

IMPLEMENTING A COMMUNITY-BASED TUBERCULOSIS PROGRAMME IN THE OMAHEKE REGION OF NAMIBIA: NURSES' PERCEIVED CHALLENGES

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ABSTRACT

Tuberculosis (TB) is a resurgent disease in many regions of the world, including Namibia, fuelled by poor TB control programmes, human immunodeficiency virus (HIV) and poverty. The purpose of this survey was to identify nurses' perceived challenges in implementing a community-based TB programme in the Omaheke region of Namibia. Structured interviews were conducted with 40 nurses involved in providing TB treatment and care in the Omaheke region. Patient-related challenges which hampered TB treatment included alcohol and drug abuse, poverty and stigma. Lack of transport for nurses to do community-based TB work, centralised TB services and patients' lack of transport were access-related challenges. Knowledge-related challenges involved a lack of TB knowledge by both nurses and community members. The HIV pandemic has increased the number of TB patients and increased nurses' workloads, aggravating the burden of TB as a resurgent disease in this region. Decentralisation of TB care to community and family levels would be necessary to reduce the number of people with active TB in the community, and to enhance the TB cure rates, in the Omaheke region of Namibia. In order to implement a successful community-based TB programme, the patient-related, access-related and knowledge-related challenges, perceived by the nurses, need to be addressed effectively.

OPSOMMING

Tuberkulose (TB) is 'n siekte wat herry in baie dele van die wêreld, insluitende Namibië, en wat aangevuur word deur swak TB-beheerprogramme, menslike immuïteitsgebreksvirus (MIV) en armoede. Die doel van die opname was om waargenome uitdagings van verpleegkundiges te identifiseer tydens die implementering van 'n gemeenskapsgebaseerde TB-program in die Omaheke-streek van Namibië. Gestruktureerde onderhoude is met 40 verpleegkundiges gevoer wat gemoeid was met TB-behandeling en -versorging in die Omaheke-streek. Pasiëntverwante uitdagings wat TB-behandeling nadelig beïnvloed, sluit alkohol- en dwelmmisbruik asook armoede en stigma in. 'n Gebrek aan vervoer vir verpleegkundiges om gemeenskapsgebaseerde TB-werk te doen, die sentralisasie van TB-dienste en pasiënte se gebrek aan vervoer was die toegangsverwante uitdagings. Kennisverwante uitdagings het die gebrek aan TB-kennis van beide verpleegkundiges en gemeenskapslede ingesluit. Die MIV-pandemie het die aantal TB-pasiënte vermeerder en verpleegkundiges se werksladings verhoog, wat die las van TB as 'n herryende siekte in die streek vererger het. Desentralisasie van TB-sorg tot op gemeenskaps- en gesinsvlak sal nodig wees om die getal mense met aktiewe TB in die gemeenskap te verminder, en om die TB-geneeskoerse in die Omaheke-streek van Namibië te verbeter. Ten einde 'n suksesvolle gemeenskapsgebaseerde TB-program te implementeer, moet die pasiënt-, toegangs- en kennisverwante uitdagings, soos deur die verpleegkundiges waargeneem, effektief oorkom word.

LIST OF ABBREVIATIONS

AIDS: acquired immune deficiency syndrome

ARV: anti-retroviral

DM+ve: direct-microscopy positive

DOTS: directly observed treatment short course

HIV: human immunodeficiency virus

MDR: multi-drug resistant

MoHSS: Ministry of Health and Social Services (of Namibia)

PTB: pulmonary tuberculosis

TB: tuberculosis

WHA: World Health Assembly

WHO: World Health Organisation

INTRODUCTION

Tuberculosis (TB) is a bacterial disease, caused by a micro-organism called mycobacterium tuberculosis, also known as acid-fast bacillus or tubercle bacillus (WHO, 2001b:1). On average one person with pulmonary TB (PTB) infects 10 to 20 people per year, 6 of whom develop active TB (Knight, 2000:4; Saeed, 1999:535). At least 20 million people died from TB during the decade of 1990-2000 (Enarson, 2000:162). Globally, 9.2 million new cases and 1.7 million deaths from TB occurred in 2006, of which 0.7 million cases and 0.2 million deaths occurred among HIV-positive people (WHO, 2008:1). The most important risk factors in becoming infected with TB are the length of contact with an infected source and the number of bacilli in the air (Rieder, 2002:29, 118; WHO, 2001b:1), emphasising the dire necessity to reduce the number of active PTB patients in any community, by providing effective TB treatment.

Overview of TB in Namibia

Namibia is the driest country south of the Sahara with an average rainfall ranging from 25 mm to 600 mm. An estimated 66% of the population reportedly lives in rural areas. With an average population density of 2.5 people per square kilometre, Namibia is one of the most sparsely populated countries in the world. Its population was estimated to be approximately two million in 2006 (Government of the Republic of Namibia Census, 2007:6).

