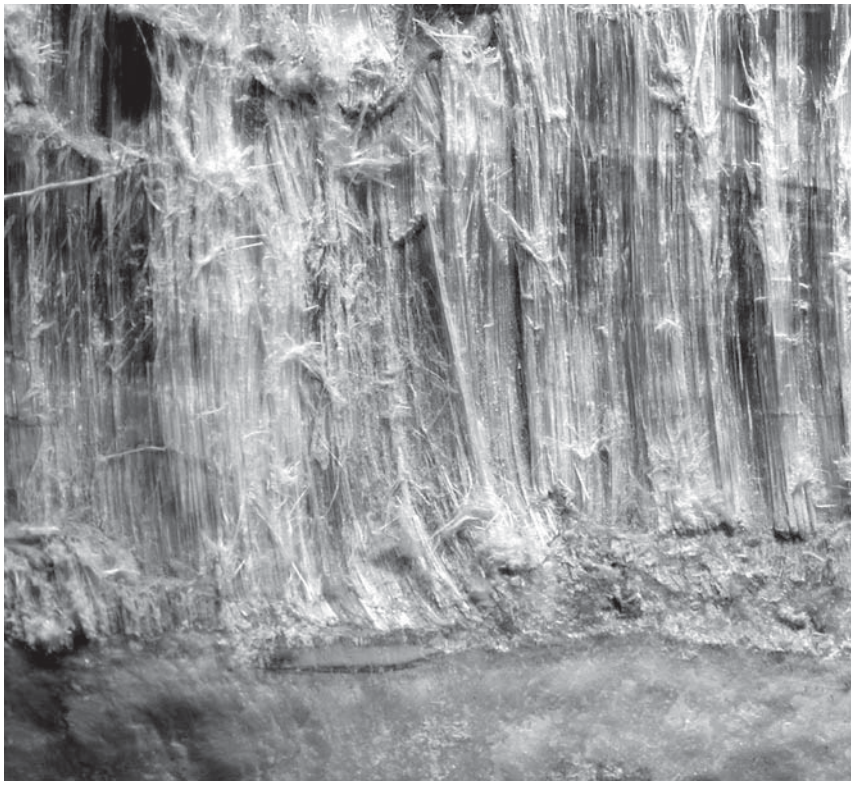
Mining lethal asbestos

The forgotten women

In 2000 a study was conducted on 200 women who formerly worked on South Africa's asbestos mines. **JCA Davies, MR Makofane** and **ML Sekgobela** write about the results and how this enabled some people to claim and receive compensation payout.



The incidence of disease arising from exposure to asbestos, widely known to be dangerous, was and is great. Almost all the crocidolite and the amosite, the really dangerous asbestos fibre now causing concern world wide, was mined in South Africa by South Africans and exported.

In 2000 a study was conducted in Sekhukhuneland, Limpopo Province to find out the impact of exposure to asbestos in women. From this information recommendations were made about compensation. A prior study in 1996 is also referred to in the article.

The 1996 study examined more than 2 000 applicants seen over six months for illness arising from asbestos exposure. When the data was analysed it became clear that a very large group of women had been exposed to asbestos mining (770 in the study) including widows of asbestos miners. This diagnosis was questioned by sceptics so a new study of women was conducted in 2000. Women were chosen because little has been written about women in mines.

Companies in Europe and America which imported and used asbestos have paid many millions of dollars or pounds to victims of asbestos-related diseases in their countries. But little or nothing has been done to assist the communities which provided the labour for the mines from which the asbestos was mined and milled.

The majority of women who worked in South Africa were employed on asbestos mines in the Limpopo and Northern Cape provinces. The women of Sekhukhuneland are the largest group of asbestos exposed women in the world.

This article tells of some of the findings from the 2000 study conducted by the School of Public Health at the University of the Witwatersrand and the National Institute for Occupational Health. The study involved 200 women who applied for benefits under the Occupational Diseases in Mines and Works Act and who were examined in May/June 2000.

The objective of the study was to

determine the relationships between occupational exposure, to identify asbestos fibres and/or asbestos bodies in the sputum, to listen for crackles in the lungs, and to monitor radiological changes in asbestos exposed women.

The data reported here provide insight into how the women acquired asbestos-related disease and how they came to apply for compensation several decades after leaving the mines. Comparison of this data with data from the 1996 study also adds interest.

THE PLACE AND WORK

Sekhukhuneland, in Limpopo Province, is one of South Africa's major asbestos mining areas. It was otherwise known as the Pietersburg asbestos field. The asbestos mines are on the southern slopes of the Strydpoort Mountains along the northern bank of the Olifants River in the west, and on the southern bank and between the Olifants and Steelpoort Rivers in the east.

Most were small mines, except for the complex at Penge which was one of the biggest asbestos mines in the world. In the mid-1960s an estimated 10 000 men and women were employed on these mines. The exact number of women is not known but it was sizeable.

The majority of women were cobbers, working on and around heaps of asbestos ore, removing unwanted waste rock which stuck to asbestos fibres with hammers. Others worked as part of the family of a miner, or on the bigger mines as sweepers and packers in the mills, as sorters at the conveyor belts or as domestic workers in the compound or the houses of senior employees and managers.

From a previous study it is estimated that 3.4% of the women began work when less than 10 years of age, 21% between 10 and 14, and 49% between 15 and 24 years. The average time between the first exposure to asbestos on the mines and the first medical benefit examination was 39 years.

LITERACY AND PREVIOUS EXAMINATIONS

All women in the 2000 study had to sign a consent form, after a detailed explanation of the design and purpose of the study. Only a quarter could write their names. The rest indicated consent by placing their thumbprint on the document.

