

FACTORS ASSOCIATED WITH COMMUNITY-BASED TB CARE IN THE OMAHEKE REGION, NAMIBIA

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ABSTRACT

Background: This study investigated factors associated with the successful implementation of community-based tuberculosis (TB) care in the Omaheke region, Namibia. The TB control and management programme appeared to be ineffective in this region. TB treatment outcomes revealed a 51.4 percent defaulter rate, 3.0 percent case detection rate and 28.0 percent cure rate (MoHSS 2004:83). The introduction of community-based TB care was envisaged to improve the TB treatment outcomes. A non-intervention design was used to identify factors that the community members felt could facilitate the implementation of this strategy.

Results: More service-related than community-related factors that influenced the successful implementation of community-based TB care in the Omaheke region of Namibia were identified.

Conclusion: The study concluded that the point of departure for the implementation of community-based TB care was the acknowledgement by the community and nurses that TB was a problem and that community-based TB care was the appropriate strategy to address this problem.

Keywords: community-based TB care, TB community-related factors; TB service-related factors; TB care; TB treatment outcomes; tuberculosis (TB).

Abbreviations used in the article

MTB – military tuberculosis
PTB – pulmonary tuberculosis
TB – tuberculosis
UN – United Nations

INTRODUCTION

In the latter part of the previous century, elimination of TB seemed probable because anti-TB drugs raised confidence that TB, like any other infectious disease, could be

conquered by drug therapy. The United Nations (UN) even predicted worldwide elimination of TB by the year 2005 (NIAID 2002; Schraufnagel 1999). Nevertheless, TB did not go away; in fact, it is now a resurgent disease in many regions of the world, mostly fuelled by poor control programmes, HIV and poverty. Not even industrialised nations have escaped the increased incidence of TB (Knight 2000; Porter & Grange 2002).

It is estimated that nearly one third of the world's two billion inhabitants are infected with the TB bacillus and are at risk of developing active TB. More people die from TB than from any other curable infectious disease in the world. Accounting for 26 percent of preventable deaths, TB is the leading cause of death among young women (Porter & Grange 2002; Raviglione 1999; Reynolds 2001). On average one person with pulmonary tuberculosis (PTB) infects 10 to 20 people a year, of whom six develop active TB (Knight 2000; Saeed 1999). Potential transmitters of military tuberculosis (MTB) are persons who are coughing and are sputum positive, not on treatment or those with poor responses to their treatment regimens. The most important risk factors for becoming infected with MTB are the length of contact with an infected source and the number of bacilli in the air (Rieder 2002; WHO 2001).

Although anyone from any level of society can contract TB, the disease predominantly strikes the poor, with inadequate nutrition and living conditions trapping its victims in a vicious circle of poverty and disease (Bouwer, Dreyer, Herselman, Lock & Zeelie 2001; DoH 1996; DoH 1997; Porter & Grange 2002; Knight 2000). TB not only reflects poverty but also aggravates it by making the poor poorer as they fall sick and lose income (WHO 2001b). Illness and death from TB reinforce and deepen poverty in many communities, since 75 percent of TB-related diseases and deaths occur among the most economically productive segment of the population, people aged 15 to 54 years. If a patient dies from TB, an average of 15 years of income is lost (Reynolds 2001; WHO 2003).

One of the main objectives of TB control is to reduce transmission in the community through early detection of sputum –smear-positive PTB cases and the rapid implementation of a full course of TB treatment (Lienhardt, Rowley, Manneh, Lahai, Needham, Milligan & McAdam 2001). The treatment of TB is one of the most effective health interventions, yet TB remains the leading cause of death from infectious diseases worldwide (Ustianowski & Zumla 1998). The key to protecting the community from TB remains efficient early detection, and identifying the source of infection to ensure correct treatment and cure of all smear-positive patients with the initial treatment regimen (Beyers, Donald, Van Helden, Ehlers, Steyn & Mizrahi 1996; DoH 1996; Hurtig, Porter & Ogden 1999). Moreover, when TB is diagnosed early and the patient is not seriously ill, a 100 percent cure is possible because the TB microorganisms are not resistant to the TB treatment (Enarson, Rieder, Arnadottir & Trébuq 2000).