In Namibia, TB continues to be a major public health problem, being the second most prevalent reason for

hospitalisation and a significant cause of outpatients' visits. TB accounted for 15% of all institutional deaths, second only to AIDS, which was responsible for 22% in 1998 (UNDP, 1999:97). However, a third of all AIDS deaths were due primarily to TB, thus making TB the most prevalent cause of institutional deaths in Namibia. Co-infection between TB and HIV was recorded to be 45% during 1998, but in 2006, an estimated 67% of TB patients tested HIV positive (Maletsky, 2008:1). The country's reported TB notification rate rose from 430/100 000 in 1991 and 676/100 000 in 2002 to 765/100 000 in 2006 (Maletsky, 2008:1). Patients admitted with TB increased from 10% in 1995 to 27% in 1999 (MoHSS 2000a:1-5; MoHSS 2004:3). Since 2001, Namibia has sustained case detection rates above the global target of 70%. However, the TB treatment success rate of 63% (over the preceding eight years) remained below the global target of 85%, and Namibia's TB incidence rate is more than twice as high as the African regional average (USAID, 2006:1).

Namibia's national TB control programme review for 2000 revealed many challenges, including:

- geographic inaccessibility of TB care, as many patients live far away from clinics with an absence of public transport in many areas;
- low levels of education;
- decreasing donor support for TB programmes;
- few facilities with microscopy services and trained staff to use these facilities for diagnostic purposes, making it difficult to determine whether a specific patient's sputum remains directly microscopic positive (DM+ve), implying that live TB bacteria are present in the sputum, and/or whether the patient responds to TB

treatment;

- poor data management, poor record keeping and poor follow-up systems of non-adherent TB patients;
- training in TB treatment was not considered a priority and supervision of TB-related activities had not been performed effectively;
- lack of transport for TB treatment related activities;
- TB advocacy was not a priority;
- lack of an official TB research agenda;
- centralisation of TB services in the Omaheke region, with patients admitted to hospitals for the initial two months of TB treatment and receiving the remaining four months of treatment at outpatient departments or at clinics (MoHSS, 2000b:14-19);
- use of the services of doctors who are not necessarily familiar with the country and its people, as the University of Namibia has no medical faculty;
- "The multitude of medical doctors from dozens of different nations [are] not oriented on the Namibian TB guidelines and often do not provide what the NTCP (Namibia's TB Control Programme) considers 'gold standard clinical practice'" (Maletsky, 2006:1); and
- nurses rotate frequently between health care services, making it hard to build up a competent

TB nursing workforce at primary care levels (Maletsky, 2006:1).

Figure 1 shows the estimated TB prevalence per 100 000 of the population for the 14 SADC countries in 2000, with Namibia having the second-highest prevalence (preceded by Swaziland) of 758/100 000 (WHO, 2001a:12-14).

According to the MoHSS (2004:83), the 2001 TB treatment outcomes for sputum positive TB patients in Namibia were 40% cure rate, 5% treatment failure rate, 12% death rate, 13% defaulter rate, 25% treatment complete and 5% transfer out of Namibia. The targets for TB control ratified by the World Health Assembly (WHA) are to detect 70% of existing cases in the community and cure 85% of them (WHO, 2003:7). Countries with TB cure rates below 70% should give the highest priority to implementing effective directly observed treatment short course (DOTS) programmes, as these countries are at risk of developing constant increases in the numbers of TB patients, especially those with multi-drug resistant (MDR) TB (Pablos-Me'ndez, Gowda & Frieden, 2002:1; WHO, 1999:1). In Namibia the estimated cost for treating a new TB infection is N\$250 (N\$ has the equivalent value of the South African currency), but N\$25 000 for treating MDR TB (Maletsky, 2008:1).

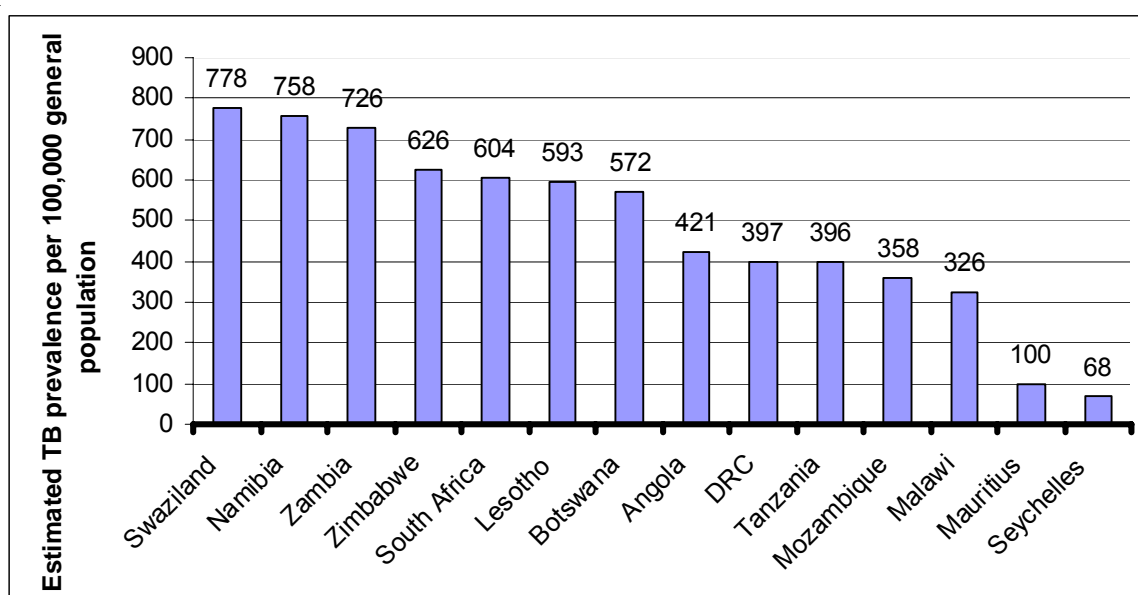


Figure 1: Estimated TB prevalence per 100 000 of general population in 14 SADC countries in 2000. (WHO 2001a)

