

Assessing fidelity of community-tuberculosis programme in the central region of Burkina Faso



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Background: Tuberculosis (TB) remains a significant global public health concern, particularly in Africa. In Burkina Faso, a community-based TB program was established with funding from the Global Fund to Fight HIV/AIDS, TB, and Malaria. However, a mid-term evaluation of the program primarily focused on its effects, lacking an examination of the implementation process. To address this gap, an evaluation was conducted to assess the fidelity of the program's implementation in Burkina Faso's central region.

Method: The study employed a qualitative case study approach, involving five districts in Ouagadougou. Data were gathered through individual interviews and document analysis between July and September 2019, involving various stakeholders, such as program managers, monitoring and evaluation managers, community health workers, traditional healers, community leaders, and health workers. Thematic analysis was conducted using NVivo software version 9.

Results: The results indicate that all program components were indeed implemented, with a particularly high fidelity in the training of community health workers. Nevertheless, adaptations were made throughout the implementation process to address local challenges effectively.

Conclusion: This study sheds light on the fidelity of a community-based TB program in Burkina Faso. While the program displayed a relatively faithful implementation overall, the identified challenges and adaptations underscore the importance of ongoing monitoring and resource availability. These insights are invaluable, contributing to the knowledge base and providing guidance for future program planning, implementation, and refinement to enhance the effectiveness and sustainability of community-based TB interventions in similar settings.

Keywords: Evaluation; fidelity; adaptation; community-based programme; tuberculosis; Burkina Faso.

Introduction

Tuberculosis (TB) is one of the major health concerns in the world (World Health Organization [WHO] 2020). According to the WHO, approximately 10 million people were affected by TB (Organisation Mondiale de la Santé 2021). In 2020, a total of 1.5 m people died from TB, with 1.3 m deaths occurring among HIV-negative individuals (Organisation Mondiale de la Santé 2021). In 2019, around 2.5 m TB cases were reported in the African Region, accounting for 25% of the global TB burden (WHO 2020).

To enhance the effectiveness of TB control programmes, the WHO recommends community participation in the fight against TB. Community involvement and experience in TB interventions are used to improve availability and access to healthcare services, which is crucial for ensuring adequate TB care (Abongo, Ulo & Karanja 2020; Stop TB Partnership 2020). Community interventions have proven to be effective in combating TB worldwide (Abongo et al. 2020; Agbenyegah Addy et al. 2019; Colvin et al. 2014).

In Burkina Faso, the incidence rate of TB was estimated at 46 cases per 100 000 inhabitants, with a mortality rate of 9.7 cases per 100 000 inhabitants among HIV-negative TB patients in 2019. The proportion of missing TB cases was 24%, and the treatment success rate was 81.5% for new and relapsed patients (Ministère de la santé 2021). To improve outcomes, community actors were actively engaged. In this regard, the Global Fund funded an innovative community-based

TB programme in Burkina Faso to increase screening and improve treatment success. This programme involved members of civil society organisations who conducted awareness activities, screening of presumptive TB cases and community-based DOTS (Directly Observed Treatment, Short Course). The ultimate goal of community involvement was to reduce the burden of TB and save lives (Abongo et al. 2020; Agbenyegah Addy et al. 2019; Colvin et al. 2014; Stop TB Partnership 2020). However, there have been concerns that the implementation of the programme, entrusted to civil society organisations, may deviate significantly from the original plans, resulting in an implementation gap.

To achieve national and global TB targets, the Global Fund supported a community-based TB programme in Burkina Faso to increase screening and improve treatment success. A mid-term evaluation conducted after two years of implementation indicated that the programme yielded positive results (Norval & Sanou 2012). However, this evaluation did not provide insights into the process that led to these results. To attribute outcomes to complex interventions, it is imperative to conduct a process evaluation (Chesworth et al. 2015; Richards et al. 2014; Sanders et al. 2022). The practical effectiveness of interventions can differ from their theoretical efficacy when implemented in real-world settings. Understanding why, how, and under what real contexts interventions succeed (practical effectiveness) is crucial (Lynas & Hawkins 2017).

The weaknesses in health systems in Africa, particularly in Burkina Faso, affect the implementation of the programme (Compaore et al. 2017; Drabo et al. 2009; Ridde et al. 2013). For behaviour change interventions like the community TB programme to be effective, fidelity to the intervention is important (Akiba et al. 2022). Research on implementation has shown that programmes implemented with high fidelity have better outcomes compared to those with low fidelity (Blakely et al. 1987; Dane and Shneider 1998; Mihalic 2004). Fidelity refers to the degree to which a programme is implemented as originally planned (Carroll et al. 2007).

To our knowledge, most studies on the implementation of community-based TB interventions have focussed on feasibility, acceptability, effectiveness and the role played by communities in TB control (Abongo et al. 2020; Lukman et al. 2019; Putu et al. 2019; Sakeah et al. 2019). The implementation of community-based TB programmes has been extensively discussed in the literature, but fidelity to these interventions is often not well described. This lack of implementation data poses challenges for institutions seeking to learn from programme implementation (successes and failures). As a result, the effectiveness of interventions in real-world contexts can be compromised (Carvalho et al. 2013).

Current research has shown that fidelity and adaptations are common and can be important for achieving objectives (Colvin et al. 2014). To gain a comprehensive view of

intervention integrity, researchers have recommended measuring the five dimensions (i.e., adherence; exposure or dose; quality of delivery; participant responsiveness; and programme differentiation) of implementation fidelity, as they are crucial for examining the causal links between the intervention and its outcomes. Therefore, our study aimed to evaluate the fidelity of implementing the community-based TB programme in the Central Region of Burkina Faso, while also identifying any adaptations made (Carvalho et al. 2013).

