Prevalence of Tobacco Smoking Among Ex-Mineworkers of Transkei, South Africa

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Abstract

Background: The smoking of tobacco is one of the most important confounding factors contributing to lung pathology. It is therefore essential to know the degree of prevalence of smoking in the community of former mineworkers of the Transkei, who constitute one of the groups in South Africa most affected by smoking.

Objective: Prevalence study of smoking among former mineworkers of Transkei, South Africa

Method: This is a record review study from the Benefit Examination Clinic, which was carried out once a week at the chest section of Mthatha Hospital in Transkei.

Results: 466 ex-mineworkers were studied for their smoking habits. Non-smokers were lower in number at 97 (21%), the number of ex-smokers was 226 (48%) and smokers numbered 143 (31%). Little more than three-fifth were smokers - 89 (20%) - and ex-smokers - 142 (30%) - who were in their middle age (40-59yrs). Between 1% and 5% were observed to be in the extreme ends of their age groups (<40 &>60).

It was observed that among the ex-miners who had worked in the mines for a period of 10 to 19 years, the ex-smokers constituted 26%, the smokers 17% and non-smokers 9%. The ex-smokers, smokers and non-smokers were in a proportion of about 5:3:2. The population of smokers peaked from 15% for those with a mining history of nine or fewer year's underground to 42% for those who had been mining for 10 to 19 years and fell almost at the same rate from 42% to 22% in the group with 20 or more years of mining. Non-smokers among the sample increased from 5% (nine or fewer years) to 9% in the 10 to 19 years group, and ultimately settled at 7% when they had worked 20 years or more.

Conclusion: The prevalence of smoking among ex-mineworkers is high (79%) in the Transkei region of South Africa.

Keywords: *Prevalence, tobacco, smoking, ex-mineworker, bad effects, and education.*

Introduction

South Africans have puffed their way through 25 billion cigarettes, according to a "social report" released by British American Tobacco (BAT) SA in June 2002. The report says the tobacco industry and smokers in South Africa contribute nearly R5,5 billion in excise duty and VAT alone to the government exchequer. The total number of cigarettes sold in South Africa was 25 billion (1,2 billion packets).[1]Smoking-related deaths are projected to rise to 10 million a year

by the 2020s, and 70% of these deaths are expected to occur in the poorer countries.[2] Lung cancer, one of the few malignancies for which the main cause is known and can thus be prevented,is on the increase, especially in developing countries that have been targeted by tobacco companies.[3]

The estimate for South Africa is not available, but it seems to be a more serious problem in this country than elsewhere, especially in the ex-mineworkers of Transkei. Patients who visit the Umtata General Hospital's Benefit Examination Clinic (BEC) state lung complaints as their major reasons for consulting a doctor, and most of the patients seen at the hospital with chest complaints are former miners who also have a habit of smoking. Therefore, the purpose of this study was to determine the prevalence of tobacco smoking among ex-mineworkers of the Transkei.

Patients and Methods

Transkei has very high population density. Most of the former mineworkers reside in the far-flung and remote rural areas of the region. Their homes are scattered in the wide barren tracts of the Transkei. The poverty and unemployment levels are very high. The eighteen districts in the Transkei form the catchments area for the Benefit Examination Clinic (BEC). However, the main bulk of patients emanate from the adjoining areas like Tsolo, Qumbu, Mqanduli, Libode, and Ngqeleni and other localities. The examinations for the purpose of this research were carried out in the morning hours of every Wednesday for a five-hour period at a time. This day was chosen for the convenience of the doctor, as the hospital area remains unutilized by the other hospital doctors.

During a two-year period from May 1997 to May 1999, 2080, former mineworkers were examined at the Benefit Examination Clinic (BEC) at Umtata General Hospital (UGH), a tertiary hospital attached to the University of Transkei in Eastern Cape Province. The UGH is the main hospital serving a population of about seven million in this area. It is under-resourced and the only hospital which serves the mainly black community in this region of the Eastern Cape. The photographs of the X-ray plates were marked as follows for each participant: ex-smoker (ES), smoker (S), or non-smokers (NS). All the data collected from the X-ray photographs was analyzed by Epi6 Info computer programme. The result is displayed in tables.

Results

The records of 466 ex-mineworkers record were reviewed. The data revealed the following numbers: ex-smokers 226 (48%), smokers 143 (31%) and non-smokers 97 (21%) (Table 1). The highest number of ex-smokers - 142 (30%) - was recorded in the 40 to 59 age group. Similarly, smokers - 47 (10%) - and non-smoker - 89 (20%) - were highest in number in the same age group in this study (Table 1).