Overview of TB in the Omaheke region of Namibia

The Omaheke region is one of the 13 administrative regions in Namibia. It covers 84 732 km² and has a total of 68 039 people with an average population density of 0.8 people per square kilometre (Government of the Republic of Namibia Census, 2003:3). Approximately 80% of the population lives in rural areas. The main economic activity is cattle ranching and beef production by commercial and communal farmers. Reportedly 54.1% of the households are living in poverty (NDC 2001:7-8) and many of them live nomadic lives moving from farm to farm, from farms to town and back to the farms.

A total of 541 cases of all forms of TB were notified in 2000 for the Omaheke region, giving a case notification rate of 815/100 000 of the population; in 2001, 586 cases were notified, giving a case notification rate of 861/100 000 (Oxfam, 2002:37). The 1998 review of the TB programme revealed ineffective TB control and management, with poor TB treatment outcomes in the region recording 51.4% defaulter rate, 3% case detection rate and 28% cure rate and only a 37% treatment success rate (Oxfam, 2002:37). In the late 1990s Omaheke was the worst region in Namibia concerning the management and control of TB and HIV/AIDS (Oxfam, 2008:1).

During 2002 when the study was conducted, TB patients were admitted for their initial two months of TB treatment to the medical ward of the Gobabis Hospital, the major government hospital in the Omaheke region. This compulsory admission of TB patients led to overcrowding of the medical ward, with an average of 85 patients in a ward with an official bed capacity of 52 (implying a bed occupancy rate of 163%). After the completion of the two months of hospital-based TB treatment, the patients were expected to obtain their daily TB treatment from Gobabis Hospital's outpatient department or from clinics, amounting to health facility based DOTS. Incomplete and inaccurate records were kept and there were no formal links between the clinics and the communities concerning TB programmes. Community-based DOTS did not exist (Zvavamwe, 2006:17). Nurses at the outpatient department and clinics did not follow up defaulters, as they had no vehicles. In the Omaheke region even four-wheeled drive vehicles would negotiate the heavy Kalahari sands with

difficulty. The majority of the TB patients belong to the San community, a predominantly nomadic group without fixed addresses and without phones. Cellular phones do not operate in the rural areas.

PROBLEM STATEMENT

TB can be cured with effective treatment, but with ineffective treatment, MDR TB could develop with grave consequences for the patient, his/her family and community as well as for the health care services. MDR TB develops when TB treatment is ineffective and/or inconsistent. By February 2002, 13 cases of MDR TB had been identified in the Omaheke region. TB treatment programmes are available in Namibia as part of the primary health care services, but Namibia has the second largest TB problem of the 14 SADC countries (see Figure 1), and the incidence of MDR TB continues to rise. The purpose of this study was to identify challenges for the implementation of a community-based TB programme, perceived by nurses providing TB treatment in this region, as well as their perceived remedies for these challenges. If such challenges could be identified and addressed, then an effective community-based TB programme could be implemented and the TB outcomes in this area could be improved.

OBJECTIVES OF THE STUDY

The objectives of this study were to:

- identify and describe challenges perceived by nurses in providing TB treatment in the Omaheke region of Namibia;
- establish nurses' perceived remedies for the identified challenges to enhance the TB programme's treatment outcomes;
- determine nurses' perceived advantages/disadvantages of implementing a community-based TB programme in this area;
- identify nurses' perceived requirements for the successful implementation of a community-based TB programme in this area;
- make recommendations for implementing an effective community-based TB programme; and
- improving TB outcomes in this region.

RESEARCH DESIGN AND METHOD

This was a descriptive quantitative study which ad-

dressed the central research question (Trochim, 2001:1), namely to identify the challenges perceived by nurses for providing community-based TB treatment in the Omaheke region of Namibia. A quantitative study uses measurement to record and investigate aspects of social reality (Bless & Higson-Smith, 2000:156). A quantitative design, using structured interviews to gather data, was deemed appropriate as all the nurses could understand and speak English. The interviewer (who was the first author of this article) could not speak any of the local languages (San, Herero, Nama, Tswana or Ovambo), making in-depth qualitative interviews difficult. Focus group interviews were not feasible as it was impossible to gather a group of nurses involved in TB care for such an exercise during an acute shortage of nurses. Individual structured interviews offered the opportunity to interview each nurse at a convenient time and location, keeping the information confidential and anonymous. As the nurses' home languages did not include English, the interviewer could rephrase questions and ask explanations for unexpected and/or ambiguous answers during the structured interview. No interpreters were used as all the nurses could understand and speak English and as the interviewer promised each nurse that all information would remain anonymous and confidential.