Research methods and design

Description of intervention

The community-based TB programme in Burkina Faso was implemented by Community-Based Organisations (CBOs), which are civil society organisations. A total of 22 associations operating in five districts were involved in the programme. Two members from each association were trained to carry out the programme's activities. The programme included the following components:

Prevention activities: These activities focussed on raising awareness, providing information, education, and communication (IEC), and promoting behaviour change communication (BCC) within the community. The aim was to increase community knowledge about TB and encourage behaviour changes that could prevent its spread.

Diagnosis activities: The programme involved screening and contact tracing to identify individuals who might be symptomatic of TB. Through active case finding, the programme systematically searched for potential TB cases in the community. Presumptive TB cases were then referred to diagnosis and treatment centres (DTCs) located in health centres.

Treatment adherence support and home care: Community volunteers were responsible for providing support to individuals who tested positive for TB. They visited these individuals to supervise the use of anti-TB drugs and ensure treatment adherence. This component aimed to ensure that TB patients received appropriate care and support within their communities.

The individuals trained to carry out these community activities were referred to as community health workers, community volunteers or animators. The implementation of the programme was supervised by two sub-recipients (SRs): SR1-BURCASO and SR2-URCB. The Principal Recipient (PR) for the Global Fund funding was the Support Programme for the Associative and Community (PAMAC), which served as the financial management unit and provided supervision to the SRs.

The programme was implemented from June 2012 to December 2015, with the aim of providing TB diagnosis and treatment services to the communities involved. For a visual summary of the Community TB Programme, refer to Figure 1.

Setting

The study was conducted in Ouagadougou, the capital city of Burkina Faso. Specifically, the study focussed on five health districts within Ouagadougou: Bogodogo, Nongremassom, Baskuy, Pissy and Signonghin.

Study design

The study utilised a case study design as the methodological approach. The case under investigation was the community TB programme. The primary focus of analysis was the five dimensions of implementation fidelity (adherence). This design was chosen as the most suitable strategy for conducting an evaluative study that aimed to examine the implementation process of a community programme (ed. Brousselle 2011). The case study design is particularly appropriate when understanding that the phenomenon takes precedence over numerical data (Denis & Champagne 1990). It involves the empirical examination of a phenomenon within its real context of implementation, considering the inseparable nature of the two. In this study, we outlined the programme theory and constructed the intervention logic. A list of activities was formulated and validated by stakeholders. These activities were categorised into following three components to facilitate analysis:

Component 1: Animator training.

Component 2: Community work involving awareness-raising, outreach and care activities.

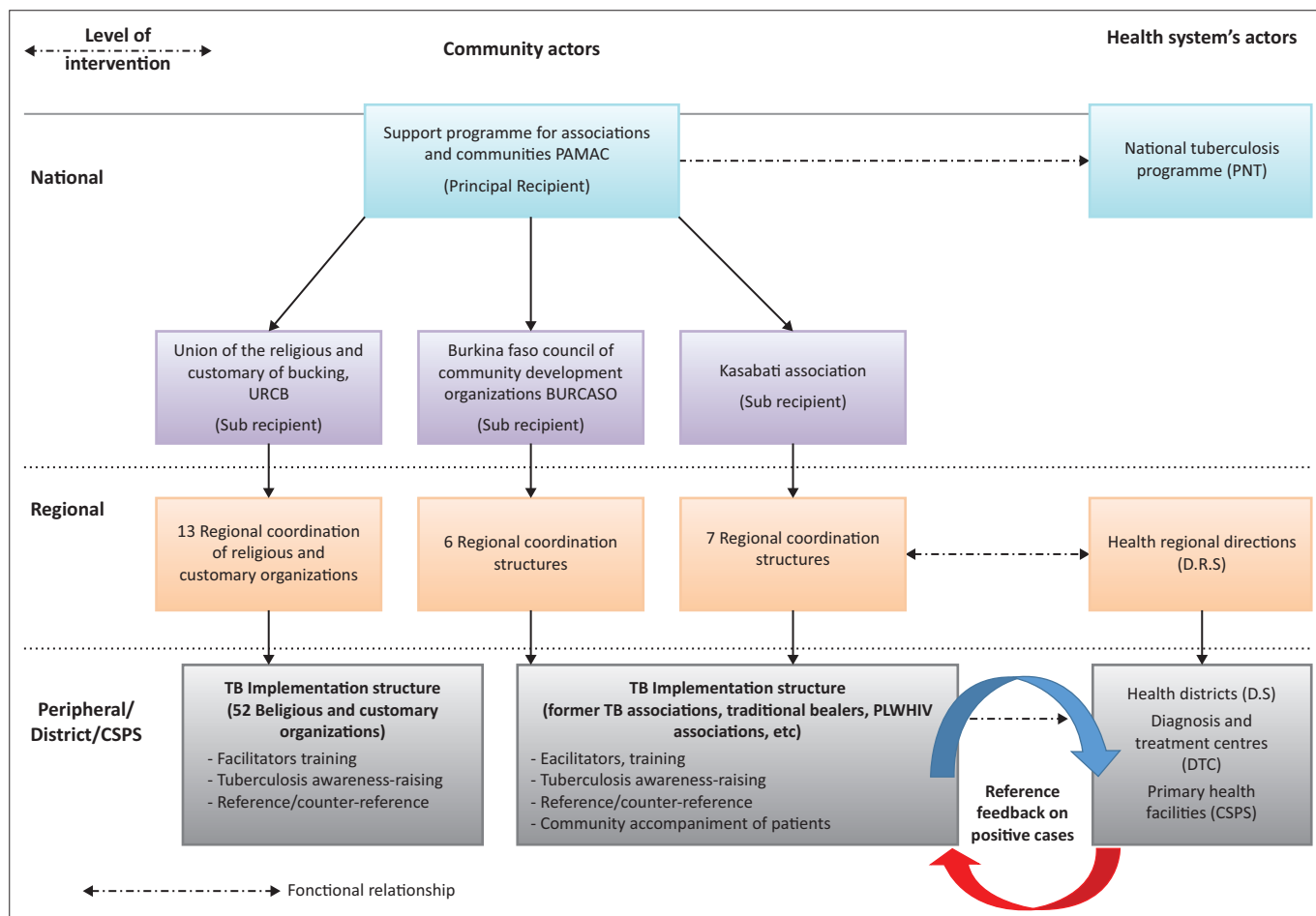
Component 3: Identification of suspected cases and referral to health facilities.