Case detection and treatment of TB are two of the major activities of community-based TB care. The WHO emphasises the need for equitable and discrimination-free access

to TB treatment and cure for all TB sufferers (WHO 2001a). Lack of access to care and resources impacts negatively on patients' efforts to adhere to TB treatment (Edington 1999). An integral part of an effective health care strategy is decentralising TB control measures and harnessing the contribution of communities to ensure increased access to effective TB treatments beyond health facilities (Baris 2000; Hadley & Maher 2000). The more TB treatment is extended beyond hospital or clinic walls and the control of "experts", the greater the chances of successful TB control and treatment outcomes (Mushtaque & Chowdhury 1999). Community-based TB care makes it easier for a patient to access treatment without travelling long distances involving transportation expenses or waiting long hours to be served at clinics (Balt, Edington, Lotter, Preller & Uys 1998).

The main aim of community-based TB care is to maximise TB treatment as close to the patient's home as possible (WHO 1997). Harnessing the participation of the community is of great importance, as this has the potential to alleviate government's limitations such as shortages of resources, including staff, transport and time (Harries, Kenyon, Maher, Floyd, Nyarko & Nkhoma 2001; Maher, Floyd, Sharma, Jaramillo, Nkhoma, Nyarko, Wilkinson & Raviglione 2003).

The training of family members of TB patients and significant community members enhances compliance and adherence to treatment as they encourage, observe and document daily treatment and assist in providing information and education on TB to their communities (Glatthaar & Barends 1995). Collaboration and cooperation with the TB patients and the community are essential to ensure patient compliance (Kurec 1996).

OVERVIEW OF TB IN NAMIBIA

Namibia is Africa's fifth-largest country. It covers 824 268 square kilometres and has a population density of 2.2 people per square kilometre (GRN Census 2003). A number of communities still live without adequate access to health care (MoHSS 2000). The main challenges of TB control in Namibia include:

- difficulty in accessing TB care, as the sparsely distributed population means that many patients live in inaccessible areas many kilometres from clinics
- lack of public transport
- inadequate knowledge about TB among both the community and nurses/health care workers
- an inability to conduct follow-up visits to monitor discharged TB patients as health care workers lack transport.

Namibia reported a new smear-positive TB rate of 231/100 000 and case notification TB rate of 647/100 000 (WHO 2004). According to the MoHSS (2004) the TB treatment outcomes for sputum-positive TB patients in 2001 were: Forty percent cure; 5

percent treatment failure; 12 percent death; 13 percent defaulters; 25 percent treatment completed and 5 percent transfer rates out of Namibia. The overall treatment success rate was 65 percent.

Overview of TB in the Omaheke region

The study was carried out in the Omaheke region, one of Namibia's 13 administrative regions covering 84 732 km², with a population of 68 039 people. This gives an average population density of 0.8 persons per square kilometre (GRN Census 2003). In 2000, 541 cases of all forms of TB were recorded in the Omaheke region, giving a case notification rate of 815/100000 population. In 2001, 586 cases were recorded, giving a case notification rate of 861/100 000 (Oxfam 2002:37). Reviews of the TB programme in the Omaheke region showed that the TB control and management programme was ineffective, with poor TB treatment outcomes: a 51.4 percent defaulter rate, 3.0 percent case detection rate and 28.0 percent cure rate. Ratified international targets by the WHO are to detect 70.0 percent of new TB cases and cure 85.0 percent of them (DoH 2000:7; Oxfam 2002:37; WHO 2004:141).

Table 1 shows the vast distances between the clinics and the referral hospital, distances between the clinics in the region, and furthest points patients have to walk to reach their nearest clinics to access TB treatment services. These distances, centralised TB services, the stigma attached to TB by both the community and health workers, as well as the challenges mentioned above, justified the introduction of community-based TB care in the Omaheke region. This would bring TB treatment as close to patients' homes as possible in an effort to enhance the TB treatment outcomes for the Omaheke region (MoHSS 2000).

One of the major reasons for poor treatment outcomes in the region was the absence of community-based TB care strategies, resulting in a lack of community participation in TB management. TB services were centralised, and more than 89.0 percent of the rural population in the Omaheke region had to walk more than one hour to reach a health facility, making TB care inaccessible to many TB patients.

The research question

The research was planned to answer the following question: What community and service factors could encourage the successful implementation of community-based TB care in the Omaheke region?

Assumptions

It was assumed that community members with signs and symptoms of TB would seek early diagnosis and treatment of TB after receiving community education. It was also

Table 1: Number of clinics in the Omaheke region and distances between clinics

CLINIC	POPULATION	DISTANCE FROM GOBABIS	FURTHEST DISTANCE FROM CLINIC
1. Aminus	5 900	185 kilometres (km)	110 km
2. Corridor	2 017	210 km	80 km
3. Eisab Block	1 378	460 km	80 km
4. Epako	25 668	in Gobabis	150 km
5. Epukiro Pos	7 000	132 km	225 km
6. Leonardville	2 826	137 km	65 km
7. Omitara	3 000	130 km	70 km
8. Onderombapa	2 500	125 km	70 km
9. Otjinene	8 000	181 km	194 km
10. Sendingplaas	2 000	100 km	50 km
11. Tallismanus	5 000	230 km	125 km
12. Witvlei	2 750	50 km	70 km

assumed that people living in underserved areas would prefer home-based to institutional-based TB treatment.

