

# A study of health workers' knowledge and practices regarding leprosy care and control at primary care clinics in the Eerstehoek area of Gert Sibande district in Mpumalanga Province, South Africa

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## Abstract

### Background

Leprosy is now a rare disease in South Africa. It does still occur, however, and it is an important cause of preventable disability. The target of eliminating leprosy as a public health problem has long been reached in the country in terms of the World Health Organization (WHO) definition of less than one case of leprosy per 10 000 population. However, there is still a commitment to the eradication of the disease in the country.<sup>1</sup> Also, as leprosy is a chronic communicable disease with an extraordinary long incubation period, it is expected that even in areas where the elimination target has been reached, a proportion of the population infected several years ago will show clinical disease, resulting in the occurrence of new cases for many years to come. There is, therefore, a continuing need for vigilance regarding leprosy in South Africa.

The low prevalence of leprosy in South Africa is found mostly in the eastern coastal areas and the south-eastern Highveld region, comprising mostly the provinces of Eastern Cape, KwaZulu-Natal and Mpumalanga.

The strategy of leprosy care and control programmes in the country is currently that of decentralisation and integration into the general health care services at the primary health care (PHC) level in accordance with the WHO recommendations.

The low prevalence of leprosy is associated with a fear of the loss of leprosy-specific skills within the healthcare services that could result in considerable delay in the diagnosis and treatment of the disease.<sup>5</sup>

One of the goals of the South African leprosy care and control programme is the maintenance of a high level of awareness of leprosy by health workers (HWs) at the primary care level of the general healthcare services in order to ensure early diagnosis and treatment of the disease in the light of the low prevalence.

A successful leprosy care and control programme within the general healthcare services at the PHC level is highly dependent upon the HWs having adequate knowledge of, and practical training on, leprosy.

### Methods

This study describes PHC workers' knowledge of leprosy, and their practical involvement in leprosy care and control activities at PHC clinics in the Eerstehoek area of Gert Sibande district in Mpumalanga Province, South Africa, where leprosy still occurs.

### Results

The results of the study reveal that the PHC workers have a general lack of basic clinical knowledge of leprosy, and a very low level of practical involvement in leprosy work at the PHC clinics in the area. A majority of the PHC workers expressed the desire for training on leprosy, and the willingness to provide care to leprosy patients at the PHC clinics.

### Conclusion

Training strategies that are recommended to improve the PHC workers' knowledge of leprosy and to promote their practical involvement in leprosy work at the PHC clinics include: more emphasis on leprosy teaching during the training of PHC workers at training institutions, more leprosy-specific in-service training of the PHC workers, special training of the PHC workers on practical leprosy work, and regular follow-up and supervision of the PHC workers at PHC clinics by specialised or experienced leprosy workers.

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## Introduction

Leprosy is now a rare disease in South Africa. It does still occur, however, and it is an important cause of preventable disability.<sup>1</sup> The target of eliminating leprosy as a public health problem has long been reached in the country in terms of the World Health Organization (WHO) definition of less than one case of leprosy per 10 000 population.<sup>2,3</sup> However, there is still a commitment to the eradication of the disease in the country.<sup>1</sup> Also, as leprosy is a chronic communicable disease with an extraordinary long incubation period, it is expected that even in areas where the elimination target has been reached, a proportion of the population infected several years ago will show clinical disease, resulting in the occurrence of new cases for many years to come.<sup>4</sup> There is, therefore, a continuing need for vigilance regarding leprosy in South Africa.

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One of the goals of the South African leprosy care and control programme is the maintenance of a high level of awareness of leprosy by health workers (HWs) at the primary care level of the general healthcare services in order to ensure early diagnosis and treatment of the disease in the light of the low prevalence.<sup>2</sup>

A successful leprosy care and control programme within the general healthcare services at the PHC level is highly dependent upon the HWs having adequate knowledge of, and practical training on, leprosy.<sup>6</sup>

This study was done between December 2002 and January 2003

in an effort to conduct an evaluation of health workers' knowledge of and practices on leprosy at the PHC level in the Eerstehoek area of Gert Sibande district, formally known as the Eastvaal district, in Mpumalanga, where there is a leprosy care and control programme at the PHC level.

