JOURNAL OF PROMKES:
Public Research on Outreach, Motivation, and Knowledge for Education in Society

Effectiveness of Mhealth-Based Health Promotion Interventions on Community Health Worker Empowerment and Early Tuberculosis Detection in Areas with Low Health Service Coverage

Mila Sari[1]*, & Chantika Aditya Prameswari
[1]*STIKES Dharma Landbouw, Indonesia, [2]Poltekkes Kemenkes Padang, Indonesia
*Co e-mail: milasari.fdk@gmail.com[1]

Article Information
Received: September 17, 0000 y
Revised: September 30, 0000 y
Online: October 05, 0000 y

Keywords
mhealth, Cadre Empowerment, Early Tuberculosis Detection, Health Promotion

ABSTRACT

Tuberculosis (TB) remains a major public health problem, particularly in areas with low health coverage and limited access to diagnostic facilities and health workers. Community health cadres play an important role in early TB case finding, while mHealth technology may strengthen their capacity and empowerment. This study aimed to evaluate the effectiveness of an mHealth-based health promotion intervention on cadre empowerment and early TB detection outcomes in low health coverage areas in West Pasaman Regency, West Sumatra. A quantitative pre-experimental study using a one-group pretest-posttest design involved 76 health cadres who received mHealth application-based training and mentoring. Data included knowledge, TB detection skills, empowerment, mHealth usage and adherence, suspects identified and referred, referral follow-up, and intervention fidelity. Data were analyzed using paired t-tests, Pearson correlation, independent t-tests, and one-way ANOVA. Knowledge increased from 62.14 ± 8.92 to 79.61 ± 9.54 ($p < 0.001$), detection skills from 59.61 ± 10.58 to 80.24 ± 11.40 ($p < 0.001$), and empowerment from 60.70 ± 10.35 to 77.92 ± 10.97 ($p < 0.001$). Cadres identified 170 suspects and referred 146 (85.9%), with 74.88% referral follow-up and 86.65% intervention fidelity. Conclusion: The mHealth intervention improved cadre knowledge, detection skills, empowerment, and supported early TB case finding and referral.

Keywords : *mhealth, Cadre Empowerment, Early Tuberculosis Detection, Health Promotion*

This work is licensed under a Creative Commons Attribution 4.0 International license

INTRODUCTION

Tuberculosis (TB) remains one of the most serious public health problems globally, with the highest burden concentrated in areas with limited health resources. In areas with low health service coverage, limited access to diagnostic facilities, geographic distance, and community stigma are major barriers to timely TB case detection and reporting. A systematic review by Burke et al. (2021) demonstrated that community-based active case-finding interventions can improve TB case notification in populations with structural risk factors, although the quality of available evidence remains low and inconsistent. In remote communities such as the tribal communities of India, Satav et al. (2025) identified that geographic remoteness, stigma, and limited diagnostic facilities are key drivers of significant gaps in TB diagnosis and notification, necessitating a multifaceted strategy that combines community engagement with health system strengthening. Similarly, Chávez Rimache, Ugarte Gil, and Brunette (2023) emphasized that community participation strengthens health system capacity in TB prevention and control, with approximately 20% of the reviewed studies evaluating community involvement in active case finding. Health cadres, as community members trained in TB education, active case finding, and treatment support, play a central role in bridging formal health facilities with underserved communities (Setiyadi, Noviana, Sholikhah, & Mufarokhah, 2025).

Various cadre training programs have been consistently shown to improve cadre knowledge and preparedness in TB management. Kusumaratna et al. (2025) reported that a cadre capacity building program in South Jakarta increased cadre knowledge scores from 78.67 to 98.67 ($p < 0.05$), and trained cadres successfully identified five new TB cases through door-to-door active case finding. Fitriadi (2023) found that TB alert cadre training in Sumberharjo Village resulted in a statistically significant increase in knowledge ($p = 0.003$), although attitudes and practices did not significantly change. The "SEHATI LESTARI" program in Tunge Village increased TB knowledge from 21.9% to 71.9% and home ventilation adoption from 31.3% to 68.8%, with the formation of 32 trained cadres (Prodyanatasari et al., 2025). The cadre training intervention in Surakarta also shifted the level of preparedness from poor (47.5%) to good (62.5%) after the intervention (Widayati et al., 2026). However, major barriers to cadre effectiveness continue to include inadequate training, lack of incentives, limited access to diagnostic tools, and suboptimal integration with health facilities (Setiyadi et al., 2025; Satav et al., 2025).

