGO/CBO staff (33.3%). Comprehension was relatively high, with 44.4% fully understanding the messages and 57.9% partially (Fig 2). Trust (74.3%) and confidence in asking questions (72.4%) were strong, and their primary information needs focused on TB symptoms (79.6%), prevention (77.6%), and transmission (70.4%).

Most frequently accessed content included TB symptoms (51.9%), spread (59.3%), and prevention (33.3%). Satisfaction and willingness to recommend the voice bot were high among younger users, with 63% satisfied and 66.7% likely to recommend it to other TB patients. Barriers to weekly use were mostly motivational, such as improved health (47.4%) or forgetfulness (15.8%), rather than technical issues (Table 1).

Adults aged 25–59 represented the largest group and showed similar adoption (92.8% used the

app post-download) but lower weekly usage (19.9%) (Fig 1). They relied heavily on NGO/CBO staff (53.9%) for downloading support (Fig 2). Comprehension was moderate, with 32.2% fully understanding messages and 57.9% partially (Fig 2). Trust (74.3%) and confidence in asking questions (72.4%) were strong, and their primary information needs focused on TB symptoms (79.6%), prevention (77.6%), and transmission (70.4%).

Weekly non-use was mainly due to forgetfulness (27.4%), being busy (26.6%), or feeling healthy (37.9%). Older adults (60+) had slightly lower overall use (88.9%), comprehension (16.7% fully understood), trust (63.9%), and confidence (66.7%), with forgetfulness (34.5%) and difficulty understanding the app (20.7%) being more prominent barriers. Satisfaction and recommendation were lower in this group, highlighting the need for targeted reminders and simplified messaging to improve engagement (Table 1).

Fig 1: Used the application after downloading

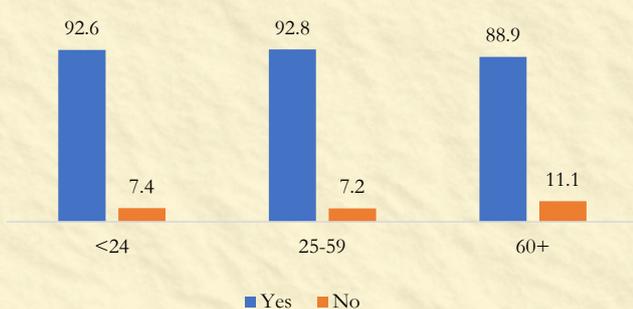
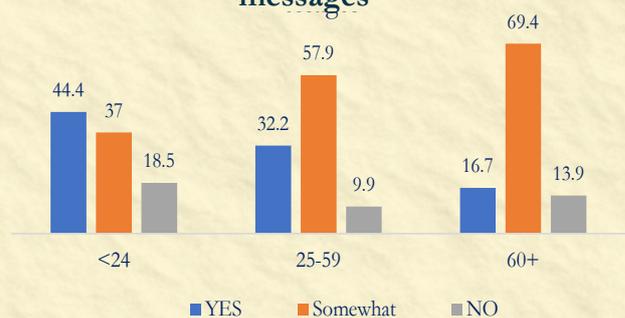


Fig 2: Comprehension in understanding the messages



The voice bot demonstrated strong acceptability and trust among both male and female TB patients, with over 92% of users having used the application at least once after download. Download assistance was primarily provided by NGO/CBO staff (49.8%), followed by hospital staff (37.2%) and ASHA workers (13%). Male respondents were more likely to receive help from NGO/CBO staff (56.2%), while female respondents relied more on hospital staff (49.3%) (Table 2).

Despite high initial uptake, weekly usage remains low (21.7%), with no substantial gender difference. Primary reasons for non-use include improved health (37.2%), forgetfulness (27.3%), and being busy with work or family (22.1%). Technical issues, such as a lack of internet or app malfunction, were minimal (Table 2).