The area is inhabited by an entirely rural population of 206 814 Swazi-speaking people, and it is serviced by a network of 16 fixed PHC clinics, three mobile clinics, and a district hospital. The PHC clinics and the mobile clinics are run by nurses.

## Method

A research protocol was developed for a descriptive study. The study population consisted of HWs involved in the diagnosis, treatment and referral of patients at all the 16 fixed PHC clinics and the three mobile clinics.

The study population was estimated at a maximum size of 73 HWs, based on the information from the PHC coordinator in the area on the expected staff situation at the clinics during the study period. Primary inclusion criteria were all HWs who were found on

**Table I:** PHC clinics in Eerstehoek / health workers

PHC Clinics	Number of health workers (HWs)		
	Projected no. of HWs	No. of HWs found on duty.	No. of respondents.
Bettysgoed	2	1	1
Fernie – 1	2	1	1
Fernie – 2	2	4	4
May ower	10	7	7
Dundonald	12	6	6
Diepdale	4	1	1
Glenmore	4	2	2
Hartebeeskop	2	2	2
Swallowsnest	2	1	1
Nhlazatshe No. 6	1	2	2
Eerstehoek	5	5	5
Mooiplaas	4	3	3
Vlakplaas	2	1	1
Kromdraai	2	0	0
Nhlazatshe	8	5	5
Tjakastad	4	3	3
Northern mobile	3	3	3
Southern mobile	2	3	3
Badplaas mobile	2	2	2
Total no. of HWs	73	52	52

duty at the 16 fixed PHC clinics and the three mobile clinics during normal daytime working hours and who gave informed consent to participate in the study.

Ethical approval for the study was given by the University of Pretoria Research and Ethics Committee, and the Mpumalanga Provincial Research and Ethics Committee.

A self-administered questionnaire containing both closed-ended and open-ended questions was used for data collection. The questionnaire was piloted at the district hospital in the study area by administering it to the nurses in the primary care department of the hospital. Eight nurses completed the questionnaire and no problems were encountered.

The 16 fixed PHC clinics and the three mobile clinics were visited by the researcher and the Health Information Officer for the area during normal daytime working hours to administer the questionnaire to the HWs. Discussion between the HWs was not allowed during the time of questionnaire administration.

The variables that were measured were: clinic name, professional category of health worker (HW), previous training of HW on leprosy, HW involvement in leprosy work at the clinic, knowledge of causative agent of leprosy, knowledge of method of transmission of leprosy, knowledge of signs and symptoms of leprosy, knowledge of classification of leprosy, knowledge of treatment of leprosy, health worker's willingness for leprosy work at the clinic, and health worker's desire for leprosy-specific training.

The data were analysed manually, and with a personal computer (PC) using Microsoft Excel for Windows<sup>XP</sup>.

**Results**

**Data collection**

A total of 52 HWs were found on duty at the clinics, out of the projected study population size of

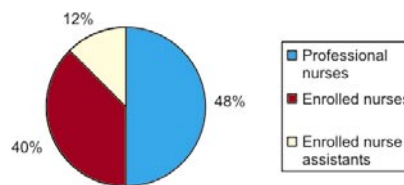
73 HWs (Table I). All 52 HWs agreed to participate in the study and completed the self-administered questionnaire (a response rate of 100%).

**Professional category of the HWs**

Of the 52 HWs, 25 (48%) were professional nurses, 21 (40%) were enrolled nurses, and 6 (12%) were enrolled nurse assistants (see Figure 1).