The development of mobile health (mHealth) technology opens new opportunities to strengthen the role of cadres while improving TB program outcomes. A meta-analysis by Kankawale, Chutke, and Kaur (2026) of 10 randomized controlled trials in Asia showed that mHealth interventions—including SMS reminders, voice calls, smartphone apps, and video-based directly observed therapy—resulted in modest but significant improvements in TB treatment adherence (RR 1.09; 95% CI 1.02–1.16), with larger effects for interventions that combined two-way communication, daily reminders, educational components, and a combination of technologies. In India, SMS reminders and voice calls strengthened adherence to antituberculosis drug regimens and were perceived by patients as effective and affordable (Balaji et al., 2022). However, a scoping review by Tumuhimbise and Musiimenta (2021) of mHealth interventions for public-private partnership

This work is licensed under a Creative Commons Attribution 4.0 International license

(PPP) schemes in TB services found that while there was an increase in case notification, referral, and proactive follow-up, the available evidence base was weak, with only one RCT identified. A WhatsApp trial in South Africa estimated a 17.6 percentage point increase in treatment completion, but low smartphone ownership (34%) and limited mobile data access limited its feasibility for widespread implementation (Richardson, Vorster, Burger, & Rieger, 2025). At the community health worker level, Izhar, Wahab, Istiono, and Mahendradhata (2026) found that community health workers perceived mHealth interventions for TB contact investigation as acceptable and feasible, with contributing factors including stakeholder support, community health worker training, community engagement, and patient-centered design.

On the other hand, large-scale implementation of mHealth for TB case finding in Africa still faces a significant gap between programmatic implementation and rigorous effectiveness evaluation (Mudzengi et al., 2023), while inequitable access and the digital divide remain barriers in resource-limited regions (Sugiarsi, Sulaeman, Anantanyu, & Lestari, 2026). Mobility-based strategies have also shown promising results in early TB detection: a mobile TB clinic intervention in rural Madagascar increased case finding by 2.88-fold with a 97% treatment completion rate and an incremental cost-effectiveness ratio of US$25 per DALY averted, well below the cost-effectiveness threshold (Beigel et al., 2025). In Lima, Peru, a community-based mobile X-ray unit reached 6% of the target population and was associated with an 11% increase in quarterly case notifications, although only 82% of diagnosed patients actually started treatment (Yuen et al., 2021). In Uganda, an ongoing randomized controlled trial (MILEAGE4TB) is testing a combination of SMS reminders, phone calls, and transportation incentives to improve diagnosis completion in individuals with presumptive TB, given that pre-diagnosis loss can be as high as 40% (Nuwematsiko et al., 2024).

Based on the evidence review above, an important research gap can be identified: while evidence regarding the effectiveness of mHealth for TB treatment adherence and case notification is relatively strong, and cadre training has consistently been shown to improve knowledge and preparedness, the integration of mHealth specifically designed to empower health cadres while supporting the TB case-finding cascade (from suspect detection, referral, to follow-up) remains under-explored empirically and simultaneously. The novelty of this study lies in the integrated evaluation of an mHealth-based health promotion intervention that simultaneously assesses its impact on cadre-level outcomes (knowledge, detection skills, and empowerment) and program-level outcomes (number of suspects detected, referrals, follow-up, and implementation fidelity), including examining the relationship between mHealth use patterns and TB case-finding outcomes in areas with low health service coverage a relationship rarely reported simultaneously in the existing literature.