Understanding of voice messages was generally high, with 88.4% of respondents understanding fully or somewhat, though female respondents reported slightly better comprehension than males (43.5% fully understand vs. 25.3% among males). Listening behaviour showed that only a quarter always listened to the full message,

while 39.5% listened most times (Table 2).

Trust in the voice bot was strong (72.6% overall), with female respondents slightly more trusting than males. The majority (84.2%) found the voice tone friendly and understandable, and confidence in asking TB-related questions after listening was reported by 72.6% of respondents (Table 2).

Information-seeking patterns indicate that users primarily focused on signs and symptoms (75.3%), TB transmission (69.2%), and ways of prevention (70.6%), with other topics such as treatment side effects (24.8%), infection control (20.1%), and nutrition (12.1%) addressed less frequently. Very few users inquired about social support schemes or stigma counselling (Table 2).

Satisfaction and recommendation rates were moderately high: 70% of respondents were satisfied with the bot, with expectedly slightly lower satisfaction among persons aged 60+ years (56%) (fig 3a). Neutral responses were common, particularly among males (24.8%), indicating potential areas to enhance engagement and perceived value (Fig 3b).

Fig 3a: Overall satisfaction with the voice bot service (by age group)

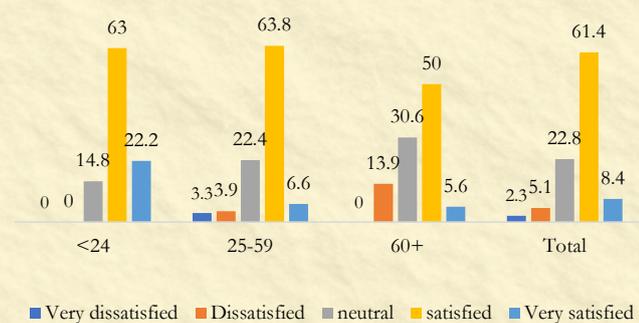


Fig 3b: Overall satisfaction with the voice bot service (by gender)



46% would definitely recommend the voice bot to other TB patients, with female respondents slightly more enthusiastic in both satisfaction and recommendation. (Table 2).



Table 1: By Age Categories

Particular	<24		25-59		60+		Total	
	N	%	N	%	N	%	N	%
Who helped to download the application?								
Hospital Staff	12	44.4	54	35.5	14	38.9	80	37.2
ASHA	6	22.2	16	10.5	6	16.7	28	13
NGO/CBO staff	9	33.3	82	53.9	16	44.4	107	49.8
Total	27	100	152	100	36	100	215	100
Have you used the application after downloading?								
YES	25	92.6	141	92.8	32	88.9	198	92.1
NO	2	7.4	11	7.2	4	11.1	17	7.9
Total	27	100	152	100	36	100	215	100
In the last 7 days, have you or PATIENT NAME used the application								
YES	8	32	28	19.9	7	21.9	43	21.7
NO	17	68	113	80.1	25	78.1	155	78.3
Total	25	100	141	100	32	100	198	100
The main reasons for not using the Sangaati application								
No internet data	0	0	4	3.2	0	0	4	2.3
Forgot to use	3	15.8	34	27.4	10	34.5	47	27.3
App not working properly	0	0	4	3.2	1	3.4	5	2.9
Did not find it useful	2	10.5	14	11.3	5	17.2	21	12.2
Didn't understand how to use	2	10.5	13	10.5	6	20.7	21	12.2
Language	1	5.3	1	0.8	3	10.3	5	2.9
Health improved – didn't feel the need	9	47.4	47	37.9	8	27.6	64	37.2
Busy with work or family	2	10.5	33	26.6	3	10.3	38	22.1
Concern about privacy or data use	0	0	1	0.8	0	0	1	0.6
No time	2	10.5	26	21	4	13.8	32	18.6
Others (specify)	1	5.3	5	4	0	0	6	3.5
N	19		124		29		172	
Can you or PATIENT NAME understand the language and content used in the voice b								
YES	12	44.4	49	32.2	6	16.7	67	31.2
Somewhat	10	37	88	57.9	25	69.4	123	57.2
NO	5	18.5	15	9.9	5	13.9	25	11.6
Total	27	100	152	100	36	100	215	100
Do you or PATIENT NAME usually listen to the full message?								
Always	8	29.6	39	25.7	7	19.4	54	25.1
Most times	13	48.1	63	41.4	9	25	85	39.5
Rarely	1	3.7	38	25	15	41.7	54	25.1
Never	5	18.5	12	7.9	5	13.9	22	10.2
Total	27	100	152	100	36	100	215	100
Do you or PATIENT NAME trust the health information provided by the voice bot?								
YES	20	74.1	113	74.3	23	63.9	156	72.6
NO	7	25.9	39	25.7	13	36.1	59	27.4
Total	27	100	152	100	36	100	215	100