Population

No sampling was done as the population of 40 nurses who worked in clinics and in Gobabis Hospital's medical ward and outpatient department (where TB patients received their treatment) participated in the study.

Ethical considerations

Permission to conduct the study in the Omaheke region was granted by Namibia's Ministry of Health and Social Services (MoHSS). The research proposal was also approved by the Research and Ethics Committee of the Department of Health Studies of the University of South Africa. The researcher obtained informed consent from each nurse prior to the interview. The purpose of the interview, namely to identify nurses' perceived challenges in providing TB treatment in the Omaheke region, was explained as well as the individual nurses' right to decline participation, or to withdraw from participation at any stage during the interview, without incurring any negative consequences whatsoever. To

enhance anonymity and confidentiality, no signed consent was obtained. No names were indicated on the structured interview schedules or in any reports emanating from this data. The interviewer had a list of the names of the 40 nurses providing TB care in the Omaheke region and merely ticked off each nurse's name after the nurse was interviewed. This list was destroyed once all 40 nurses had been interviewed. Information collected was kept in the strictest confidence and the completed structured interview schedules were available to the researchers and the statistician only, and were destroyed subsequent to publication of the research report.

Structured interview schedule

The structured interview schedule was compiled, based on a review of literature pertaining to TB treatment and care. The structured interview schedule comprised the following sections:

- Demographic questions, comprising six items, seeking information about the nurses' ages, qualifications, gender and experience.
- Questions about TB challenges encountered in the Omaheke region (four items) and suggestions for addressing these challenges (four items).
- Questions about nurses' perceived advantages and disadvantages of implementing community-based TB care in the Omaheke region (four items).
- Nurses' suggestions for the successful implementation of a community-based TB programme in the Omaheke region.

Most questions were closed, allowing interviewees to select the most appropriate answer, or to organise possible answers into a sequence from most to least important. However, interviewees always had the option of "other... please specify..." where they could provide answers in their own words, which the interviewer recorded verbatim.

Data analysis

Epi Info 2000 was used to capture and analyse the data and Microsoft Excel was used to generate graphs and tables portraying the statistics. Descriptive statistics were used to convert and condense the data into organised tables and figures (Brink, 1999:179-180; Burns & Grove, 2001:179). Open-ended responses were

coded and analysed quantitatively.

RESEARCH RESULTS

Biographic data about the nurses providing TB services in the Omaheke region were obtained so that the research results could be contextualised against this background knowledge. Subsequent to the presentation of the biographic data, the research results will be presented according to patient-related, access-related, knowledge-related and burden of TB-related challenges encountered by nurses in implementing TB programmes in the Omaheke region of Namibia. (These categories of challenges were derived from the literature review, but were not organised as such on the structured interview schedule, to prevent the creation of mindsets during the interviews.)

Biographic data

A high percentage of the nurses were females, representing 87.5% (n=35) of the respondents, with only 12.5% (n=5) being males. The youngest nurse in the sample was 23 and the oldest was 54 years old, giving the sample a mean age of 40, with a range of 31 years. As many as 90.0% (n=36) of the participants had worked for five years or more, and 80.0% (n=32) of them had more than 10 years' experience. Table 1 reveals the nurses' qualifications, workplaces and years of experience.

More than half of the respondents, 55.0% (n=22), were hospital-based (in the medical ward or in the outpatient department where TB patients were treated), while the remainder, 45.0% (n=18), were based at clinics. Only 55.0% (n=22) of the 40 nurses rendering TB services were registered nurses. The other two categories (auxiliary and enrolled nurses) were each represented by 22.5% (n=9). (In Namibia the training period for registered nurses is four years, that of the enrolled nurses is two years and nursing assistants are trained for one year.) The information in Table 1 shows that more nursing assistants worked at clinic than at hospital level, while more registered and enrolled nurses worked at the hospital.

Nurses providing TB treatment and care in the Omaheke region represented the Tswana (35.0%; n=14, Herero (30.0%; n=12), Ovambo (20.0%; n=8), Nama/Damara (10%; n=4) and Baster (5.0%; n=2) ethnic groups, with no nurses from the San ethnic group. As most TB patients in the Omaheke region are from the San communities, nurses cannot communicate with the majority of the TB patients in their own (San) language. This has potentially detrimental effects for health education and for adherence to the prescribed TB regimens.

Table 1: Nurses' qualifications, workplaces and years of experience (n=40)

QUALIFICATIONS			WORKPLACES		YEARS OF EXPERIENCE				
Type of nurse	Number	%	Hospital	Clinic	<11 months	1-5 yrs	6-10 yrs	11-15 yrs	16 yrs and more
Auxiliary nurse	9	22.5%	1	8	0	0	0	2	7
Enrolled nurse	9	22.5%	9	1	0	0	0	2	7
Registered nurse	22	55.0%	13	9	2	2	7	4	7
TOTAL	40	100%	22 (55.0%)	18 (45.0%)	2	2	7	8	21

Challenges encountered by the nurses in providing TB treatment in the Omaheke region

The data will be discussed according to the patient-related, access-related, knowledge-related and burden of TB-related challenges as well as the advantages and disadvantages of implementing community-based TB programmes in this area, as perceived by the nurses. Although only 40 nurses were interviewed, each nurse could supply more than one answer in response to specific questions. Consequently, the total number of responses might exceed 40 in relation to specific items. Table 2 summarises the nurses' responses about challenges encountered in rendering TB services in the Omaheke region, and Table 3 summarises the nurses' suggestions for addressing some of these challenges. The data from Tables 2 and 3 will be discussed successively in the respective subsections.