Based on the description, this study aims to: (1) assess the effectiveness of mHealth-based health promotion interventions on the knowledge, detection skills, and empowerment of health cadres; (2) describe the program's achievements in the discovery, referral, and follow-up of TB suspects by cadres; (3) analyze the relationship between the intensity and compliance of mHealth

This work is licensed under a Creative Commons Attribution 4.0 International license

use and the fidelity of the intervention with the achievement of TB case detection; and (4) explore variations in achievements based on cadre characteristics.

METHODS

This study used a quantitative pre-experimental one group pretest posttest design to assess the effectiveness of mHealth-based health promotion interventions on knowledge, TB detection skills, and empowerment of health cadres, complemented by analysis of programmatic data (number of suspected cases detected, referrals, follow-up, and intervention fidelity) collected during the implementation period.

The study was conducted in West Pasaman Regency (Kabupaten Pasaman Barat), West Sumatra Province, Indonesia, in the working areas of Talamau that were classified as areas with low health service coverage. Low coverage was characterized by (1) TB case detection and treatment coverage (the number of TB cases found and treated relative to the estimated number of cases) below the national program target in the most recent annual report of the district health office, (2) limited access to TB diagnostic facilities, indicated by long distance or travel time from communities to the nearest primary health center able to diagnose TB, and (3) a limited number of health workers delivering TB services. The study population consisted of community health cadres active in these areas. A total of 76 cadres were selected through purposive sampling, in which all cadres who met the eligibility criteria were enrolled. The inclusion criteria were active service as a community health cadre for at least one year, access to a smartphone, and willingness to complete the entire mHealth-based training and mentoring program and to provide informed consent. The exclusion criteria were failure to complete all training and mentoring sessions or incomplete pretest–posttest data.

The mHealth-based health promotion interventions provided included: (1) an interactive digital educational module on TB symptoms, transmission, and management accessed through a chat application/platform (mHealth); (2) a digital TB suspect screening tool to guide cadres in identifying symptoms in the field; (3) a periodic reminder and mentoring system through digital messages to strengthen cadre compliance in carrying out their duties; and (4) a digital reporting and referral system to record and follow up on TB suspects found in health care facilities. The intervention was implemented in stages over several weeks, referring to the principles of stakeholder engagement, ongoing training, and user-centered design as recommended in the community health worker-based mHealth literature (Izhar et al., 2026).

TB knowledge, TB detection skills, and cadre empowerment were measured using a structured instrument with a score range of 0–100, administered before (pretest) and after (posttest) the intervention. The intensity and adherence to mHealth use were measured using a scale of 1–5 based on application usage logs and cadre self-reports. Intensity reflected how often cadres used the four components of the intervention (the educational module, the screening tool, the reminder and mentoring messages, and the reporting and referral system), whereas adherence reflected how consistently they used them according to the protocol (for example, completing modules, responding to reminders, and submitting reports on time). Each dimension was rated from 1 (very

This work is licensed under a Creative Commons Attribution 4.0 International license

low) to 5 (very high), and mean scores were categorized using equal class intervals (4 ÷ 5 = 0.80): 1.00–1.80 (very low), 1.81–2.60 (low), 2.61–3.40 (moderate), 3.41–4.20 (high), and 4.21–5.00 (very high). Programmatic data, including the number of TB suspects detected, the number of suspects referred, the percentage of referral follow-up, and the fidelity of intervention implementation (assessed through an observation checklist by field facilitators, expressed as the percentage of implementation compliance with the protocol), were collected programmatically throughout the intervention period for each cadre.

The characteristics of cadres and research variables were analyzed descriptively (frequency, percentage, mean, and standard deviation). The effectiveness of the intervention on knowledge, detection skills, and empowerment of cadres was assessed by comparing pre-test and post-test scores using a paired sample t-test and Cohen's dz effect size. The relationship between intensity of mHealth use, adherence to mHealth use, and intervention fidelity with case detection outcomes (number of suspected cases detected, number of referrals, and percentage of referral follow-up) was analyzed using the Pearson correlation coefficient. Differences in outcomes based on cadre characteristics (gender, education level, previous TB training history) were analyzed using an independent t-test (two groups) and one-way analysis of variance (more than two groups). Statistical significance was set at $p < 0.05$. All data analyses were performed using statistical software.