Figure 2 illustrates the logic model of the community-based TB programme.

Conceptual framework

We used the framework of Carroll et al. (2007) which is a systematic review of studies focussing on the conceptualisation of implementation fidelity. According to this framework, fidelity or integrity measurement entails assessing adherence through sub-categories such as content, frequency, duration and coverage (dose). Conceptually, implementation fidelity includes indicators of intervention (or project) adherence (content, coverage, frequency and duration).

The level of fidelity achieved can be influenced or impacted by various factors, including intervention complexity, facilitation strategies, quality of delivery, and participant responsiveness (Figure 3). This study specifically considered the complexity of the intervention and the facilitation



Source: PAMAC 2010

FIGURE 1: Structuration of the community tuberculosis intervention.

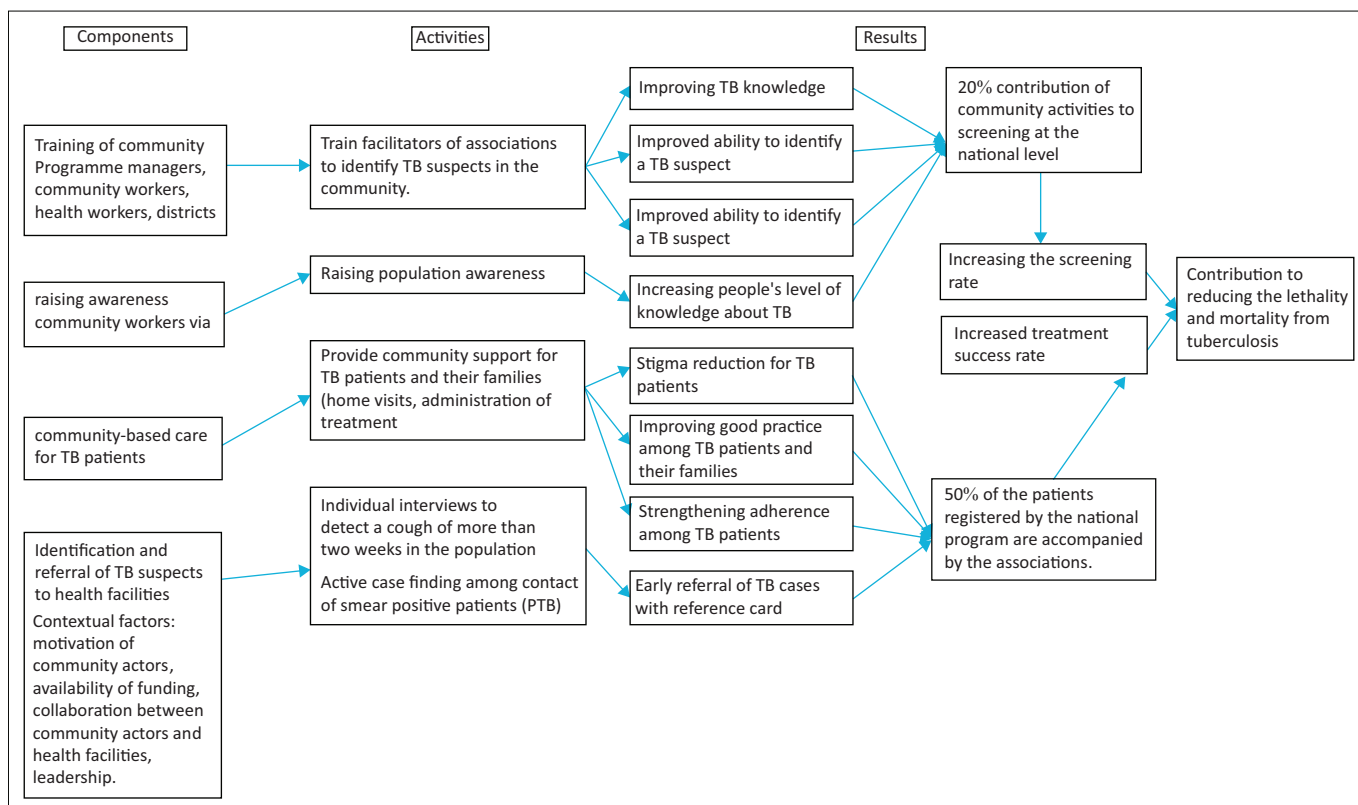


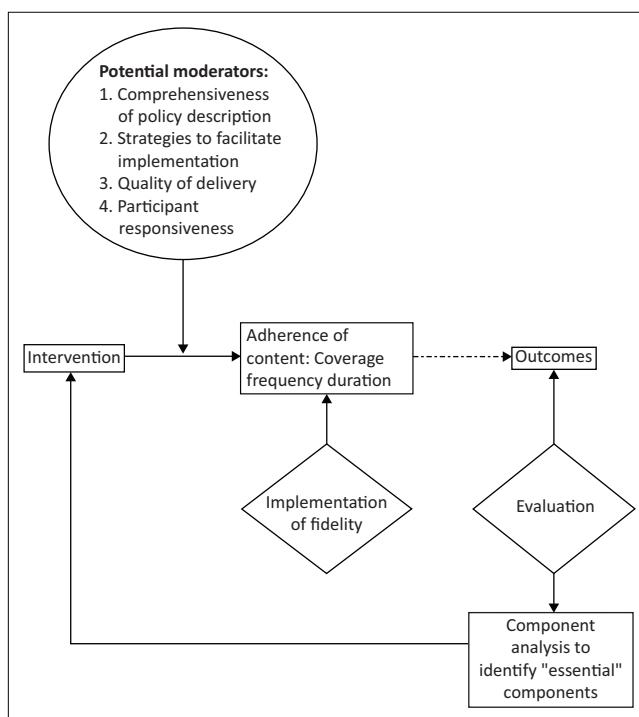
FIGURE 2: Logic model of the community-based tuberculosis programme.

strategies as moderating factors. The quality of delivery and participants' responses are typically evaluated during the implementation phase.

In the real-world settings, interventions are not always implemented exactly as planned (Hasson, Blomberg & Dunér 2012); therefore, this study employed the adaptation descriptor proposed by Pérez et al. (2016) to identify any adaptations made. Specifically, specific descriptors of fidelity for capacity building, offering a comprehensive description of the intended, including details on content, processes (e.g. 'what', 'how', 'how frequently', 'to whom' and 'by whom') and specifications related to the implementation context were provided.

Sampling and recruitment

Purposive sampling was used for individual in-depth interviews (IDIs) to ensure a comprehensive range of perspectives and experiences regarding the implementation of the intervention. Key informants from all relevant groups were selected to participate. The central region was chosen to ensure the inclusion of a significant number of key informants who had been involved in the programme. All five districts within the selected survey area were included to ensure representativeness of each group. Systematically, all health facilities and members of associations that had implemented the intervention in the following health facilities were included: Bogodogo, Boulmiougou, Kossodo, Paul VI and Samandin. Individuals with knowledge and experience in the implementation of the community TB



Source: Carroll, W.S., Booth, A., Rick, J. & Balain, S., 2007, 'A conceptual framework for implementation fidelity', *BMC Implementation Science* 2, 40. <https://doi.org/10.1186/1748-5908-2-40>

FIGURE 3: A conceptual framework for implementation fidelity.

programme were invited to participate in the interviews. The interviews were conducted until data saturation was reached, indicating that new information or perspectives were no longer emerging.

