

Case Study

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Incorporating the Next Generation in the Fight to End TB: A Case Study of TB Service Provision by Peer Support Groups among Secondary School Students in Badagry LGA

Rotimi Ojo O^{1*}, Alege A¹, Kadri B², Agbaje A², Daniel O², Lawanson A², Jatula O¹, Anyaike C³, Sokoya D⁵, Eneogu R⁴ Nongo D⁴ and Mensah C²

¹Society for Family Health, TB-LON 3 Project, Nigeria

²Institute of Human Virology Nigeria, TB-LON 3 Project, Nigeria

³National Tuberculosis, Leprosy and Buruli Ulcer Control Program, Nigeria

⁴Office of HIV/AIDS and Tuberculosis, USAID Nigeria

⁵State Tuberculosis, Leprosy and Buruli Ulcer Control Program, Nigeria

ABSTRACT

Background: Children can play a crucial role in ending tuberculosis (TB) by raising awareness about the disease and promoting healthy behaviors among their peers. Engaging children in ending TB requires a child-friendly approach and platforms such as schools that recognize their unique needs and perspectives. This study aims to determine the impact of peer education on the uptake of TB screening and TB case findings among secondary school children in the Badagry LGA area of Lagos State.

Method: Between October 2021 and March 2022, 50 senior students were selected from 7 secondary schools and trained as TB peer educators. These students were tasked with the responsibility of increasing awareness of tuberculosis among students and to also facilitate their access to TB testing services.

Results: The results showed a statistically significant association between Peer TB screening and TB diagnosis. There was a 1000% increase in the number of students screened for TB (from 4699 to 49198 clients) and a 400% increase in TB case finding (from 23 to 93 cases) among secondary school students.

Conclusion: Involving children in TB activities is crucial to the success of ending the tuberculosis epidemic and achieving the END TB goal.

*Corresponding author

Oluwatimilehin Rotimi Ojo, Society for Family Health, TB-LON 3 Project, Gemade Estate, Lagos, Nigeria.

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Introduction

Tuberculosis remains a significant global health challenge, contributing significantly to child morbidity and mortality. In 2022, 1.25million children and adolescents fell ill with tuberculosis and 214,000 children and adolescents died of TB accounting for 16% of the total deaths from TB in the year, and the treatment coverage gap remains highest in children [1]. The World Health Organization's strategy to end the global tuberculosis epidemic is through a holistic combination of health and social interventions that places the patients and communities at the heart of the response [2].

Nigeria is one of the thirty countries with a high burden of tuberculosis in the world as reported in WHO Global TB Report, 2023 [3]. It is also one of the countries accounting for the global gap between estimated TB incidence and the reported number of people newly diagnosed with TB in 2022. Lagos state is one of the

states with the highest burden of TB in the country. According to the population, and based on the prevalence, there is an estimated annual 54,000 incident cases of TB in 2021 of which only 13,475 TB cases were notified in 2021 leaving a large number of TB cases undiagnosed and therefore, untreated. This means that about 80% of the estimated TB cases in Lagos State remain undetected and are in the community infecting an average of 10-15 persons annually [4]. Of the 316,680-missing people with TB in Nigeria, 68,651 were children [5].

Childhood TB is an indication of active transmission of TB within a community and identifying children with TB can be a good link to detecting more TB cases within the community. It is therefore important to incorporate strategies to intensify TB awareness and increase the utilization of TB services among children.

Peer-led interventions among young people are a promising strategy for promoting healthy behavior, especially in school

settings [2]. Studies show that school-based peer interventions are effective in disease prevention including hepatitis, tuberculosis, cervical cancer, and blood-borne diseases [6]. A study conducted in Botswana, assessed the difficulties faced by healthcare workers (HCWs) and their approach to delivering TB services to adolescents and young adults. The findings indicated that HCWs preferred peer support groups tailored to adolescents and young people living with TB as it facilitated education and overcoming issues related to isolation and stigma [7].

In HIV prevention intervention programs globally, peer education was described as the core pillar of HIV prevention efforts improving knowledge and behavioral change [8].

Achieving the END TB goal requires innovative strategies to effectively engage communities. Children can play a crucial role in ending TB by raising awareness about the disease and promoting healthy behaviors among their peers. Recognizing the pivotal role that children can play in this endeavor, this intervention forms the crux of the study titled “Incorporating the Next Generation in the Fight to End TB: A Case Study of TB Service Provision by Peer Support Group among Secondary School Students in Badagry LGA. The main aim of this study is to determine the impact of peer education on the uptake of TB screening and TB case findings among secondary school children in the Badagry LGA area of Lagos State.

Methodology

The initiation of the process was conducted by TBLON 3 Project in Lagos State, across 7 secondary schools in Badagry LGA between October 2021 and March 2022. A preliminary advocacy visit was conducted to a school after 5 students from the school were diagnosed with TB following a routine community outreach. Subsequently, the teachers were engaged and sensitized on TB, while all other students and staff were screened.

As part of the scale-up and optimization plan, the top 10% hotspots (with the lowest NNS) indicating a high burden of TB were identified within Badagry LGA, using the geospatial mapping platform, EPICON. Then seven schools within these hotspots were randomly selected for TB screening and setting up peer support groups.

Before the screening in each school, stakeholder sensitization meetings were held in each of the schools with the concerned school principals, class teachers, and parents’ forum executives in attendance. This was done to get the buy-in of all necessary stakeholders and parents were encouraged to be present during the activities.

Ahead of the screening process, a comprehensive awareness campaign about TB was carried out for all students during the school assemblies. After this, the teachers within each school were required to nominate students who would be peer advocates for TB. The inclusion criteria of nominated students were those among the upper 25th percentile who got parental consent and are willing to participate. While the exclusion criteria were those on any long-term disciplinary action or those having major examinations at hand.