This research was conducted in accordance with ethical research principles, including explanation of the research objectives, informed consent from all participating cadres, confidentiality of respondents' identities and data, and the right of respondents to withdraw without any consequences. The research has obtained ethical approval from the relevant institutional health research ethics committee.

RESULTS

1. Characteristics of Health Cadres

This study involved 76 health cadres with an average age of 39.39 ± 9.10 years (range 24–57 years) and an average length of service of 7.76 ± 4.73 years (range 1–15 years). Most cadres were female (75.0%), with the highest education level being high school/vocational high school (56.6%). Previous TB training history was fairly balanced, with 48.7% of cadres having participated in similar training and 51.3% not. Complete characteristics of the cadres are presented in Table 1.

Table 1. Characteristics of Health Cadres (n = 76)

Variables	Category	n	%
Gender	Woman	57	75,0
	Man	19	25,0
Age (years)	Mean ± SD	39,39 ± 9,10	
	Range	24–57	
Level of education	SMA/SMK	43	56,6
	Diploma	20	26,3
	S1	13	17,1

This work is licensed under a Creative Commons Attribution 4.0 International license

Length of Service as a Cadre (years)	Mean ± SD	7,76 ± 4,73	
	Range	1–15	
Previous TB Training History	Once	37	48,7
	Not yet	39	51,3

2. Effectiveness of Interventions on Knowledge, Skills, and Empowerment of Cadres

Paired t-test results showed a statistically significant increase in all three main variables after the intervention. Knowledge scores increased from 62.14 ± 8.92 to 79.61 ± 9.54 ($t = 31.290$; $p < 0.001$), with a Cohen's dz effect size of 3.59. TB detection skills scores increased from 59.61 ± 10.58 to 80.24 ± 11.40 ($t = 26.833$; $p < 0.001$; $dz = 3.08$). Cadre empowerment scores increased from 60.70 ± 10.35 to 77.92 ± 10.97 ($t = 27.691$; $p < 0.001$; $dz = 3.18$). All three effect sizes are very large, indicating a substantial impact of the mHealth-based health promotion intervention. The full results are presented in Table 2.

Table 2. Comparison of Knowledge Scores, Detection Skills, and Empowerment of Cadres Before and After Intervention (n = 76)

Variables	Pre (Mean ± SD)	Post (Mean ± SD)	t	p	Cohen's dz
TB Knowledge	62,14 ± 8,92	79,61 ± 9,54	31,290	< 0,001	3,59
TB Detection Skills	59,61 ± 10,58	80,24 ± 11,40	26,833	< 0,001	3,08
Empowerment of Cadres	60,70 ± 10,35	77,92 ± 10,97	27,691	< 0,001	3,18

3. mHealth Usage Patterns

During the intervention period, the average intensity of mHealth application use by cadres was 4.09 ± 0.61 (scale 1–5), and the average compliance with mHealth use was 3.97 ± 0.83 (scale 1–5), both of which were in the high category. The fidelity of intervention implementation, which describes the suitability of program implementation to the established protocol, was recorded as quite high with an average of 86.65 ± 7.14% (range 70.1–100%).

4. TB Case Detection Achievements by Cadres

During the intervention period, 76 health cadres successfully identified a total of 170 TB suspects (mean 2.24 ± 1.54 suspects per cadre) and referred 146 of them to health care facilities (mean 1.92 ± 1.24 referrals per cadre), meaning 85.9% of identified suspects were successfully referred. Of the referred suspects, the average referral follow-up rate (the proportion of referrals actually followed up to examination at a health facility) was 74.88 ± 24.72%. An overview of the TB case detection cascade is presented in Table 3.