RESEARCH METHODOLOGY

Population

All community leaders, community members residing in the Omaheke region and nurses working in health facilities in the region comprised the population for this research project. The defined population was chosen because all people residing in the region are at risk of becoming infected or affected by TB, and nurses are at the forefront of the control and management of TB in the Omaheke region.

Recruitment and training of research assistants

Research assistants were members of the community who spoke the local languages of the specific clinics' catchment areas from where they had been recruited. They were people who had shown an interest in TB and had reached Grade 12. They received training about TB, the study's purpose and methodology, and in conducting structured interviews.

Meetings and workshops were held to inform the community leaders, community members and nurses about community-based TB care.

Research design

The study had a non-intervention descriptive design to establish the views of the community and the nurses on community-based TB care as a new strategy for TB control and management in this region.

Sampling methods

The study employed simple random sampling with replacement to ensure that each population element had a non-zero chance (Cooper & Schindler 2003) of being included in the sample. This yielded 54 leaders and 100 community members as participants. The population of 40 nurses involved with TB care in the Omaheke region participated in the study.

Ethical considerations

Permission to carry out the research was obtained from the MoHSS and from the Omaheke regional health authority. Each participant gave verbal consent to participate in the study. Participants were assured of confidentiality and it was explained that they could discontinue at any stage, or refuse to answer specific questions without suffering any ill effects whatsoever. No remuneration was paid.

Data analysis

Open-ended questions were coded, making them quantifiable for analysis. Data entry and analysis were done by means of the Epi Info 2000 program and the Microsoft Excel program was used to generate figures and graphs. Data analysis involved categorising, ordering and summarising the data and describing these results in meaningful terms. Tables and graphs were used to render the quantitative information more meaningful (Bless & Higson-Smith 2000:137-138; Brink 1999).

RESEARCH RESULTS

The use of structured interviews, in which the interviewers visited each interviewee, ensured a 100 percent response rate in all the samples.

Biographic information

Men were more dominant in leadership positions, with 87.0 percent representation among the community leaders.

Knowledge about TB

Both study groups (community members and community leaders) acknowledged TB to be a problem in the Omaheke region. However, they displayed inadequate knowledge of the causes, spread and symptoms of TB. Figure 1 shows the causes of TB identified by the participants.

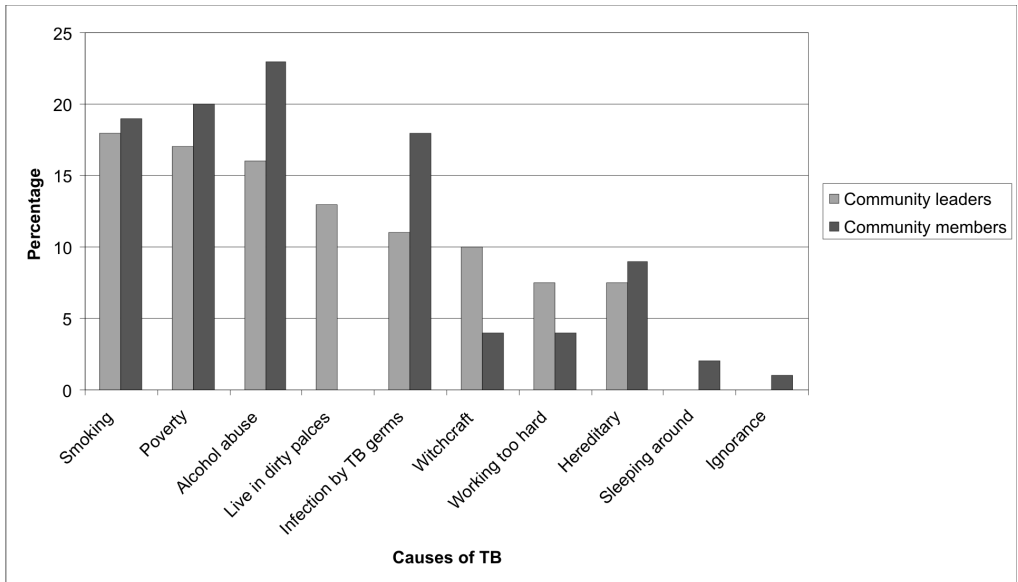


Figure 1: Causes of TB as identified by the community leaders (n=54) and community members (n=100)

Acceptance of the implementation of community-based TB care

In order for the community-based TB programme to be implemented successfully, it was critical that the community leaders and members as well as the nurses should accept it and cooperate. Although the community lacked knowledge about TB they acknowledged it to be a problem in the Omaheke region (see table 2) and accepted that the community-based TB programme could help to address this problem.