Patient-related challenges (n=133 responses)

Alcohol and drug abuse by the TB patients was mentioned most frequently, comprising 28.6% (n=38) of the responses under patient-related challenges. Poverty was mentioned second, at 27.1% (n=36) of the responses. TB patients defaulting from treatment was mentioned third, earning 24.8% (n=33), and TB patients' lack of food to eat after taking TB drugs garnered 19.5% (n=26) of the responses. Taking these drugs without food could make the patients feel sick, causing them to default from treatment, and possibly to progress to MDR TB, with serious consequences for themselves, their families, communities and the country as a whole.

The 59 remedies suggested by the interviewed nurses, as reflected in Table 3, refer to the needs for patient education and food supplies, but did not address alcohol/

Table 2: Challenges encountered by nurses in rendering TB treatment and care

CHALLENGE	FREQUENCY	%
Patient-related challenges (n=133)		
Alcohol/drug abuse	38	28.6
Poverty	36	27.2
Defaulting	33	24.8
Lack of food	26	19.5
Access-related challenges (n=104)		
Lack of transport for TB activities at community level	37	35.6
Long distances between patients and health facilities	36	34.6
Nomadic patients	31	29.8
Knowledge-related (n=99)		
Lack of TB knowledge by community	38	38.2
Poor community involvement	25	25.3
Lack of political support for TB-related work	18	18.2
Nurses' lack of TB knowledge	18	18.2
TB burden-related challenges (n=68)		
Increased TB burden by HIV pandemic	25	36.8
Shortage of nurses	22	32.4
Sustained increasing numbers of TB patients	21	30.2

Table 3: Remedies suggested by nurses for addressing some of the challenges encountered in rendering TB treatment and care in the Omaheke region

CHALLENGE	FREQUENCY	%
Patient-related challenges (n=59)		
Education of the TB patient and his/her family on TB	32	54.2
Supplementary feeding of the TB patients	27	45.8
Access-related challenges (n=83)		
Provision of transport for TB activities at community level	33	39.8
Establishment of community structures to deal with TB activities at community level	33	39.8
Decentralisation of TB control to the community	17	20.4
Knowledge-related (n=103)		
Community education on TB	36	35.0
Training of nurses on TB	30	29.1
Increased supervision of the clinic nurses by the district staff	20	19.4
TB promotion to gain consensus of the community for TB control	17	16.5
TB burden-related challenges (n=40)		
Increase the number of the nurses	40	100.0

drug abuse, nor poverty relief, which were the major patient-related challenges. Clemens (2003:97) also identifies alcohol abuse, malnutrition and poverty as factors contributing to the TB epidemic's challenges in Namibia.

Since the completion of this and other exploratory studies in the Omaheke region, Oxfam Canada was instrumental in initiating and sustaining a community-based TB and HIV/AIDS programme that provides health education, home health services and assistance with food provision (Oxfam, 2008:3).

Access-related challenges (n=104 responses)

The lack of transport for nurses to carry out community-based TB work was mentioned most often under access challenges. The results disclosed that 92.5% (n=37) of the nurses involved in TB work never visited their communities. They did not have vehicles and would need special training to drive four-wheeled drive cars through the heavy Kalahari sands. The sparse

population was spread out over vast distances without proper roads or maps and without telephone or cellular contact, posing challenges to trace any TB defaulters in the rural areas. Poor access to health services by patients, owing to long distances between the patients and the health facilities, and an absence of public transport, were also challenges in providing effective TB care in the Omaheke region. Many TB patients were nomadic, moving from farm to farm, which posed a great challenge for follow-up visits. Centralisation of TB services at the Gobabis Hospital and at a number of clinics in the region further aggravated the inaccessibility of these services for many TB patients.

The nurses made 83 recommendations for addressing access-related challenges, including providing transport (39.8%; n=33) to health workers for rendering community-based TB work, establishing community-based structures to deal with TB at community level (39.8%; n=33) and decentralising TB control to community levels (20.5%; n=17) from hospital and clinic levels.

These nurses identified a dire need for transport to do follow-up visits to TB patients. This is indeed a serious shortcoming throughout Namibia's health care services. However, during March 2007 the MoHSS received 53 vehicles from the United States Centres for Disease Control (CDC) and from the Global Fund against HIV/AIDS, TB and Malaria to be distributed throughout the 13 regions of Namibia to enhance the rendering of health care services, including to "... help health workers to follow up on the treatment of TB sufferers and to trace people who have abandoned their TB treatment" (Shivute, 2007).

Knowledge-related challenges (n=99 responses)

The lack of knowledge about TB and its control and management by the community (38.2%; n=32) and by nurses (18.2%; n=18) was cited under knowledge-related challenges. This results in poor community involvement and participation (25.3%; n=25). A lack of political support (18.2%; n=18) was also mentioned.