Table 3. TB Case Discovery Cascade by Health Cadres (n = 76 Cadres)

Stages	Total	Average per Cadre (Mean ± SD)	Percentage to Previous Stage
TB Suspect Detected	170	2,24 ± 1,54	-

This work is licensed under a Creative Commons Attribution 4.0 International license

Suspects Referred to Health Facilities	146	1,92 ± 1,24	85,9%
Referral Follow-up Completed	≈109*	-	74,88 ± 24,72%**

5. The Relationship Between mHealth Usage and Intervention Fidelity with Case Finding Achievement

Pearson correlation analysis showed that the number of TB suspects detected was highly and significantly correlated with the number of referrals ($r = 0.959$; $p < 0.001$), which logically illustrates that most of the identified suspects were indeed referred. The number of referrals was also moderately and significantly correlated with the percentage of referral follow-up ($r = 0.407$; $p < 0.001$), as was the number of detected suspects with referral follow-up ($r = 0.380$; $p < 0.001$). Interestingly, the intensity of mHealth use was not significantly correlated with the percentage of referral follow-up ($r = 0.151$; $p = 0.192$), nor with the number of detected suspects ($r = 0.039$; $p = 0.739$). Similarly, mHealth adherence was not significantly correlated with the number of referrals ($r = 0.051$; $p = 0.664$), and intervention fidelity was not significantly correlated with referral follow-up ($r = 0.047$; $p = 0.684$) or with the number of suspects detected ($r = -0.160$; $p = 0.166$). The complete correlation matrix is presented in Table 4.

Table 4. Pearson Correlation Matrix: mHealth Usage, Fidelity, and TB Case Finding Achievement

Variables	mHealth Intensity	mHealth Compliance	Suspect Detected	References	Follow-up (%)	Fidelity (%)
mHealth Intensity	1,000	0,039	0,039	0,073	0,151	-0,077
mHealth Compliance	0,039	1,000	0,077	0,051	-0,006	-0,053
Suspect Detected	0,039	0,077	1,000	0,959	0,380	-0,160
References	0,073	0,051	0,959	1,000	0,407	-0,151
Follow-up (%)	0,151	-0,006	0,380	0,407	1,000	0,047
Fidelity (%)	-0,077	-0,053	-0,160	-0,151	0,047	1,000

6. Differences in Achievements Based on Cadre Characteristics

Further analysis showed that post-test knowledge scores did not differ significantly based on gender (females 79.67 ± 9.54 vs. males 79.42 ± 9.81; $t = 0.097$; $p = 0.923$). Post-test empowerment scores also did not differ significantly based on education level (high school/vocational school = 78.42 ± 10.78; diploma = 75.85 ± 10.53; undergraduate = 79.46 ± 12.65; $F = 0.522$; $p = 0.596$). Similarly, prior TB training history did not show a significant difference in post-test knowledge scores (ever

This work is licensed under a Creative Commons Attribution 4.0 International license

trained = 79.24 ± 9.41 vs never = 79.95 ± 9.78; t = -0.320; p = 0.750), indicating that the mHealth intervention provided benefits in increasing knowledge equally, both for cadres who had previous training experience and those who had not.

DISCUSSION

The results of this study indicate that mHealth-based health promotion interventions have a very large impact on improving knowledge, TB detection skills, and empowering health cadres, with all effect sizes (Cohen's dz) in the very large category (dz > 3.0). This finding is consistent with various previous TB cadre training studies that consistently reported significant improvements in cadre knowledge and preparedness, such as the cadre capacity building program in South Jakarta which increased knowledge scores from 78.67 to 98.67 (Kusumaratna et al., 2025), the SEHATI LESTARI program which increased TB knowledge from 21.9% to 71.9% (Prodyanatasari et al., 2025), and a shift in the preparedness category from poor to good among cadres in Surakarta (Widayati et al., 2026). The significant improvement in this study is likely due to the nature of mHealth, which allows for iterative learning, ongoing reminders, and more personalized mentoring than conventional one-time training sessions, in line with the design principles of user-centered mHealth interventions supported by ongoing training (Izhar et al., 2026).