Particular	<24		25-59		60+		Total	
	N	%	N	%	N	%	N	%
Is the voice tone and style friendly and understandable?'								
YES	22	81.5	132	86.8	27	75	181	84.2
NO	5	18.5	20	13.2	9	25	34	15.8
Total	27	100	152	100	36	100	215	100
Do you or PATIENT NAME feel confident to ask questions about TB after hearing t								
YES	22	81.5	110	72.4	24	66.7	156	72.6
NO	5	18.5	42	27.6	12	33.3	59	27.4
Total	27	100	152	100	36	100	215	100
What key messages or questions you asked the voice bot about TB?								
SIGNS AND SYMPTOMS OF TB	14	51.9	121	79.6	27	75	162	75.3
HOW TB SPREADS	16	59.3	107	70.4	25	69.4	148	68.8
WAYS OF PREVENTION	9	33.3	118	77.6	25	69.4	152	70.7
WHETHER TO DISCLOSE	1	3.7	5	3.3	0	0	6	2.8
HOW TO PROTECT SELF AND OTHERS	7	25.9	42	27.6	6	16.7	55	25.6
DBT	0	0	1	0.7	0	0	1	0.5
Nikshay Mitra	1	3.7	0	0	0	0	1	0.5
Stigma related counselling								
ADHERENCE OF TREATMENT	3	11.1	3	2	2	5.6	8	3.7
TREATMENT DURATION	1	3.7	6	3.9	2	5.6	9	4.2
FOLLOW-UP FOR TEST	3	11.1	6	3.9	1	2.8	10	4.7
SIDE EFFECT	2	7.4	43	28.3	8	22.2	53	24.7
COUGH	2	7.4	3	2	1	2.8	6	2.8
NUTRITION	10	37	13	8.6	3	8.3	26	12.1
MEDICINE DISTRIBUTION	5	18.5	6	3.9	3	8.3	14	6.5
HEALTH CHECK-UP	5	18.5	10	6.6	2	5.6	17	7.9
INFECTION	4	14.8	32	21.1	7	19.4	43	20
MENTAL HEALTH	1	3.7	2	1.3	0	0	3	1.4
OTHERS	3	11.1	10	6.6	2	5.6	15	7
Total	27		152		36		215	
Would you or PATIENT NAME recommend the voice bot to other TB patients?								
Definitely	18	66.7	70	46.1	11	30.6	99	46
Maybe	6	22.2	72	47.4	19	52.8	97	45.1
No	3	11.1	10	6.6	6	16.7	19	8.8
Total	27	100	152	100	36	100	215	100
Overall satisfaction with the voice bot service								
Very dissatisfied	0	0	5	3.3	0	0	5	2.3
Dissatisfied	0	0	6	3.9	5	13.9	11	5.1
Neutral	4	14.8	34	22.4	11	30.6	49	22.8
Satisfied	17	63	97	63.8	18	50	132	61.4
Very satisfied	6	22.2	10	6.6	2	5.6	18	8.4
Total	27	100	152	100	36	100	215	100