The duration of mining between 10 and 19 years was associated as follows with ex-smokers (26%), smokers (17%), and non-smokers (9%). (Table 2). The smoking increased from 15% (9 or less years) to 42% (10-19 years) between the first two age groups of mineworkers (Table 2) and decreased from 42% (10-19 years) to 22% (20 years or more) in the latter two groups (Table 2).

Table 1. Relationship between different age groups with ex-smokers, smokers, and non-smokers in former mineworkers of the Transkei

Age Groups (Yrs.)	Ex-smokers	Smokers	Non-smokers	Total
30 to 39	22 (5%)	19 (4%)	15 (3%)	56 (12%)
40 to 49	69 (14%)	48 (11%)	24 (5%)	141 (30%)

Cont... **Table 1. Relationship between different age groups with ex-smokers, smokers, and non-smokers in former mineworkers of the Transkei**

50 to 59	73 (16%)	41 (9%)	23 (5%)	137 (29%)
60 to 69	46 (10%)	29 (6%)	22 (5%)	97 (21%)
70 +	16 (3%)	6 (1%)	13 (3%)	35 (8%)
Total	226 (48%)	143 (31%)	97 (21%)	466 (100%)

Table 2. Years of mining in relation to ex-smokers, smokers, and non-smokers of ex-mineworkers of the Transkei

Mining Groups (Yrs.)	Ex-smokers	Smokers	Non-smokers	Total
1 to 4	4 (1%)	1 (0%)	1 (0%)	6 (1%)
5 to 9	43 (9%)	23 (5%)	23 (5%)	89 (19%)
10 to 14	63 (14%)	49 (11%)	24 (5%)	136 (30%)
15 to 19	58 (12%)	28 (6%)	20 (4%)	106 (21%)
20 to 24	25 (5%)	26 (5%)	10 (2%)	61 (13%)
25 to 29	17 (4%)	4 (1%)	7 (2%)	28 (7%)
30 +	16 (3%)	12 (3%)	12 (3%)	40 (9%)
Total	226 (48%)	143 (31%)	97 (21%)	466 (100%)

Discussion

There are various estimates of life expectancy in South Africa. Statistics South Africa estimates that the life expectancy in 1996 was 52.1 years for men and 61.6 years for women.[4] The Transkei region, being mainly rural and mostly poor, also carries a high burden of sick and unemployed ex-mineworkers; the life expectancy is probably less than the national average. Smoking among ex-mineworkers is quite common as a socially accepted part of Xhosa culture. The prevalence of smoking (inclusive of ex-smokers) among ex-mineworkers is almost double (79%) than that of the general population (46%) in the Transkei (Table 1).[5] The mining job is difficult and stressful. These mineworkers live in a group so there is always group peer pressure. Smoking and alcohol are used as a recreation method when they come out from the underground mines, and to celebrate that they have come out alive from the narrow rocks where they were digging, given the dangers inherent in the work that they do.

About half (48%) of mineworkers have given up their smoking habit because of the condition of their health, probably as advised by health professionals, or their health has deteriorated to such an extent that there is no choice except to stop smoking (Table 1). The fact that a large number of ex-mineworkers are smokers could be understandable as most of the mineworkers are illiterate and not aware of the consequences of smoking; or even when they are aware of the dangers of smoking, they often minimize the effects of it. The task of working underground is very stressful; therefore, smoking and drinking are used to relieve the stresses of hard work and to relax.

Socially too, smoking and drinking are often the only activities available on the mines.

Many former mineworkers (48%) have stopped smoking, however (Table 1), while it is a known fact that smoking is also associated with genetic predisposition. Some individuals will never smoke, and some will never stop, depending upon their spectrum of vulnerability. About one-fifth (21%) of the mineworkers have no smoking history (Table 1).

A lesson could be learnt from the fact that it is not necessarily difficult to stop smoking. By interviewing several mineworkers, it was found that they stopped smoking on their own as they recognized and realized the adverse effects of smoking. Coughing and exacerbated sputum production in many of the mineworkers made them to decide to stop smoking. Twenty-one percent (21%) of non-smoking ex-miners were comparatively healthy in comparison to smokers in the same age groups, although they too had been exposed to dust in the mines just like their other colleagues (Table 1).

Passive smoking is another problem. It was difficult at the time when the sample subjects were working to avoid passive smoke inhalation, as there was no provision for separate hostels for non-smoking mineworkers. The life in hostels was very crowded and no law was in existence to safeguard the rights of non-smokers. Many toxins are present in higher concentrations in side stream smoke than in mainstream smoke and, typically, nearly 85% of the smoke in a room results from side stream smoke.[6]

Only 23 (5%) mineworkers were found to be non-smokers in the middle-aged group. The youngest and oldest mineworkers - of <39 to >70 years - who had no history of smoking were few, averaging only 13 men or 3% of the total sample (Table 1). The number of smokers was more than double at 48 (11%) among the middle-aged group, and almost equals 1%-3% more than non-smokers in the extreme age group (Table 1). It is difficult to estimate the number of demised mineworkers, but certainly in the last six years the corpses that were brought for autopsies were also found mostly to have been smokers. The mortality related to smoking is high, although it remains underestimated. According to the author's experience, the Umtata General Hospital's records indicate that smokers are more prone not only to death from lung disease but also of dying younger than non-smokers. This may not be an irrefutable observation, but there is need for a study on the relation between youth mortality and smoking.