**Previous training / Source of knowledge of leprosy**

**Figure 1:** Professional category of HWs (n = 52)

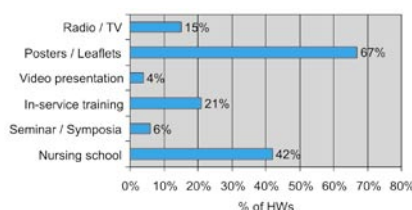


Six possible sources of knowledge of leprosy were listed on the questionnaire for the HWs to indicate their source(s) of knowledge:

- Formal teaching at nursing school
- Leprosy seminars and symposia
- In-service training
- Leprosy video at PHC clinic
- Educational leprosy posters and leaflets
- Radio and television information about leprosy

Twenty-two (42%) of the 52 HWs indicated formal teaching at nursing school, three (6%) indicated seminars and symposia, 11 (21%) indicated in-service training, two (4%) indicated video presentations, 35 (67%) indicated posters and leaflets, and eight (15%) indicated radio and television information (see Figure 2).

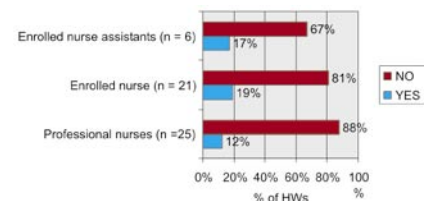
**Figure 2:** Source(s) of knowledge of leprosy (n = 52)



In response to a closed-ended question on whether the HWs have sufficient knowledge of leprosy to be able to treat leprosy at the clinics, eight (15%) of the 52 HWs said 'yes', while 43 (83%) said 'no'. Only one HW, an enrolled nurse assistant, did not respond.

By professional category, the eight HWs who responded 'yes' were three (12%) of the 25 professional nurses, four (19%) of the 21 enrolled nurses, and one (17%) of the six enrolled nurse assistants. The 43 HWs who responded 'no' were 22 (88%) of the 25 professional nurses, 17 (81%) of the 21 enrolled nurses, and four (67%) of the six enrolled nurse assistants (see Figure 3).

**Figure 3:** HWs presumed knowledge of leprosy.



**Leprosy work at the clinics**

In response to a closed-ended question on whether leprosy patients lived in the communities serviced by the clinics, 34 (65%) of the 52 HWs said 'yes', 17 (33%) said 'no', and one (2%) said 'not sure'.

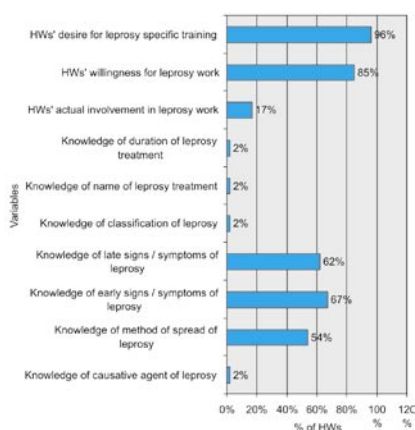
In response to a closed-ended question on whether leprosy patients attended the clinics for treatment, 13 (25%) of the 52 HWs said 'yes', 37 (71%) said 'no', and two (4%) did not respond.

In response to a closed-ended question on whether the HWs had personally attended to leprosy patients at their respective PHC clinics, nine (69%) of the 13 HWs who responded that leprosy patients attended the clinics for treatment said 'yes', while the remaining four (31%) of the 13 HWs said 'no'. In response to a follow-up open-ended question on the nature

of the service that the HWs rendered to the leprosy patients at the clinics, four of the nine HWs who attended to the patients said that the patients came for dressing of leprosy sores and that they dressed the sores, three of the nine HWs said that they suspected leprosy in the patients and referred them to hospital, and two of the nine HWs said that the patients came for leprosy treatment that was prescribed for them at hospital and that they supplied the treatment.

On the whole, only nine (17%) of the 52 HWs in this study had some form of involvement with leprosy care and control at the PHC clinics (see Figure 4).

**Figure 4:** Summary of research results (N = 52)



### **Knowledge of causative agent of leprosy**

In response to an open-ended question on the cause of leprosy, only one of the 52 HWs correctly mentioned *Mycobacterium leprae* as the causative agent of leprosy (see Figure 4).

### **Knowledge of transmission of leprosy**

In response to a closed-ended question on whether leprosy can spread from one person to another, 31 (60%) of the 52 HWs said 'yes', 14 (27%) said 'no', and seven (13%) did not respond.