Data collection

Qualitative data were gathered by conducting IDIs with key informants who were actively involved in the implementation of the programme. The interviews were conducted in either French or Moore, the local language. To enhance the reliability and validity of the data, information from programme documentation, such as activity reports and progress reports, was collected to triangulate the gathered information. The primary sources of data for this study included the insights obtained through interviews and the information extracted from programme reports. By utilising multiple sources, this study aimed to strengthen the credibility and comprehensiveness of the data collected.

Data treatment and analysis

All interviews were transcribed in verbatim in French before analysis using NVivo software version 9. Deductive approach was employed for thematic analysis developing codes and themes aligned with the dimensions of Carroll's framework: specifically adherence to implementation fidelity in terms of content, coverage and schedule. In assessing the schedule, this study focussed on activities that had specified dates and time periods in the planning documents.

For analysing the coverage of activities, this study examined whether the implementation adheres to the planned number of activities and the designated implementation areas. To evaluate the reach of sensitisation efforts, the proportion of individuals within the health district who had been sensitised was assessed. In terms of community support and care, this study evaluated the proportion of TB patients who received community-based care. To enhance the internal validity of this study, multiple sources of evidence to triangulate the information were employed.

Qualitative data on programme adherence were quantified by converting them into proportions based on respondent categorisations: implemented as planned; NI – not implemented; and M/A – modified and/or added (Druetz 2015).

To identify the adaptations made, this study used the Pérez et al. (2016) adaptation descriptor model. While addressing the research questions, this study assessed the extent to which the identified adaptations influenced the operational principles of specific programme components and/or the intervention as a whole (Meyers, Durlak & Wandersman 2012).

Ethical considerations

Ethics approval to conduct this study was obtained from the National Ethics Committee for Health Research No. 2017-4-40 of Burkina Faso on 03 May 2017. Before each interview, participants were informed of the purpose of the study, that their participation was voluntary, and they were informed and made aware that they could stop the interview at any time and for any reason. Informed oral consent was also obtained from all study participants. The participants were assured of anonymity and confidentiality before conducting the

interviews. Any reference that could identify the respondents was removed during the recording and analysis of the data.