Reasons given for accepting the community-based TB care strategy included that the following:

- The community must solve their own problems. TB kills many people before they have a chance to go to distant clinics. TB patients often have no bus fare. If they do manage to go to the clinics they wait for many hours and sometimes return without treatment. Therefore people are afraid to go to the clinic when they have TB.

Table 2: Opinions of respondents from the two samples on the implementation of community-based TB care

ACCEPTANCE LEVEL OF THE COMMUNITY TB CARE	COMMUNITY LEADERS	COMMUNITY MEMBERS
Strongly agree	74.0%	57.8%
Agree	13.0%	21.1%
Neutral	0%	0%
Disagree	13.0%	14.4%
Strongly disagree	0%	6.7%

- Community-based TB care will be good for the psychological support of patients and their families, especially if health workers could visit and support them.
- The community will be empowered to look after themselves and fight TB in the Omaheke region.
- The community members have time to attend to TB patients and help them to complete their treatment without defaulting.

The reasons given for not accepting the community-based TB care strategy included that the community members are not trained to handle drugs, it is not the work of the community but the hospital to treat TB, patients will default when at home and continue to spread TB, and that some patients might be drunkards who are difficult to handle.

Knowledge-related challenges (n=99)

Other reasons given for not accepting community-based TB care included lack of knowledge about TB in the community (38.2 percent), poor community involvement and participation (25.3 percent), and lack of political support and inadequate knowledge of TB control by nurses (18.2 percent each).

Suggested solutions

The following solutions were suggested: Community education on TB, training of nurses to treat TB, increased supervision of clinic nurses by the district staff, and promotion of knowledge on TB to gain consensus of the community on methods to control it.

The burden of TB (n=68)

Responses to a question concerning the burden of TB included the HIV pandemic (36.8 percent), the shortage of nurses (32.4 percent) and the increasing numbers of TB patients (30.2 percent).

Suggested solution

It was suggested that the number of the nurses be increased to deal with the increased burden of the disease.

Table 3: Factors associated with the successful implementation of community-based TB care in the Omaheke region

SUGGESTED FACTORS	Community members	Community leaders
Incentives for the TB patients	29 (10.4%)	22 (10.1%)
Incentives for the TB treatment supervisors	45 (16.1%)	35 (16.1%)
Regular support from the nurse	39 (13.9%)	37 (17%)
Health education to the community, TB patients and family members	63 (22.5%)	48 (22%)
Establishing community-based structures for TB	8 (2.9%)	15 (6.9%)
Training of nurses in community-based TB care	27 (9.6%)	0
Training community on community-based TB care	0	0
Government assistance with food for TB patients	14 (5%)	23 (10.6%)
Community leaders to participate in TB control	0	12 (5.5%)
Strengthening TB education to the San	0	9 (4.1%)
Multisectoral approach	3 (1.1%)	6 (2.8%)
Provision of transport for follow up of patients	0	5 (2.3%)
More nurses at clinics	0	3 (1.4%)
Regulation to support community-based TB care	0	3 (1.4%)
Support of DOTS supervisors by NGOs	14 (5%)	0
Involvement of the community and employers	31 (11.1%)	0
Support from community leaders	7 (2.5%)	0
Total responses	280 (100%)	218 (100%)

* DOTS: Directly Observed Treatment Short Course

The respondents identified more service-related than community-related factors that required consideration during the planning and implementation of community-based TB care in the Omaheke region.

Advantages resulting from the implementation of community-based TB care in the Omaheke region of Namibia

Figure 2 displays the most frequently mentioned advantages envisaged to emanate from the implementation of community-based TB care in the Omaheke region.