In response to a follow-up open-ended question regarding the method of spread of leprosy,

six (19%) of the 31 HWs who responded that leprosy can spread from one person to another mentioned droplet infection as the method of spread, 18 (58%) gave ideas relating to contact with a leprosy patient as the method of spread, and four (13%) mentioned both droplet infection and contact with a leprosy patient. Three (10%) of the HWs did not respond.

On the whole, 28 (54%) of the 52 HWs in this study could be said to have the correct knowledge of the method of spread of leprosy as droplet infection and/or contact with a leprosy patient, though their answers did not emphasise 'prolonged close contact with an untreated leprosy patient' (see Figure 4).

### **Knowledge of signs and symptoms of leprosy**

In response to an open-ended question regarding the signs and symptoms that would make a HW suspect leprosy in a patient, 35 (67%) of the 52 HWs were able to mention early signs and symptoms of leprosy-like skin hypopigmentation with loss of sensation, skin thickening and lumps, thickening and/or tenderness of peripheral nerves, loss of sensation in the fingers or toes, weakness of fingers or feet/toes, and painless injuries or burns or blisters on the hands or feet (see Figure 4). Thirty-two (62%) of the HWs were able to mention late signs and symptoms of leprosy-like deformities of the hands and/or feet, chronic painless foot sores, and deformities of the face (see Figure 4).

### **Knowledge of classification of leprosy**

In response to an open-ended question on the classification of leprosy, only one (2%) of the 52 HWs correctly classified leprosy, though in the old terminology, as 'tuberculoid and lepromatous leprosy' (see Figure 4).

### **Knowledge of treatment of leprosy**

In response to a closed-ended question on whether there is any specific drug treatment for leprosy, 27 (51%) of the 52 HWs said 'yes', 14 (27%) said 'no', and 11 (21%) did not respond.

In response to a follow-up open-ended question on the name of the specific drug for leprosy, only one (2%) of the 27 HWs who said that there is a specific drug treatment for leprosy correctly suggested the name of the specific drug by mentioning the names of the individual drugs that make up the WHO-MDT for leprosy (see Figure 4).

In response to another follow-up open-ended question on the duration of treatment of leprosy, only one (2%) of the above 27 HWs correctly mentioned the duration of treatment as six months to 24 months (see Figure 4). However, in response to a closed-ended question on whether treatment can cure leprosy, 34 (65%) of the 52 HWs in the study answered in the affirmative.

### **Willingness for leprosy work at clinic**

In response to a closed-ended question on whether the HWs would be willing to treat leprosy patients at their respective clinics, 44 (85%) of the 52 HWs said 'yes', and eight (15%) said 'no' (see Figure 4).

### **Desire for leprosy-specific training**

In response to a closed-ended question on whether the HWs would like to be trained, or have more training on leprosy so as to become more involved in leprosy work at the PHC clinics, 50 (96%) of the 52 HWs said 'yes' and two (4%) said 'no' (see Figure 4).

### **Discussion**

The approach of integrating leprosy work into the general healthcare

services at the PHC level is a new concept in leprosy care and control that only started to gain popularity with the advent of the WHO-MDT for leprosy in 1982.<sup>3,6,7,8,9,10,11,12,13</sup>

Currently, all countries where leprosy occurs, including South Africa, have officially adopted this approach.<sup>2,3,14</sup>

Since the beginning of the widespread adoption of the approach in 1982, a number of studies have been done in some countries to evaluate the knowledge and practices of general healthcare service HWs with regard to leprosy care and control at general healthcare service facilities. At the time of this study in 2002, four such studies had been done – in Nigeria,<sup>15</sup> China<sup>16,17</sup> and Ethiopia.<sup>18</sup> All four studies found the health workers' knowledge of leprosy to be inadequate, and identified the need for suitable training programmes on leprosy for the HWs in order to ensure their effective utilisation in the new approach of leprosy work within the general healthcare services.