Results

Participants

A total of 23 key informants were involved in the study, including programme managers ($n = 4$), monitoring and evaluation managers ($n = 2$), community health workers ($n = 7$), traditional healers ($n = 2$), community leaders ($n = 3$) and health workers ($n = 6$). They represented 22 associations that carried out activities in the five districts of Ouagadougou.

Implementation fidelity

The fidelity of the community-based TB programme implementation was assessed based on adherence to content, coverage and schedule. Each dimension of fidelity was analysed to determine the degree of adherence for different intervention components.

Content adherence

Component 1: Training of community volunteers (animators): The planned training of two (2) community volunteers (1 male and 1 female) was successfully conducted with a total of 44 volunteers trained on TB active case finding. The training covered various topics such as TB symptoms, preventive measures, community mobilisation, awareness techniques and community TB care.

The content of the training was delivered as intended, and the animators found the training to be effective.

'Animators have been trained by a multidisciplinary team (doctors, DTCs workers, sociologists), and their training proved to be highly effective. All the planned modules were successfully taught. ...!!!' (DTC nurse, Bogodogo district)

Component 2: Community work (community outreach and care): In 2012, no activities were implemented as planned in terms of content, with 78% being non-implemented and 22% being modified. However, activities in 2013 and 2014 showed optimal implementation. Animators played a crucial role in the care of TB patients through the administration of directly observed treatment by community (community DOT) and the search for lost follow-up patients.

'In collaboration with health workers, we made significant contributions by ensuring the timely administration of treatment starting from 6:00 am in the morning. Our intention is not to boast, but rather to highlight our role in assisting the nurse who is often occupied with various tasks. We actively supported the administration of tablets to patients and patiently waited for them to swallow the medication.' (Animator1 district Bogodogo)

Component 3: Identification of suspected cases and referral to diagnosis and treatment centres: Advocacy, communication and social mobilisation effectively engaged community leaders in identifying suspected TB cases and referring them to DTCs. Traditional healers also played a significant role in active referral. The content adherence for this component was satisfactory overall.

'Particularly following an awareness session, our training enabled us to effectively ask targeted questions that helped identify the most probable cases.' (Animator3 Kossodo District)

'The training helped me recognize my past misidentification of TB and other coughs. Now, when I encounter someone with a persistent cough, I immediately notify Mr. X from the health center and personally escort them to the DTC. This proactive approach has led to the diagnosis of several individuals with smear positive TB cases.' (Traditional healers Association Y)

The level of adherence of content by component is summarised in Figure 4.

Figure 4 shows the level of fidelity of all components: modifications/adaptations; NI: No implemented; M/A: Modified or adapted; and I: Implemented. All the components were implemented. The training of community health workers was best implemented (100%), followed by community work and referrals of suspected TB cases. The last two components were implemented with fidelity or were modified. No components were implemented in the first year of the programme.

Coverage adherence

Coverage of community workers training: All 44 animators from the 22 associations in the five districts were successfully trained in 2012, ensuring full coverage.

Coverage of awareness activities: According to the respondents, community activities covered all districts, with behaviour change communication activities reaching the entire health district.

'We plan awareness activities with community workers, and can confirm that our entire health district benefited from behavior change communication activities.' (DTC worker1)

However, monitoring reports indicated that only 39% of the expected population was reached by outreach activities. Figure 5 shows the coverage of the outreach activities.

Coverage of identification of suspected cases and referral to diagnosis and treatment centres: During the implementation period, the associations identified and referred a total of 1701 suspected cases to DTCs. However, only 45% of the cases referred by the community health workers actually arrived at the health facilities and were seen by health workers. More than 50% of TB suspects remained in the community.

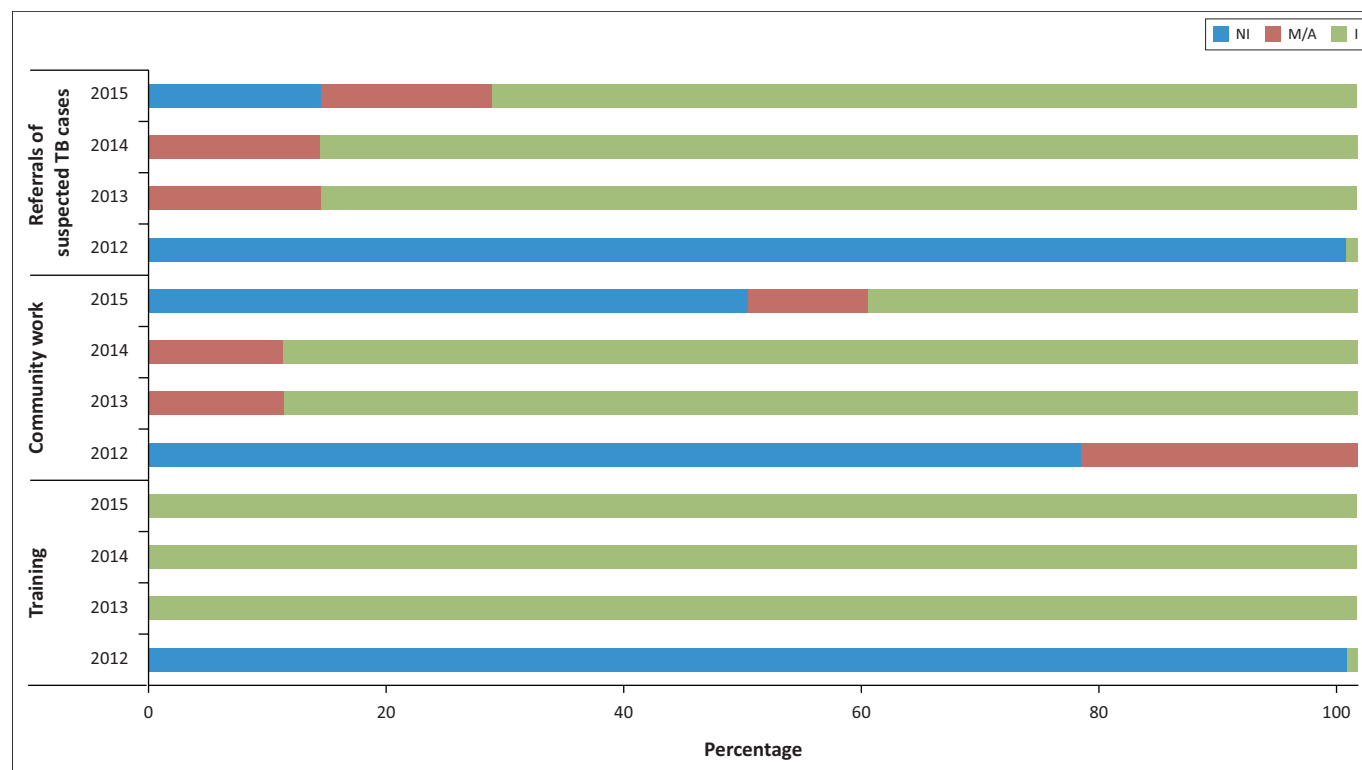
Coverage of community care activities: The original plan aimed to provide community care to 50% of newly diagnosed TB patients. However, the results showed that only 22% received community care, indicating a shortfall in coverage.