At the program outcome level, cadres in this study successfully identified 170 TB suspects and referred 85.9% of them, demonstrating that strengthening cadre capacity through mHealth significantly translates into increased case detection in the field. This high referral ratio aligns with findings from a review of mHealth coverage for public-private partnership schemes that reported increased case notification, referrals, and proactive follow-up (Tumuhimbise & Musiimenta, 2021), although the overall quality of the evidence in that study was still considered weak. However, the referral follow-up rate in this study (74.88%) indicates that there is still a gap between referral and completion of examination at the health facility a pattern of leakage in the service cascade also reported in other studies, such as only 82% of patients actually starting treatment after being diagnosed through a mobile X-ray unit in Lima, Peru (Yuen et al., 2021), and the finding that pre-diagnosis patient loss can reach 40% in Uganda (Nuwematsiko et al., 2024). This emphasizes that strengthening the capacity of cadres at the point of case detection needs to be balanced with strengthening the referral system and the capacity of receiving health facilities so that the benefits of early detection can be optimally converted into treatment initiation.

An interesting and methodologically relevant finding in this study is the lack of a significant correlation between the intensity or adherence to mHealth use and case detection outcomes (number of suspected cases detected, referrals, or follow-up). This finding indicates that frequency of application use alone does not automatically translate into improved program outcomes. This is consistent with the view of Izhar et al. (2026) that the success of mHealth adoption by community health workers is determined more by qualitative factors such as stakeholder support, adequate training, community engagement, and patient-centered design, rather than simply the frequency of technology use. Similarly, Mudzengi et al. (2023) emphasized the gap between large-scale mHealth

This work is licensed under a Creative Commons Attribution 4.0 International license

implementation and rigorous effectiveness evaluation in Africa, further indicating that technology usage metrics are not always a valid proxy for program effectiveness. The high intervention fidelity in this study (86.65%) also did not significantly correlate with case detection outcomes, suggesting that contextual factors beyond the scope of this study such as community trust, local TB caseload, or support from local health facilities play a significant role and warrant further exploration. This is in line with Setiyadi et al.'s (2025) observation that the role of cadres is often underutilized without systematic integration into health care facilities.

The lack of differences in knowledge and empowerment outcomes based on gender, education level, or prior TB training is encouraging from a program equity perspective, as it indicates that the mHealth intervention provides relatively equitable benefits to cadres from diverse backgrounds. This finding also strengthens the arguments of Setiyadi et al. (2025) and Chávez-Rimache et al. (2023) regarding the importance of an inclusive community empowerment model in TB programs. However, it should be noted that the affordability of these equitable benefits may have been influenced by the study's inclusion criteria, which required smartphone ownership. Therefore, the challenges of the digital divide reported in the WhatsApp trial in South Africa which was limited by low smartphone ownership (34%) and limited mobile data access (Richardson et al., 2025) may not have been fully reflected in this study sample. Overall, the findings of this study reinforce the ecosystemic competency framework that integrates health literacy, health promotion, and digital health in cadre-based TB prevention (Sugiarsi et al., 2026), while also underscoring the importance of quality program implementation beyond mere technology provision.

This study has several limitations that should be considered when interpreting the results. First, the one-group pretest-posttest design without a comparison group limits the ability to definitively draw causal conclusions, as improvements in scores could potentially be influenced by maturation factors or repeated testing effects. Second, the inclusion criteria requiring smartphone ownership potentially resulted in a sample that was underrepresented among cadres with limited digital access, so generalizing the results to the broader cadre population including those facing the digital divide requires caution. Third, referral follow-up outcomes and intervention fidelity were measured over a relatively short implementation period, thus underestimating long-term sustainability. Fourth, contextual factors such as health facility support, local TB caseload, and community trust were not explicitly measured, even though they have the potential to explain variation in outcomes that cannot be explained by the intensity or fidelity of mHealth use alone. Fifth, the study was conducted in a single regency (West Pasaman), so the findings may not be generalizable to other low-coverage areas with different geographic, health system, and socio-cultural characteristics. Future research is recommended to employ an experimental design with a control group (randomized controlled trial), similar to the MILEAGE4TB trial in Uganda (Nuwematsiko et al., 2024), expand the sample size to cadres with a wider range of digital access, extend the follow-up period, and use a mixed-methods approach to uncover qualitative factors underlying successful case finding beyond technology usage metrics.