This supports the contention that the women applying for compensation were not well educated or equipped to cope with a compensation bureaucracy. It also illustrates the extent of the problem of underdevelopment and disempowerment of women in rural areas.

Two thirds of the applicants had not been examined since leaving the mines, despite the fact that many thousands of people had been examined in Sekhukhuland since 1996.

Of the 69 women previously examined in 1996, the outcome was not known in six of them. Eleven were certified in the first degree of disability, and one in the second degree of disability. Fifty-one did not warrant compensation.

In another study of 775 former mineworkers which included both men and women from the same area, it had been found that 58% were certified in the first degree of disability and 8% in the second degree. The lower level of incidence of disability in women in the 2000 study suggests that on the chest X-ray the breast shadow overlies the area of the lungs in which asbestos changes are most commonly seen.

The asbestos mines produced a great deal of waste rock and fibre which they disposed of on huge tailings dumps from which people took material to make bricks and to surface their lapas. The mines also used asbestos tailings to surface golf greens and football fields. Also mine managers rewarded good and faithful servants with a lorry load of tailings delivered to the village with which to build houses. People were exposed at home in all sorts of ways such as through asbestos in roofing sheets, on the clothes of miners and in heaters.

In the 2000 study 46% were born into a household where adult relatives were employed on asbestos mines – both parents (11%), father only (17.5%), mother only (8.5%) and uncle/aunt (9%). Of these 22% subsequently married asbestos miners, and 25% had siblings or cousins employed on asbestos mines and living in the same household. Only 4% had no household members who had worked in the mines.

ASBESTOS EXPOSURE

The majority of women in the 2000 study (74%) were born 20 or less kilometres from an asbestos mine or tailings dump. The remaining 1% were born on asbestos mines. Because of distances it was usual for them to live on the mine while employed, and so they were exposed to asbestos both occupationally and environmentally. Ninety-six percent of the women lived on the mine while employed.

On average the women worked on the mines for 6.2 years while their average length of service shown in the previous study was 10.2 years.

FINDINGS

Crackles when breathing could be heard at the base of the lungs in 83% of the women. Among those with less than five years service crackles were found in 45%. For those who had worked on the mines from 5 to 14 years crackles in the lungs occurred in 91%, and in 83% of those with 15 or more years of service.

GF Slade in the earliest study of asbestos miners in South Africa in

1931 describes that, "At the bases of the lungs… sounds could be heard. Very fine, short, dry, crackling sounds occurred towards the end of inspiration and during the early part of expiration. ... In the earliest cases the sounds were difficult to hear unless the room in which the examination was conducted was very quiet."

In the earlier 1996 study those examining the 770 women's chests were learning and they only began to hear crackles more frequently as the study progressed. Later they heard crackles in about 80% of women.

Other sounds in the chests also showed evidence of abnormality. Slade demonstrated that, with few exceptions, the incidence of respiratory disease was highest in the most heavily exposed asbestos mill workers. He also showed that the increase in winter of respiratory disease was most marked among mill workers.

Many expert physicians claim that people with the earliest signs of asbestos-related pulmonary (lung) disease, who may have 'normal' chest X-rays and lung function tests, do not have a significant disability. The evidence collected by Slade suggests otherwise. Also, the known risk of cancerous complications associated with asbestos exposure reinforces our view that the impact of occupational lung disease is great.

In the 2000 study five women stated that they had been treated for pulmonary tuberculosis in the past. This figure is low by comparison with the prevalence of tuberculosis among former gold miners. In the previous 1996 study 8% stated that they had been treated for tuberculosis in the past.

A single blood pressure measurement also suggested that hypertension is a significant health problem in the asbestos exposed group. Also of these women 7% were underweight and 38.5% were overweight which could indicate a liability to diabetes.

Friends of Tuva

Most women worked around asbestos heaps removing waste rock from asbestos fibres.

CONCLUSIONS

This sample of the women who had worked on the asbestos mines is probably representative of the many thousands, in Sekhukhuneland and elsewhere, who have been affected by what has proved to be a very dangerous substance – asbestos. Their household, environmental and work exposure was considerable.

No future group of women or men will ever be exposed again to the dust levels experienced in South African asbestos mines in the 40 years after World War Two. In the absence of any medical intervention reparation is the only option.

Any serious attempt to assist must include compensation. If the compensation system is going to be effective for the women it is vital to understand the characteristics of this group. It is important to have a well-informed community-based infrastructure to assist the claimants.

From this study we concluded that in the sample of 200 women:

- Two thirds had not been examined since leaving the mines, and that there must still be a considerable number who have never been examined.
- Literacy levels are low, thus they are not well equipped to cope with the centralised bureaucratic system for claiming compensation.
- Household exposure is probably a more important contributory factor than general environmental exposure.
- Work exposure implies environmental exposure for the duration of mine service.
- Living on the mine was the rule, not the exception.
- There is a contradiction when the results are split by gender.
- As a method of poverty relief compensation is important in Sekhukhuneland.

Occupational lung disease is not the only health problem. Tuberculosis, hypertension, obesity, and by implication diabetes, are significant problems.

Claims were submitted on behalf of all the men and women examined. Some of them have been compensated and some not, but through this process a lot of money entered the area in compensation payouts. LB

Those involved in the studies were JCA Davies, MR Makofane and ML Sekgobela. This article is based on a longer paper titled 'Asbestos in the sputum, crackles in the lungs, and radiologic changes in women exposed to asbestos.'