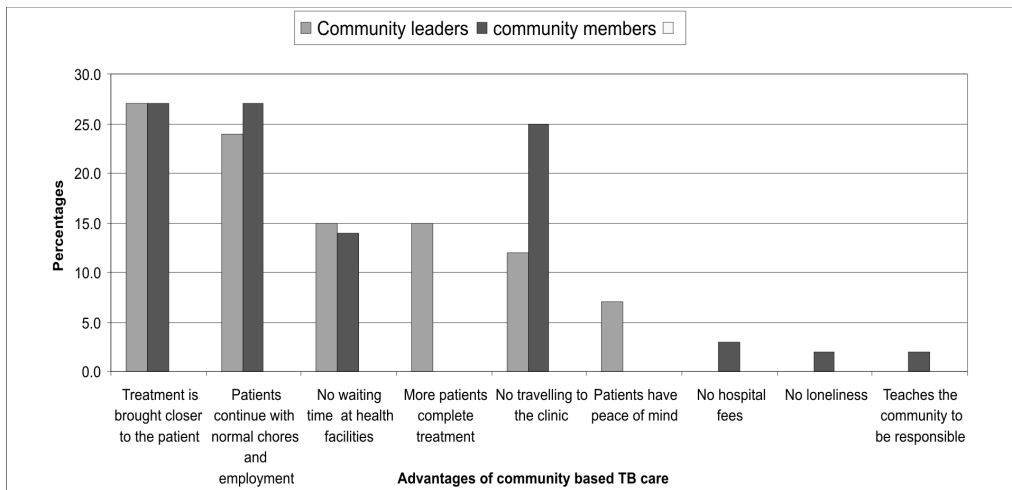


Figure 2: Advantages resulting from the implementation of community-based TB care as identified by respondents

Disadvantages of community-based TB care

Table 4: Disadvantages of community-based TB care as identified by the respondents from the three samples of the study (n=218)

IDENTIFIED DISADVANTAGES	COMMUNITY LEADERS	COMMUNITY MEMBERS
Alcohol and drug abuse resulting in defaulting from treatment	9	19
Poor supervision of TB patients and their treatment supervisors	0	17
Easier for patients to default (community cannot be trusted)	9	0
Poor drug management	6	15
No food at home to take before taking the treatment	0	15
Patients continue to spread TB	5	10
Burnout for TB treatment supervisors	9	0
Nurses will not consider TB work as theirs	0	6
It's difficult to work for nothing	3	0
Increased home deaths from TB	0	0
Poor record keeping by the community	0	0
Many still believe in witchcraft	0	0
TOTAL	41 (18.8%)	82 (37.6%)

Even if these respondents accepted the community-based TB strategy, they had some doubts about its successful implementation as displayed in table 4.

DISCUSSION OF FINDINGS

Through the participation of the community and nurses, the study contributed to the available knowledge about community-related and service-related factors associated with community-based TB care.

Figure 1 reveals that the community confused the risk factors or predisposing factors with the causes of TB, indicating a lack of knowledge about TB. The community needs to know the symptoms of TB so that they can report cases promptly (Fanning 2000).

Community-based TB care provides opportunities for widely available and accessible TB diagnosis and treatment of the poor. At the moment, even where health facilities are available, patients often choose not to use them because they are dissatisfied either with treatment, long waiting times at clinics, lack of medicines or lack of personal attention by health care providers (Ogden, Rangan, Uplekar, Porter, Brugha, Zwi, & Nyheim 1999).

The study population identified the following service-related and community-related factors that needed to be considered during the planning and implementation of community-based TB care:

Service-related factors

- Government assistance with food for TB patients
- Establishment of community-based structures to support TB work
- Training of nurses in TB control and management
- Transport availability for follow-up of patients
- Increase in numbers of nurses/health workers
- Incentives for treatment supervisors and patients
- Regulation to support putting community-based TB care in place
- Support from NGOs in implementing and maintaining a multisectoral approach to TB control activities.

Community-related factors

- Community education and training, and education of the patient and his/her family
- Involvement and participation of community leaders and the community in TB control activities
- * Strengthening of TB education targeted at the San community
- Government assistance with food for TB patients
- Regulation to support putting community-based TB care in place.

This study listed the factors identified by the community and nurses in the Omaheke region as being associated with the successful implementation of community-based TB care. Therefore, the study concluded that the point of departure for the implementation of community-based TB care was the acknowledgement by the community and nurses that TB was a problem and that community-based TB care was the appropriate strategy to address this problem.

Limitations

Although the present study had satisfactory findings, it nevertheless had some limitations. Nine interviewers were used to collect data and this could have introduced variability. However, interviewers received standardised training and were supervised and data collection tools were pre-tested to mitigate methodological limitations caused by interviewer disparity.

RECOMMENDATIONS

Acceptance of the concept of community-based TB care and participation in its implementation by the intended actors is central to the success of the implementation of this strategy. It is therefore recommended that before community-based TB care is implemented, efforts should be made to ensure adequate sensitisation, advocacy and social mobilisation of the community to create an enabling environment and secure public will, consensus and social commitment, which will facilitate the acceptance of and participation in community-based TB care.

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