The selected students were then trained on the facts about TB, its symptoms, diagnosis, duration of treatment, prevention, and strategies to combat stigma. The training included interactive elements such as question-and-answer sessions and role plays. Furthermore, the selected students worked with the designated

community health workers and school health officers for screening across all classes and also to provide support for treatment adherence for children diagnosed with TB.

The screening was done for 6 months using the standardized WHO four symptom screening (W4SS) checklist along with mass chest x-rays using the LSMOH/GMU CAD4TB enabled mobile X-ray vans when available. The screening was in parallel algorithm with presumptive TB cases identified by either means. Children who could produce sputum samples were encouraged to do so while some had their stool samples taken and these were all processed using the GeneXpert/Rif assay. Those who couldn’t produce either had their chest radiographs reviewed by a radiologist and were then clinically diagnosed by a physician afterward.

Results

The study aimed to assess the impact of peer education on TB screening and case finding among secondary school children in Badagry LGA, Lagos State. The intervention involved training 50 senior students from 7 secondary schools as TB peer educators between October 2021 and March 2022.

A t-test analysis was used to compare the screening and TB case-finding data before and after the intervention with the level of significance set at <0.05 to determine the level of association of peer education on the uptake of TB screening and TB case-finding in the schools over this period.

The results showed a statistically significant association with p-value < 0.05 for TB screening and TB diagnosis. There was a 1000 % increase in the number of students screened for TB (from 4699 to 49198 clients) and a 400% increase in TB case finding (from 23 to 93 cases) among secondary school students.

The table below summarizes the findings of this study;

Table 1: Table showing the TB indicators before and after intervention

Indicators	Before the intervention (April-Sept 2021)	During the period of intervention (Oct-March 2022)	Percentage Increase (%)
Total school children Screened for TB	4699	49198	1000%
Total school children presumed to have TB	586	2868	480%
Total school children evaluated for TB	585	2845	480%
Total school children diagnosed with TB	23	93	400%
Total school children enrolled on treatment	17	87	510%

Discussion

The results of this intervention highlight the significant impact of incorporating the next generation through peer support groups in the fight against Tuberculosis (TB), specifically among secondary school students. It improves the access of children to TB services and leading to increased TB case finding among school children and in the community at large.

The significant increase of 1000% in the number of students screened for TB from 4699 to 49198, highlights the effectiveness of the peer support group initiative. Engaging students as peer educators, played a pivotal role in creating awareness, dispelling

myths, and encouraging their peers to actively participate in TB screening. The increased TB screening amongst students was not only useful in identifying active TB cases in the schools but also within the community and preventing the further transmission of TB in the community. This emphasizes the importance of employing a peer-led model in school settings and harnessing the power of student networks to disseminate critical health information. This is consistent with the findings of an innovative experiment conducted in India, where students were engaged as TB ambassadors, creating awareness across schools and within their communities [9].

Furthermore, the notable 400% increase in TB case identification from 23 to 93 cases suggests that involving the next generation through peer support groups not only enhances awareness but also contributes to the identification of TB cases within the community. This increase in case finding is particularly relevant in the context of childhood TB as an indicator of active transmission within a community. Actively involving secondary school students in the TB screening process establishes a foundation for early detection and intervention, which is crucial in the broader strategy to combat TB.

The study emphasizes engaging children in advocating for TB awareness within their communities highlighting schools to act as catalysts for broader community health initiatives. Also, the method of incorporating stakeholder sensitization and peer-led interventions demonstrates comprehensive community involvement. Thus, collaborating with local authorities, school administrations, parents, and teachers played a crucial role in the success of the intervention. However, sustaining the momentum beyond the period of intervention and ensuring the continuous effectiveness of peer educators present challenges that require consideration in future endeavors.

Drawing parallels with successful HIV prevention programs globally, Peer education emerges as a cornerstone of successful public health interventions [10]. Findings from this study reinforce the potential of peer-led initiatives in increasing access to TB services, showcasing its scalability in the broader efforts to end the TB epidemic.

While the intervention was conducted in Badagry LGA, the implications extend far beyond this specific locale. The success of the peer-led model suggests that it can be replicated across communities in other locations. The use of geospatial mapping to identify hotspots and target areas with the highest TB burden illustrates a strategic allocation of resources, enhancing the efficiency of interventions and serving as a valuable tool for TB control programs globally.

The outcomes of this study affirm that involving children in TB prevention and care activities is not only viable but crucial for attaining the global goal of ending the TB epidemic. The child-friendly approach, as demonstrated by the peer-led model, recognizes the unique needs and perspectives of children, making health interventions more accessible and impactful.

Conclusion

In conclusion, the intervention generally improved the TB care-seeking behavior among secondary school students across the major TB care cascade (TB screening, presumptive identified, presumptive evaluated, TB diagnosed and enrolled on treatment), thereby demonstrating the effectiveness of child-friendly, peer-led

interventions in increasing TB case finding, especially amongst children.

Incorporating the next generation in the goal to END TB through peer support-led interventions might be the missing link to achieving the END TB goal.

Recommendations

Our findings suggest that National TB Control Programs and various public health practitioners should include peer-led interventions and school health programs in strategies for combating the TB epidemic, while policymakers should incorporate TB education into the school curricula. These collaborative efforts are vital in achieving the END TB goal and fostering a culture of health among the next generation.

Future research should explore the long-term impact of peer-led interventions, including among out-of-school children, and their lasting impact on TB prevention and care. Additionally, assessing the scalability of this model to other states and countries with varying sociodemographic contexts will contribute to refining and adapting the approach.

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Conflicts of Interest

There are no conflicts of interest.

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