'In my opinion, the frequent interruptions in funding have hampered community organisations in achieving their objectives.' (Project manager SR1)

Schedule adherence

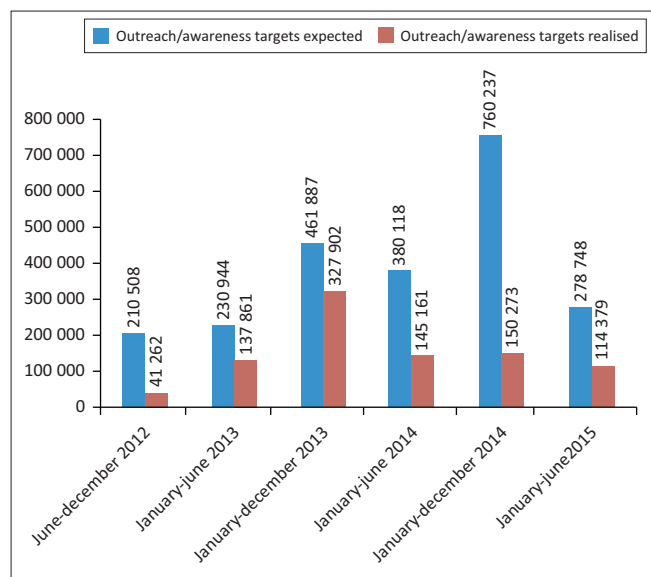
There were some delays and deviation from the planned schedule observed during the programme implementation.

Training of community workers: The training, initially planned for 2012, was delayed and took place in 2013 instead.



Source: Programme reports; Support Programme for the Associative and Community (PAMAC) 2010

FIGURE 4: The fidelity of the implementation by component.



Source: Programme reports; Support Programme for the Associative and Community (PAMAC) 2010

FIGURE 5: Coverage of awareness activities in the five districts of Ouagadougou.

Outreach/awareness activities: All activities started nine months late, leading to deviations from the planned frequency. For example, awareness-raising activities, which should have been conducted three times per trimester, were carried out only once per trimester.

‘The funding always came at the end of the trimester – we have no choice but to spread the activities out every day for a week or month.’ (Animator 2 SR2)

Adaptations during programme implementation

Three types of adaptations were made during the programme implementation.

Organisational adaptations

The programme implementers carried out operational activities in the regions and districts, which was not initially foreseen in the planning.

‘During implementation, we are obliged to be in the field with the sub-recipients for field activities.’ (SR2 Programme Officer)

Adaptation of community health workers’ activities

Tuberculosis activities were integrated into existing programmes, such as those focussed on malaria, nutrition, and HIV, to ensure continued implementation despite funding challenges. Door-to-door outreach proved to be a more successful approach.

‘We had several projects that funded community activities: malaria, nutrition and HIV. we are introducing TB to these activities.’ (Community volunteer 2)

‘Financial resources were not available very often as planned, we had to develop some initiatives to present the results to PR.’ (Community worker 4)

Adaptation of financial management

Difficulties in managing financial resources led to adaptations in the form of reducing resources at the association level and

prioritising direct payments. Table 1 presents the analysis of adaptation made.

Moderating factors of the community-based tuberculosis programme

Programme complexity

Respondents unanimously acknowledged the complexity of the community TB programme, which involved multiple stakeholders, numerous tools and collaboration with various actors.

‘The community program was very complex ... first of all, mastering the community program was not easy, and in particular, there were many tools to fill in ... collaboration with several actors’ (SR1 Programme Officer)

Facilitation strategies

A participatory approach was adopted during the programme formulation, involving stakeholders from start to finish. Efforts were made to ensure the programme was understandable to all actors through the provision of tools, manuals and descriptive materials.