The duration of time-spent mining could be correlated among ex-smokers, smokers, and non-smokers (Table 2). The quitters registered the highest number in all the categories of ex-smokers (26%), smokers (17%), and non-smokers (9%) among mineworkers who had worked in the mines for periods ranging between 10 and 19 years. After this the number of quitters decreased in frequency in all the categories of smokers. The ex-smokers, smokers and non-smokers were in proportion of about 5:3:2. It means that when five mineworkers decided to quit smoking, for instance, three were still smoking, and only two could be non-smokers. These non-smokers were in the minority of course but could be smoking passively in the overcrowded hostel environment. The relationship between smokers (including ex-smokers) and non-smokers was not consistent and was statistically insignificant (Table I). The longer the period the former miners had spent mining, so too did the mineworkers tend to acquire the habit of smoking, but after developing lung problems they dropped their levels of consumption of tobacco. The pattern of smoking was found to increase markedly with the increase in the duration of mining and tapered off later in the same period. The population of non-smokers was at an all-time low and remained more or less constant in all the years of mining.

A maximum number (52%) of ex-mineworkers fell in between 10 to 20 years of mining history, while 20% had worked nine years or less than that. The mineworkers who worked more than 20 years constituted 28% of the total number of mineworker (Table 2). The number of smokers rose slowly from 15% among miners who had spent nine years or less in that occupation and peaked to 42% among those who had been mining from to 10 to 19 years and again fell almost in the same proportion from 42% to 22% in their next 20 or more years of mining experience. The number of miners who had never smoked increased from 5% to 9% over a mining period of ten years, and ultimately settled down at 7% when they had worked 20 years or more (Table 2).

Increased risk of developing lung cancer depends upon the age when a person starts. The younger a person is when he starts smoking, the greater the risk of developing lung cancer. Death rates increase approximately in proportion to the duration of smoking: doubling the duration of smoking from 10 to 20 years increases the incidence of lung cancer 16 times if daily cigarette consumption remains constant. [12] The amount of tar in cigarettes is also important but less so than the number smoked or the duration of smoking. Chronic bronchitis and industrial bronchitis are similar, but the latter is not associated with cigarette smoking. Both are associated with mucus gland hypertrophy and goblet cell hyperplasia in large airways.[7]

The cheap rate for hiring labour in South Africa's mining industry also meant that mining employers hardly cared for the dangers associated with smoking among its employees in a hazardous environment. The bad effects of tobacco smoking are underestimated. The two commonly used legal drugs, alcohol, and tobacco, are more frequently consumed than all other illegal drugs combined among miners, with disastrous consequences for their health. [15] Smoking is even more acceptable than alcohol, and often people have an indifferent attitude about its harmful effects in the community.

The burden of proving that disease is occupational in origin lies with workers. They must find physicians who are convinced that their illnesses are occupational in origin or that their illnesses were aggravated or hastened by occupational exposures. Physicians must then be able to convince referees who hear the cases that the diseases are indeed work-related. Since occupational lung cancer does not have distinctive clinical features, if an ex-mineworker with lung cancer has smoked cigarettes, has had diagnostic X-rays, and has also been occupationally exposed to silica dust in gold mines, an expert medical witness, using clinical judgment, still cannot say that the disease is without question occupational in origin.[8]

Among the ex-mineworkers who have been examined at the Umtata General Hospital, there is evidence to show that many of them have lung disease in one form or the other, mostly due to dust inhalation,[9] arising from when they were still working, or from tobacco smoking or from a combination of both. However, there is also clear evidence to show that most of the miners who are sick are also smokers or have been smokers, but for the latter the decision to quit smoking has been made late because their former habit of smoking has already done some damage to their lungs. But apart from the clinical evidence of the consequences of smoking, many ex-mineworkers have smoked while they were employed and continue to do so. For reasons that we have not necessarily pursued in this study, there is clear evidence nonetheless that tobacco smoking is a prevalent habit among the ex-mineworkers of Transkei.

Conclusion

The prevalence of smoking is very high (79%) among ex-mineworkers in the Transkei region which

is twice higher than that among the general population. Health education with emphasis on the bad effects of tobacco smoking is an important step towards curbing the widespread habit of smoking among ex-mineworkers.

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