This work is licensed under a Creative Commons Attribution 4.0 International license

CONCLUSIONS

An mHealth-based health promotion intervention proved highly effective in improving knowledge, TB detection skills, and empowerment of health cadres, with a significant impact on all three variables. During the intervention period, cadres successfully identified and referred a substantial number of TB suspects with a high referral ratio, although gaps remain in the follow-up of referrals to health facility examinations that need to be addressed through strengthening the referral system. Neither the intensity and adherence to mHealth use, nor the fidelity of the intervention, were significantly correlated with case detection outcomes, indicating that program success is more determined by qualitative factors of implementation and local context than simply the frequency of technology use. The intervention's benefits were also evenly distributed across cadres of varying gender, educational background, and prior training. These findings support the importance of integrating mHealth into TB cadre empowerment programs in areas with low health service coverage, with an emphasis on quality of implementation, strengthening the referral system, and further research with more robust designs to confirm causal relationships and contextual factors influencing program success.

REFERENCES

Balaji, J. N., Prakash, S., Park, Y., Baek, J., Shin, J., Rajaguru, V., & Surapaneni, K. M. (2022). A Scoping Review on Accentuating the Pragmatism in the Implication of Mobile Health (mHealth) Technology for Tuberculosis Management in India. Journal of Personalized Medicine, 12. https://doi.org/10.3390/jpm12101599

Beigel, L., Nguyen, H., De Allegri, M., Franke, M. A., Randrianantoanina, A., Ranjaharinony, F., Etrahagnane, M., Knauss, S., Emmrich, J., & Muller, N. (2025). Community-based mobile tuberculosis clinics in rural Madagascar: impact and cost-effectiveness analysis. BMJ Global Health, 10. https://doi.org/10.1136/bmjgh-2025-019436

Burke, R., Nliwasa, M., Feasey, H., Chaisson, L. H., Golub, J., Naufal, F., Shapiro, A., Rupérez, M., Telisinghe, L., Ayles, H., Corbett, E., & MacPherson, P. (2021). Community-based active case-finding interventions for tuberculosis: a systematic review. The Lancet Public Health, 6, e283–e299. https://doi.org/10.1016/s2468-2667(21)00033-5

Chávez-Rimache, L., Ugarte-Gil, C., & Brunette, M. (2023). The community as an active part in the implementation of interventions for the prevention and care of tuberculosis: A scoping review. PLOS Global Public Health, 3. https://doi.org/10.1371/journal.pgph.0001482

Fitriadi, Y. (2023). Effort to Control Pulmonary Tuberculosis (TB) in the Community through Tuberculosis Alert Health Cadre Training. Journal of Community Empowerment for Health. https://doi.org/10.22146/jcoemph.77331

Izhar, M., Wahab, A., Istiono, W., & Mahendradhata, Y. (2026). mHealth-supported tuberculosis contact investigation by community health workers in high-burden countries: a scoping review. Global Health Action, 19. https://doi.org/10.1080/16549716.2026.2684132

This work is licensed under a Creative Commons Attribution 4.0 International license

Kankawale, S., Chutke, A. P., & Kaur, N. (2026). Effective mHealth interventions to improve tuberculosis treatment adherence in Asia: a systematic review and meta-analysis. BMC Public Health, 26. https://doi.org/10.1186/s12889-026-27448-4

Kusumaratna, R., Tan, S., Sari, M., Rahayu, M. S., Herteniza, R. A., & Riskawa, R. M. (2025). Strengthening Health Cadre Capacity in TB Detection: Evaluation in Urban South Jakarta. Jurnal Kreativitas Pengabdian Kepada Masyarakat (PKM). https://doi.org/10.33024/jkpm.v9i1.23129