The 103 remedies suggested by the nurses to address knowledge-related challenges included community education (38.2%; n=38), improved training of nurses (29.1%; n=30), enhanced supervision of clinic nurses (19.4%; n=20) and TB promotion to gain consensus that communities assume responsibility for TB control (16.5%; n=17). No remedy was suggested for enhanced political support for TB programmes in the area.

Based on the results of this survey, all 40 nurses who participated in this study attended an in-service education programme about TB and about guidelines for Namibia's national TB programme. A number of clinic committees were established and the committee members as well as other community members were trained in the major aspects of TB and DOTS (Zvavamwe, 2006: Annexures I, K and M). Although the nurses did not mention the doctors' lack of knowledge, this might be a possibility because Namibia has no medical school and relies on doctors trained in other countries who might be unfamiliar with Namibia's TB guidelines (Clemens, 2003:97; McCourt & Awases, 2007:10).

Burden of TB-related challenges (n=68 responses)

The HIV pandemic was mentioned by 25 (36.8%) of the participating nurses as the most daunting challenge

which has led to increasing numbers of TB patients (30.9%; n=21), overcrowding of the medical ward at Gobabis Hospital (where TB patients are treated) and an increased workload for the nurses, aggravated by the alleged shortage of nurses (32.4%; n=22) in this area. All 40 (100.0%) nurses recommended that the number of nurses should be increased, but did not recommend ways of addressing the HIV pandemic in the area nor the increased numbers of TB patients.

Reportedly the WHO agreed with these 40 nurses on the severe impact of the HIV/AIDS epidemic on Namibia's health care services: "... the co-infection of TB and HIV/AIDS and the stigma carried by both, as well as the multi-drug resistance to the diseases were major factors leading to the low success rate of the Namibian programme" (Maletsky, 2008:2). The situation is particularly serious, as an estimated 30% of people living with HIV/AIDS could die from TB (Clemens, 2003:97).

Concerning the reported severe shortage of nurses, McCourt and Awases (2007:2) agree that Namibia, like other African countries, faces a shortage of health human resources, indicating that "... while Africa is estimated to have 25% of the world's diseases, it has only 1.3% of its health staff". However, the CDC has increased the number of nurses trained by the MoHSS from 50 to 200. By 2003, Namibia's MoHSS, with the assistance of CDC and USAID, had hired additional staff (13 doctors, 10 nurses, 10 pharmacists and 10 data clerks) with prospects of increasing these numbers in future (McCourt & Awases, 2007:12). These authors indicate that during 2003 an estimated 210 000 (or 1:10) people were living with HIV/AIDS in Namibia, which would affect the number of HIV-positive health care workers (McCourt & Awases, 2007:3) and possibly further deplete the number of caregivers in Namibia.

Disadvantages of community-based TB care identified by the nurses (n=95)

One way in which the burden-related TB challenges could be addressed in this area is by implementing a community-based TB programme, in addition to the existing hospital and clinic-based programme. Specific questions were asked about the perceived disadvantages of this possibility, as well as about perceived requirements for its successful implementation.

All 40 (100%) nurses replied to this question but as more than one disadvantage could be mentioned, the

total number of responses was 95.

Table 4: Disadvantages of community-based TB care as identified by the nurses (n=95)

IDENTIFIED DISADVANTAGES	FREQUENCY	%	CUMULATIVE %
Easy for patients to default (because community cannot be trusted)	30	31.6	31.6
Poor supervision of TB patients and their treatment supervisors	23	24.2	55.8
Poor drug management	16	16.8	72.7
Alcohol and drug abuse resulting in defaulting from treatment	14	14.7	87.4
No food at home to eat before taking the treatment, leading to defaulting from treatment	6	6.3	93.7
Increased home deaths from TB	2	2.1	95.8
Poor recordkeeping by the community	2	2.1	97.9
Some community members still believe in witchcraft	2	2.1	100.0

Table 5: Perceived requirement for the successful implementation of community-based TB care (n=231)

REQUIREMENTS	FREQUENCY	%	CUMULATIVE %
Increase of health workers (nurses)	40	17.3%	17.3%
Transportation for patient follow-up	33	14.3%	31.6%
Patient and family education	31	13.4%	45.0%
Regular support visits by nurses	29	12.6%	57.6%
Training of nurses	26	11.3%	68.8%
Incentives for TB patients	20	8.7%	77.5%
Establishment of community-based structures to support TB work	18	7.8%	85.3%
Incentives for treatment supervisors	17	7.4%	92.6%
Community education	17	7.4%	100%
TOTAL	231	100%	