Table 2: By Gender

Particulars	Male		Female		Total	
	N	%	N	%	N	%
Who helped to download the application?						
Hospital Staff	46	31.5	34	49.3	80	37.2
ASHA	18	12.3	10	14.5	28	13
NGO/CBO staff	82	56.2	25	36.2	107	49.8
Total	146	100	69	100	215	100
Have you used the application after downloading?						
YES	133	91.1	65	94.2	198	92.1
NO	13	8.9	4	5.8	17	7.9
Total	146	100	69	100	215	100
In the last 7 days, have you or PATIENT NAME used the application						
YES	29	21.8	14	21.5	43	21.7
NO	104	78.2	51	78.5	155	78.3
Total	133	100	65	100	198	100
main reasons for not using the Sangaati application						
No internet data	3	2.6	1	1.8	4	2.3
Forgot to use	36	30.8	11	20	47	27.3
App not working properly	2	1.7	3	5.5	5	2.9
Did not find it useful	13	11.1	8	14.5	21	12.2
Didn't understand how to use	15	12.8	6	10.9	21	12.2
Language	3	2.6	2	3.6	5	2.9
Health improved – didn't feel the need	42	35.9	22	40	64	37.2
Busy with work or family	27	23.1	11	20	38	22.1
Concern about privacy or data use	0	0	1	1.8	1	0.6
No time	26	22.2	6	10.9	32	18.6
Others (specify)	4	3.4	2	3.6	6	3.5
N	117		55		172	
Can you or PATIENT NAME understand the language and content used in the voice b						
YES	37	25.3	30	43.5	67	31.2
Somewhat	93	63.7	30	43.5	123	57.2
NO	16	11	9	13	25	11.6
Total	146	100	69	100	215	100
Do you or PATIENT NAME usually listen to the full message?						
Always	37	25.3	17	24.6	54	25.1
Most times	55	37.7	30	43.5	85	39.5
Rarely	39	26.7	15	21.7	54	25.1
Never	15	10.3	7	10.1	22	10.2
Total	146	100	69	100	215	100
Do you or PATIENT NAME trust the health information provided by the voice bot?						
YES	102	69.9	54	78.3	156	72.6
NO	44	30.1	15	21.7	59	27.4
Total	146	100	69	100	215	100

Particulars	Male		Female		Total	
	N	%	N	%	N	%
Is the voice tone and style friendly and understandable?						
YES	126	86.3	55	79.7	181	84.2
NO	20	13.7	14	20.3	34	15.8
Total	146	100	69	100	215	100
Do you or PATIENT NAME feel confident to ask questions about TB after hearing t						
YES	101	69.2	55	79.7	156	72.6
NO	45	30.8	14	20.3	59	27.4
Total	146	100	69	100	215	100
What key messages or questions you asked the voice bot about TB?						
Signs and symptoms of tb	112	76.7	50	72.5	162	75.3
How tb spreads	106	73.1	42	60.9	148	69.2
Ways of prevention	110	75.9	41	59.4	151	70.6
Whether to disclose	5	3.4	1	1.4	6	2.8
How to protect self and others	36	24.8	19	27.5	55	25.7
DBT	1	0.7	0	0	1	0.5
Nikshay Mitra	1	0.7	0	0	1	0.5
Stigma related counselling	0	0	0	0	0	0
Adherence of treatment	5	3.4	3	4.3	8	3.7
Treatment duration	5	3.4	4	5.8	9	4.2
Follow-up for test	6	4.1	4	5.8	10	4.7
Side effect	42	29	11	15.9	53	24.8
Cough	4	2.8	2	2.9	6	2.8
Nutrition	13	9	13	18.8	26	12.1
Medicine distribution	8	5.5	6	8.7	14	6.5
Health check-up	11	7.6	6	8.7	17	7.9
Infection	32	22.1	11	15.9	43	20.1
Mental health	3	2.1	0	0	3	1.4
Others	10	6.9	5	7.2	15	7
N	145		69		214	
Would you or PATIENT NAME recommend the voice bot to other TB patients?						
Definitely	64	43.8	35	50.7	99	46
Maybe	69	47.3	28	40.6	97	45.1
No	13	8.9	6	8.7	19	8.8
Total	146	100	69	100	215	100
Overall satisfaction with the voice bot service						
Very dissatisfied	3	2.1	2	2.9	5	2.3
Dissatisfied	9	6.2	2	2.9	11	5.1
neutral	36	24.8	13	18.8	49	22.9
satisfied	91	62.1	41	59.4	131	61.2
Very satisfied	7	4.8	11	15.9	18	8.4
Total	146	100	69	100	214	100