Mudzengi, D., Chomutare, H., Nagudi, J., Ntshiqa, T., Davis, L., Charalambous, S., & Velen, K. (2023). Using mHealth Technologies for Case Finding in Tuberculosis and Other Infectious Diseases in Africa: Systematic Review. JMIR mHealth and uHealth, 12. https://doi.org/10.2196/53211

Nuwematsiko, R., Kiwanuka, N., Atuyambe, L., Wobusobozi, I., Kasiita, V., Kagongwe, S., Ssenyonga, R., Kalyango, J., Nankabirwa, V., & Buregyeya, E. (2024). Effect of SMS Reminders, Telephone Calls, and Transport Incentives on Enhancing the Completion of Tuberculosis Diagnosis and Initiation of Treatment for Diagnosed Patients: Protocol for a Randomized Controlled Trial. JMIR Research Protocols, 14. https://doi.org/10.2196/70325

Prodyanatasari, A., Pratiwi, W. N., Astutik, W., Laksono, A., Werdiningsih, W., Anikasari, E., & Fernanda, J. W. (2025). "SEHATI LESTARI": Strengthening Health Cadres to Realize a TB-Free and Healthy Community. Darmabakti Cendekia: Journal of Community Service and Engagements. https://doi.org/10.20473/dc.v7.i2.2025.125-132

Richardson, S., Vorster, P., Burger, R., & Rieger, M. (2025). Conversational mHealth Platform Designed to Support Tuberculosis Treatment Adherence in Low-Income South African Patients: Pilot Cohort Study. JMIR Formative Research, 10. https://doi.org/10.2196/85242

Satav, A., Raje, D., Dani, V., Munje, R., Kumbhare, S., Zodpey, S., Shelgaonkar, M., Fernandes, G., Pinnock, H., Stagg, H. R., & Nair, H. (2025). Systematic review of barriers to and enablers of tuberculosis diagnosis, notification, and intervention for designing customised intervention package to minimise 'missing millions' in tribal communiti es of India. Journal of Global Health, 15. https://doi.org/10.7189/jogh.15.04303

Setiyadi, A., Noviana, U., Sholikhah, E. N., & Mufarokhah, H. (2025). Community Empowerment through Cadres in the Tuberculosis Program: A Scoping Review. Iranian Journal of Public Health, 54, 1339–1349. https://doi.org/10.18502/ijph.v54i7.19113

Sugiarsi, S., Sulaeman, E. S., Anantanyu, S., & Lestari, A. (2026). Integrating health literacy, health promotion, and digital health in tuberculosis prevention: An ecosystemic competency framework and CIMO-based systematic review. Veterinary World, 19, 1888–1899. https://doi.org/10.14202/vetworld.2026.1888-1899

Tumuhimbise, W., & Musiimenta, A. (2021). A review of mobile health interventions for public private mix in tuberculosis care. Internet Interventions, 25. https://doi.org/10.1016/j.invent.2021.100417

This work is licensed under a Creative Commons Attribution 4.0 International license

Widayati, D., Rahim, A. M., Wijayanti, A. C., Noor, F. A., Zuhroidah, I., Al-Ramlawi, D., Pamungkasari, E., & Sukamto, I. S. (2026). Reinforcing TB-Sensitive Communities: Implementing Cadre Training as a Community Based Prevention and Control Strategy through Increased Knowledge and Preparedness. Jurnal Pengabdian Masyarakat Dalam Kesehatan. https://doi.org/10.20473/jpmk.v8i1.84813

Yuen, C., Puma, D., Millones, A., Galea, J., Tzelios, C., Calderón, R., Brooks, M., Jimenez, J., Contreras, C., Nichols, T. C., Nicholson, T., Lecca, L., Becerra, M., & Keshavjee, S. (2021). Identifying barriers and facilitators to implementation of community-based tuberculosis active case finding with mobile X-ray units in Lima, Peru: a RE-AIM evaluation. BMJ Open, https://doi.org/10.1136/bmjopen-2021-050314