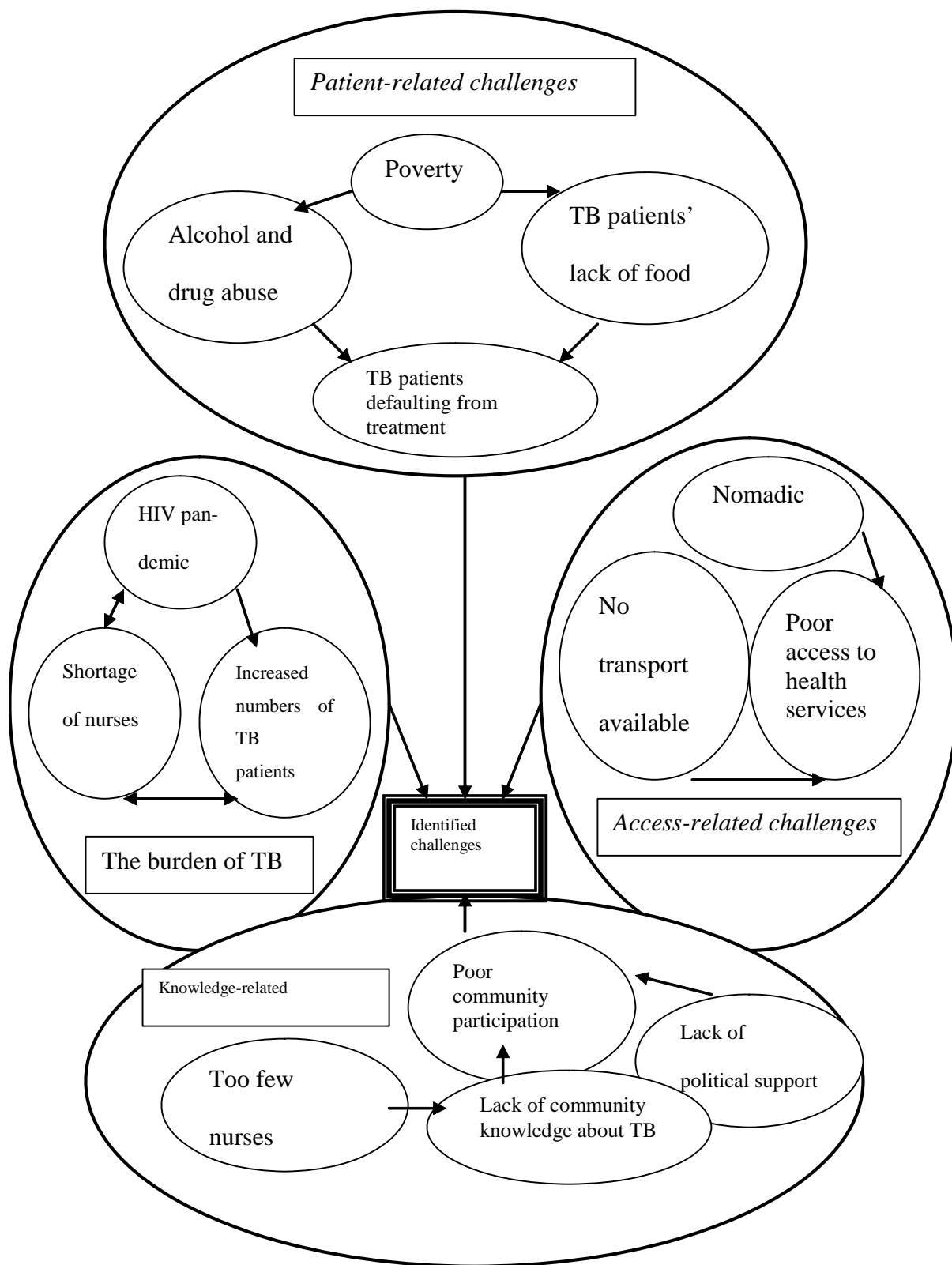


Figure 2: Challenges encountered by nurses in dealing with TB in the Omaheke region (n=40)

Although all 40 (100.0%) nurses accepted the need to implement a community-based TB programme, the results displayed in Table 4 reveal anticipated disadvantages of such a programme, most notably patients' likelihood of defaulting (24.2%; n=23), poor drug management (16.8%; n=16) and patients' alcohol/drug abuse (14.7%; n=14).

Perceived requirements for the successful implementation of a community-based TB programme in the Omaheke region of Namibia (n=231)

These requirements are shown in Table 5. This question allowed room for multiple answers, yielding a total of 231 possible requirements.

The most important perceived requirements for the successful implementation of a community-based TB programme in the Omaheke region were that the number of nurses should be increased, as was indicated by all 40 (100%) interviewees, transportation for patient follow-up visits should be provided (82.5%; n=33) and patients as well as their families should be educated about TB (77.5%; n=31).

Based on the results of this and other subsequent surveys, health education programmes were offered to nurses, clinic committee members, school children and community members prior to and during the eventual implementation of a community-based TB programme in the Omaheke region of Namibia (Zvavamwe, 2006:98-104).

Nurses' reported acceptance of community-based TB care

A Likert scale was used to assess the strength of the attitude of the nurses' responses towards the implementation of a community-based TB care strategy. The scale had five strengths: strongly agree; agree; neutral; disagree; and strongly disagree. The results show that all the respondents agreed with the introduction of the strategy, with 65.0% (n=26) strongly agreeing and 35.0% (n=14) agreeing. No respondents were neutral and none disagreed nor strongly disagreed. These nurses apparently realised that the resource- and labour-intensive TB treatment of two months' hospitalisation followed by four months' DOTS at the Gobabis Hospital or clinics did not meet the goals of treating TB patients effectively. A community-based TB

programme might be better able to meet these goals, provided it had sufficient transport, staff members, TB medicines and community members willing to be involved in the management of TB programmes in their respective areas.