‘The particularity of this project is that it really involved all stakeholders from the beginning to the end.’ (NTP Programme manager)

‘We had all the tools to collect the data and documents that explained how to conduct the activities.’ (Animator association Y)

Discussion

The results of this study provide insights into the fidelity of the implementation of a community-based TB programme in the central region of Burkina Faso. The findings indicate that all of component of programme were implemented. The training of community health workers, in particular, exhibited excellent fidelity, with the full content of the training being taught. However, several adaptations were made during the implementation process to address challenges and fit the local context.

Content adherence and adaptations made

Regarding content adherence, it was found that the training of community volunteers (animators) was implemented as planned, with all 44 volunteers being trained on TB active case finding and all planned modules being taught. The involvement of a multidisciplinary team in the training ensured the delivery of comprehensive content.

In addition, the selection of trainers was based on an academic requirement of seven years of primary education, ensuring that all planned modules could be effectively delivered. The educational background of the community actors played a crucial role in facilitating the training process (Bopp 2013).

Community workers were trained on various aspects of TB, including symptoms, preventive measures,

TABLE 1: Descriptors of specific adaptations made.**Descriptors of specific adaptations for the Community TB intervention****What: Strengthening the knowledge and capacity of the association's members in TB control, focussing on awareness raising, diagnostic activities (screening, contact tracing), adherence support, home-based care and support.**

Questions to identify adaptations	Components		
	Component 1: Animators training.	Component 2: Community work (awareness-raising, outreach and care activities),	Component 3: Identification of suspected cases and referral to health facilities.
What: Was the content of the component changed in any way ?	No adaptations.	The content of the community work was adapted. The frequency of activities was adapted.	No adaptations.
How: component has been implemented after adaptation	No adaptations.	Adaptations made: Finally, awareness-raising activities were replaced by door-to-door interpersonal talks only. Adaptations made: (1) Eventually these awareness-raising activities were replaced by door-to-door interpersonal discussions; (2) Interpersonal talks on TB; (3) Integration of TB activities into other programme (HIV programme, malaria programme); (4) Adaptation of financial management: Reduction of the financial resources at the level of the associations; Direct payments were privileged.	No adaptations.
How frequently: Was any adaptation introduced in the frequency of the implementation	No adaptation (no deletion, no addition, no modification). The training took place in 5 days as planned.	The frequency of implementation of activities was not respected. It was planned to have four activities per association per month, 12 activities per quarter. Adaptations made: The two animations were done in 2 weeks.	No adaptations.
To whom:	No adaptations.	No adaptations.	No adaptations.
By whom?	No adaptations.	No adaptations.	No adaptations.
Specifications related to the context: Was there any change in the number of associations?	No adaptations.	No adaptations.	No adaptations.

community mobilisation, awareness techniques and community-based TB care. This high fidelity in training is crucial as it ensures that the community workers possess the necessary knowledge and skills to effectively contribute to TB control efforts. These findings suggest that the programme successfully disseminated knowledge and skills to key stakeholders involved in TB control (Bopp, Saunders & Lattimore 2013; Dusenbury et al. 2003; Meyers et al. 2012).

Coverage adherence varied across different programme components. While the training of community workers achieved full coverage, reaching all targeted associations and individuals, the coverage of awareness activities and community care activities was relatively lower. In terms of community work, it was observed that activities related to community outreach and care were not fully implemented in the first year of the programme. However, subsequent years saw better adherence and optimisation of these activities. Despite all districts being covered by community activities, the outreach activities reached only 39% of the expected population. Similarly, the proportion of newly diagnosed TB patients receiving community care was only 22%. This means that a significant number of TB suspects remained in the community without proper referral to health facilities. These findings indicate the need for further efforts to improve the reach and coverage of these essential programme activities.

The study also identified three types of adaptations made during the implementation of the programme: organisational adaptations, adaptations of community health workers' activities and adaptations in financial management. Organisational adaptations involved operational activities carried out at the regional and district levels, which were not initially planned but proved necessary during implementation. Community health workers adapted their activities by integrating TB activities into existing programmes, such as HIV, malaria and nutrition, to ensure continued service delivery despite funding limitations. Financial management adaptations included reducing financial resources at the association level and prioritising direct payments because of challenges in resource absorption and financial reporting. Studies have already identified budgetary constraints as the cause of some modifications (Bodson et al. 2018; Ridde et al. 2013; Saré et al. 2018). However, these adaptations did not require deleting or adding activities or components that would disrupt the programme theory (Durlak & DuPre 2008; Saré et al. 2018). These types of adaptations allow the context of implementation to be taken into account, which would increase the effectiveness of the programme's implementation.

The schedule adherence

Schedule adherence revealed some delays and challenges in the implementation of activities. Compaore et al. (2017) and Ridde et al. (2013) have already highlighted this type of delay in community interventions in Burkina Faso. The training of

community workers experienced a delay of 1 year, which may have impacted the programme's early implementation. Additionally, outreach and awareness activities faced delays, resulting in fewer activities being carried out than initially planned. The timing of funding disbursements and resource availability played a significant role in these schedule deviations. These challenges highlight the importance of timely and consistent funding for programme implementation. In fact, Bodson et al. (2018) found that delays can threaten the credibility of the intervention by 'undermining the confidence of providers', creating doubts and uncertainties about their future in this programme. Additionally, these delays could prevent the achievement of the original objectives. Finally, the irregularity of the activities leads to a loss of skills and abilities to perform certain tasks because of what Ssenooba et al. (2012) have called 'the loss of institutional memory'. This situation could not only prevent the adoption of the programme by the different actors but could also hamper the sustainability of the intervention. Delays in the implementation of activities have played an important role in the low coverage of districts by community activities. This raises concerns about the ability of this intervention to effect change. Also, the modifications made (reduction in the frequency and duration of activities) are likely to prevent the required doses of change from being achieved; yet, the proportion of the population reached by the intervention (dose) is crucial for the visibility of positive effects (Chesworth et al. 2015). These delays are probably because of the time taken for preliminary activities (information meeting, staff recruitment).