Conclusion

The voice bot is well-received, trustworthy, and informative, yet sustained usage and engagement remain challenges. Motivational and contextual barriers—rather than technical issues—predominate, suggesting that reminders, content personalisation, and targeted support for older users and males may enhance continued utilisation.

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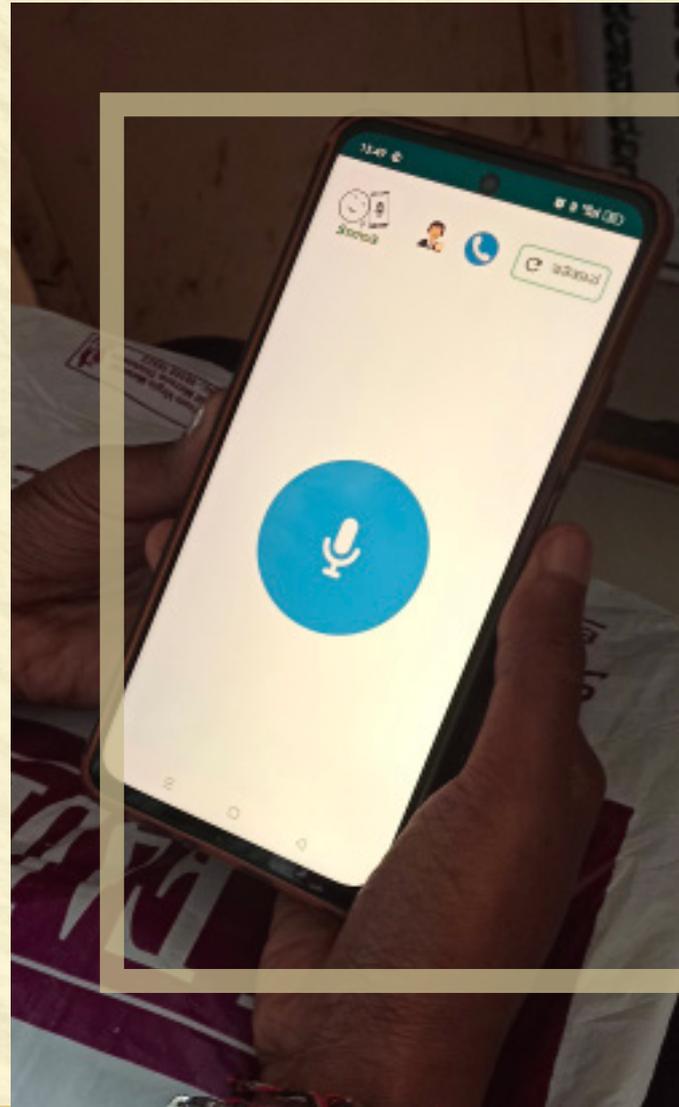
Contributors:

Arin Kar, Praveen Kumar, Sandeep H and Liyakat Peerjade.

Design and layout:

Praveen Hudedavar

Photography: KHPT



KHPT

IT Park, 5th Floor,
1-4, Rajajinagar Industrial Area,
Behind KSSIDC Admin office, Rajajinagar,
Bengaluru, Karnataka - 560 044

Ph: + 91 80 4040 0200
Fax: + 91 80 4040 0300
Email: khptblr@khpt.org
Website: www.khpt.org

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