



Community- based Active Tuberculosis Case Finding in Pastoralist Communities of North-Eastern Uganda

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Authors' contributions

This work was carried out in collaboration among all authors. Authors GI, EJR, NS and NG conceived, designed the study, participated in data collection, analysis and manuscript writing. Author PDO was the site preceptor during the research period where he supervised the data collection and analysis. Authors PO and JSI performed the statistical analysis, wrote the protocol and managed the literature searches wrote the first draft of the manuscript, managed the analyses of the study. Author RN was a research mentor and supervisor who participated in the study conception, design, preparation for approval and proof reading of the final results and manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Background: Given the global urgency to improve tuberculosis (TB) case detection, a renewed interest in active case finding (ACF) has risen. Missed TB cases pose a serious threat as they continue to fuel TB transmission in the community. We aimed to assess the feasibility of community based ACF for TB among people living in a pastoralist community in Uganda and determine its impact on case detection and treatment uptake.

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Methods: Between April and May 2019, four third year medical and nursing students placed at Moroto Regional Referral for community orientation worked together with community health workers to conduct a door-to-door survey for TB in pastoralist communities of Nadunget Sub County, Moroto district. The community health workers and the Medical/Nursing students performed symptom screening, collected sputum and facilitated specimen transport to the laboratory. Gene Xpert MTB/RIF assay was performed at the regional referral Hospital for all sputum samples. The community health workers were tasked to follow up on all those clients whose samples turned out to be positive so that they could start treatment as soon as possible. All presumptive cases with negative sputum results were referred to the TB clinic for further evaluation.

Results: In one month, we screened 385 individuals and identified 143 aged above 15 years with symptoms suggestive of TB. Among the presumptive cases, 132 (92%) reported a cough of more than two weeks and we were able to obtain sputum samples from 84(58.7%) participants. We diagnosed 11, including 8 bacteriologically confirmed TB cases using Gene Xpert and there was no multidrug resistant case identified. The median time from sputum collection to notification of the positive result was 3 days. All the positive cases were followed up and initiated on treatment.

Conclusion: The findings from our study suggest that in a pastoralist community, ACF for TB using a sensitive symptom screen followed by Gene Xpert contributed to improved case detection of TB, shortening the turnaround time hence timely initiation of patients on TB treatment.

Keywords: Tuberculosis; gene xpert; case finding and multidrug resistance.

1. INTRODUCTION

Tuberculosis (TB) remains one of the most dreaded diseases and leading cause of death from a single infectious agent [1]. It is caused by *Mycobacterium tuberculosis* and its fatality are very distinct in the pages of history. TB affects different ages and is a major contributor to disease burden in most of the developing countries[2]. Despite the progress made in the last decade, Uganda remains one of the countries with the highest TB burden [1]. Missed TB cases pose a serious threat as they continue to fuel TB transmission in the community. TB case notification, which heavily relies on symptomatic individuals voluntarily seeking care at health facilities as advocated for by WHO have stagnated[2]. Several TB prevalence surveys have indicated up to 40% of new TB cases remain undiagnosed despite the implementation of directly observed treatment (DOTS) strategy [3]. This Passive case finding strategy has proven to be inadequate to control TB [2].

A number of studies from different settings identified hindrances to early detection of TB which included, geographical or socio-psychological barriers [4], the time taken to access TB care services, the expenses incurred, inadequate funding of health services [5], limited staff capacity, and poor capacity building [6], among others.

The TB burden is high in poor and marginalized communities who face many barriers to access

health care services e.g. lack of TB awareness, competing priorities in terms of time and money, long distances to health facilities, and shortage of experienced personnel among others [7]. Karamoja region is a pastoralist community where people live in grass thatched houses (locally known as "Manyattas") which are poorly ventilated and congested. The long distances moved by these nomadic pastoralists in search of pasture and water, disconnects them from accessing TB services from facilities.

There is need for innovative strategies to complement facility based passive case finding. One such strategy, is active case finding (ACF) which involves systematically identifying individuals in the community with signs and symptoms of active TB. ACF has gained interest in the last decade [7] and aims at reducing barriers to early TB case detection, including delay in presentation to a health facility[8]. ACF reduces the risk of poor treatment outcomes, prevalence of TB related deaths, and transmission of TB by shortening the duration of the infectious period [1].

The revised National TB/Leprosy control program aims to eliminate TB by 2025. To achieve this, early initiation of treatment which, in turn, depends on diagnosis would play a big role. For complete diagnosis of the estimated cases of TB, there is need to identify nearly 40% of missed cases. Active case finding was proposed under the National TB and Leprosy Program (NTLP) to enhance TB case finding[9]. In Moroto, 60%