The complexity of the programme and the need for facilitation strategies were evident. The community-based TB programme was perceived as complex by all participants, requiring coordination and collaboration among multiple stakeholders. The participatory approach used in programme formulation and the availability of tools, manuals and training materials contributed to the understanding and engagement of programme actors (Ridde et al. 2013; Saré et al. 2018).

Lessons learned

The first challenge is linked to whether the programme theory can be maintained despite the adaptations made. In our case, the programme theory remained intact as no components were removed. Moreover, the modifications enabled the continued implementation of the programme. Another challenge highlighted by the results is how to sustain ownership of the innovation in the face of limited financial resources. Community-based organisations require both organisational support and financial resources for the planned activities. In the absence of funding, the acceptance of the programme by these actors is mixed. Studies have demonstrated that without adequate funding, CBOs struggle to participate voluntarily in the implementation of public health interventions (Ridde et al. 2013; Saré et al. 2018). However, these study results indicate that patient organisations (TB and/or HIV) were willing to contribute because of the satisfaction of saving lives and improving the well-being of their community. A similar situation was

observed with traditional healers, who continued to raise awareness and refer suspected cases to the DTCs. According to the theory of diffusion of innovations, the characteristics of the organisations involved strongly influence the adoption of the innovation. In our case, patient associations (HIV, TB) and traditional healers continued their activities despite the lack of funding. This is partly because most HIV associations receive resources from the Global Fund and other donors (HIV, malaria funding). A major challenge is to prepare CBOs to handle potential budget cuts by enhancing their resilience. The third issue is directly linked to the previous two mentioned above; indeed, without genuine ownership of the intervention by the association leaders, the sustainability of this type of programme is questioned. The issue of dependence on external funding for programmes in Africa is once again highlighted by our study (Dane & Shneider 1998; Dusenbury et al. 2003). The inability of associations to ensure quality financial management raises the need to select strong associations with good organisation and resilient capacities to engage in community health programmes (Bodson et al. 2018; Ridde & Dagenais 2012). The characteristics of the providers, the implementing organisation, the programme participants and the community in which the implementation occurs are factors that either facilitate or hinder implementation (Bellg et al. 2004; Carroll et al. 2007; Durlak & DuPre 2008).

Contribution of this study

This study represents one of the pioneering investigations reporting on the fidelity of a community-based TB programme utilising non-profit organisations (associations). Thus, this study provides evidence supporting the possibility of entrusting programme management to CBOs. It demonstrates the feasibility of establishing a community system to support health facilities, wherein CBOs can generate evidence from a theoretical model. By addressing the gap in research on programme implementation in Burkina Faso, particularly regarding the implementation of a community-based programme exclusively managed by CBOs, this study offers valuable insights. The findings from this study will contribute to a more comprehensive evaluation of the programme's effects and aid in drawing more robust conclusions. Furthermore, the results of this study have the potential to enhance the design and implementation of similar programmes in comparable contexts.

Limitations

This study focussed specifically on all DTCs in the capital city and therefore cannot be generalised to the entire country. It is important to note that evaluation research of this study is highly context-specific. While memory bias during interviews posed a potential limitation, this was mitigated by the availability of comprehensive programme documentation. Additionally, triangulation of multiple data sources was employed to enhance the validity of the findings of this study. Although there was a time gap between the project's completion and the study, it is worth noting that the analysis pertains to implementation evaluation, which is not time-sensitive.

Conclusion

These findings have implications for programme implementation and sustainability. While the fidelity of the community-based TB programme in Burkina Faso was generally high, the identified challenges and adaptations highlight the importance of continuous monitoring, flexibility and resource availability. Strengthening funding mechanisms and ensuring timely disbursement can enhance programme adherence and coverage. Moreover, efforts should be made to improve the reach of awareness activities and community care services to maximise the programme's impact.

Overall, this study provides valuable insights into the fidelity of a community-based TB programme in Burkina Faso. It contributes to the understanding of programme implementation challenges, adaptations made, and the facilitation strategies employed. The findings can inform future programme planning, implementation and refinement to enhance the effectiveness and sustainability of community-based TB interventions in similar settings.

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Competing interests

The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

Authors' contributions

F.M.G.D. conceptualised the research design, and was involved in data curation, formal analysis, investigation, methodology, writing the original draft, and reviewing and editing. O.G.S. conceptualised the research design, and was involved in data curation, formal analysis, methodology, validation, and in writing, reviewing and editing. R.C. conceptualised the research design and methodology, and was involved in writing, reviewing and editing. E.W.M.Y. conceptualised the research design, and was involved in data curation, formal analysis, and writing, reviewing and editing. S.K. conceptualised the research design, and was involved in data curation, methodology, supervision, validation, and

writing, reviewing and editing. H.T. was involved in writing, reviewing and editing.

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Data availability

The data that support the findings of this study are available on request from the corresponding author F.M.G.D.

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