SUMMARY OF THE RESEARCH RESULTS

The research results indicate that the challenges encountered in rendering TB treatment and care in the Omaheke region are multi-faceted and interrelated, as indicated in Figure 2.

LIMITATIONS

The study population was limited to nurses providing TB treatment and care in the Omaheke region of Namibia only. Therefore the results of this study cannot be generalised to nurses working in other areas of Namibia, or in other countries, without duplicating this study in the area(s) concerned.

Structured interviews were used to collect quantitative data. More in-depth data might be obtained by conducting individual and/or focus group interviews. The research results portray only the nurses' views, not those of the TB patients and/or their families, or those of the communities concerned or of the MoHSS.

CONCLUSIONS

The 40 nurses who were interviewed identified the major patient-related challenges for the successful implementation of TB treatment and care in the Omaheke region as alcohol and drug abuse, defaulting from treatment, poverty and lack of food to eat after taking the TB drugs. The major access-related challenges concerned nurses' inability to visit TB patients in the community and patients' difficulties in reaching the TB services centralised at the hospital or clinics. The nurses indicated that they required more knowledge about TB but that the communities should also be educated about TB. The major challenges related to TB's burden of disease were the HIV epidemic leading to overcrowding of the medical ward at the Gobabis Hospital and increasing the workloads of nurses in the hospital and clinics.

All 40 nurses were in favour of instituting community-based TB treatment programmes in the Omaheke region, but identified the possible disadvantages of such a programme (which could impact negatively on adherence to TB treatment) as defaulting by TB patients, poor drug maintenance and patients' alcohol and drug abuse. The nurses' requirements for instituting a successful community-based TB programme involved the employment of more nurses specifically for providing TB-related services, the supply of transport for the nurses to visit TB patients and the education of TB patients as well as their families.

RECOMMENDATIONS

The TB treatment outcomes in the Omaheke region could be improved if the following recommendations were heeded:

- TB patients, who are abusing alcohol and/or drugs, should receive treatment for such abuse simultaneously with the TB treatment.
- The government of Namibia should consider issuing food parcels with the monthly renewals of TB drugs so that the TB patients can take the TB drugs with food, reducing the severity of side effects, and enhancing the adherence to TB treatment.
- Poverty levels in the area need to be addressed; possible job creation activities should be identified, instituted and maintained.
- Nurses should be enabled to conduct home visits to all TB patients on treatment, and especially to every person who defaults to collect his/her TB drugs at the scheduled times.
- The institution of mobile clinic services should be investigated for the rural areas.
- TB services should be decentralised from hospital and clinic levels to community levels.
- Community structures should be instituted to enhance the successful implementation of community-based TB care, especially DOTS.
- In cases where DOTS supervisors operate satisfactorily, more than one month's supply of TB drugs should be issued, obviating the need for monthly visits to the clinic or hospital.
- Nurses providing TB care in the Omaheke region should be educated about TB generally and about community-based TB care specifically.
- Regular TB awareness campaigns should be held in the area and communities' knowledge about TB

should be enhanced.

- TB patients should commence TB treatment in their communities, without the initial two months' admission period to the hospital.
- Nurses providing TB care should receive regular updates about TB drugs.
- Nurses working in TB clinics should maintain meticulous records and should be visited regularly by nurses from both district and MoHSS levels.
- More nurses should be appointed specifically to provide TB treatment and care, and to support the community members supervising, as well as the patients receiving TB treatment, and to sustain community-based health education drives about TB (and possibly also about HIV/AIDS).
- The possibility should be investigated that the TB nurses could also provide HIV/AIDS treatment and care, provided that they are regularly updated about both TB and anti-retroviral (ARV) drugs. In this way a more cost-effective service could be provided, potentially enhancing the outcomes of patients using TB and/or ARV drugs.
- Although all TB patients are tested for HIV, it is also essential that all HIV-positive patients be tested for TB. This could enhance the case detection, treatment and cure rates (Wise, 2007:3).

The increase in the number of TB patients indicates that health care workers have not succeeded in reaching all patients to persuade them to successfully complete treatment. Therefore, decentralisation of TB care to community and family level is necessary to reduce the number of people with active TB in the community. However, this requires nurses to understand community-based TB care and be aware of its challenges and potential benefits.

CONCLUDING REMARKS

Community-based TB programmes should recognise the fact that "...former patients make the best advocates for TB control ... those who had tuberculosis and are now cured are 'living proof' of the effectiveness of directly observed therapy, short course (DOTS) and their stories put a human face to the disease ... personal perspectives ... underscore the power of personal stories in raising awareness of tuberculosis and the need to improve detection and treatment" (Larkin, 2003:176). Subsequent to the completion of this and

other exploratory studies, a community-based TB programme has been implemented in the Omaheke region, with the financial and technical support of Oxfam Canada and later also from the United Nations' Global Fund. This programme, known as OHEP (Omaheke Health Education Project), was established to enhance the quality of health services provided by Namibia's MoHSS, "... to provide outreach to people living in rural areas and the squatter settlements through ... community health committees and a program of travelling health promoters ... the cure rate for TB has risen from 28% to 90%" (Oxfam, 2008:1). This is a significant cure rate because Namibia's average cure rate for TB patients is reported to remain around 50% (Maletsky, 2008:1).

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