This study in Eerstehoek was particularly similar to the study in Ethiopia that evaluated health workers' knowledge of leprosy, and their attitude towards leprosy care and control at PHC centres, and which found that the HWs had a low to medium level of basic knowledge of leprosy, and a lower level of involvement in leprosy work at the PHC centres.<sup>18</sup>

The findings of this study in Eerstehoek with regards to the health workers' knowledge of leprosy were:

- A majority of the HWs, 83%, presumed that they did not have sufficient knowledge of leprosy for leprosy work at the PHC clinics.
- Public health posters and leaflets on leprosy were the major source of leprosy knowledge for the HWs (see Figure 2).
- A majority of the HWs were

knowledgeable on the signs and symptoms of leprosy, but basic clinical knowledge of leprosy, such as the causative organism of leprosy, the method of spread of leprosy, the classification of leprosy and the treatment of leprosy, was poor (see Figure 4).

- A majority of the HWs (96%) expressed the desire for more knowledge (see Figure 4).

The revelations with regard to the health workers' practices and involvement in leprosy work at the PHC clinics were:

- A majority of the HWs (65%) said that there were leprosy patients in the communities serviced by the PHC clinics.
- There was some utilisation of the PHC clinics by leprosy patients for their leprosy-specific problems.
- The level of involvement of the HWs in leprosy-specific work and the volume of leprosy-specific work at the PHC clinics were minimal.
- A majority of the HWs (85%) expressed willingness to treat leprosy patients at the PHC clinics.

The findings were in agreement with those of the studies in Nigeria, China and Ethiopia in terms of the health workers' inadequate knowledge of leprosy, and also confirmed the finding in Ethiopia regarding the low level of involvement of PHC workers in leprosy work at PHC centres.

Some of the important areas of focus of the South African leprosy control programme at PHC level are on standards to ensure the maintenance of a high level of awareness of leprosy, recognition of early signs and symptoms of the disease, and provision of a referral system for the patients so as to contribute to early diagnosis and appropriate treatment.<sup>2</sup> These standards appear to be well addressed by The Leprosy

Mission Southern Africa, the principal partner in leprosy control in the country, through its public health educational posters and leaflets on leprosy that are widely distributed to all healthcare facilities in Eerstehoek area and are conspicuously displayed at the facilities.<sup>1</sup> As a matter of fact, a majority of the HWs in the study indicated public health educational posters and leaflets on leprosy as a source of their knowledge of leprosy and were able to mention the signs and symptoms of leprosy. The study has also shown that some of the HWs were able to suspect leprosy and refer the patients to hospital.

However, in order for the health workers at PHC clinics to be able to provide leprosy-specific services to leprosy patients with confidence and at the recommended standards, it would be essential for the health workers to have basic clinical knowledge of leprosy other than just the signs and symptoms of leprosy.

Specific standards for leprosy work at the PHC level in the country include the competence of the HWs in the recognition of leprosy reactions and complications for referral for appropriate treatment, continuation of leprosy treatment for the recommended period, health education on self-care measures, regular evaluation of nerve function to monitor disabilities, and provision of psychological support to the patients and family to minimise stigmatisation.<sup>2,14</sup> The HWs might not be able to perform up to standard without sufficient basic clinical knowledge of leprosy.

## Recommendations

Leprosy training strategies that have been recommended for HWs within the general healthcare services include:

- More emphasis on leprosy teaching during training of HWs at training institutions<sup>15,17,18</sup>

- In-service training of the HWs<sup>18</sup>
- Special training of HWs through participation in leprosy work at specialised leprosy clinics in order to gain practical knowledge on the management of difficult cases and complications of leprosy, and the rehabilitation of leprosy patients<sup>18</sup>
- Regular follow-up and supervision of leprosy work activities at general healthcare facilities by specialised or experienced leprosy workers<sup>18</sup>

These training strategies, with some modifications or adaptations, could also be recommended for the training of HWs at PHC clinics in the Eerstehoek area, and indeed in Mpumalanga and the other provinces in South Africa where leprosy still occurs.

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