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UNIVERSITY OF CAPE TOWN

MASTERS OF PUBLIC HEALTH:
Mini Dissertation

FARM WORKERS IN STELLENBOSCH:

A survey of factors affecting health

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ABSTRACT

This is a cross-sectional study describing the condition of farm workers in the Stellenbosch area of South Africa.

The study was done to establish a profile of farm workers' health;

and to investigate the extent to which the health of farm workers may be impaired by identified factors, both environmental and non-environmental.

Objectives:

- To describe the conditions of life of farm workers and families
- To describe harmful exposures on farms and their effects on the health of farm workers and their families
- To evaluate the access of farm workers and their families to health services

Methods: The study design was a cross sectional analytic survey, undertaken in the latter half of 1998, using all Stellenbosch farms as the sampling frame, of which 90 were selected by random procedure. The farms were surveyed in two stages. The first stage was a household survey, followed a few days later by an individual survey. The household survey enumerated all individuals on the farm in house-to-house interviewing of a responsible adult from each household. Using information from the household survey, the individual survey sampled all children under 9 years, all adults aged 55 years or more, and every 5th adult in the age range 15 - 54 years. Eight trained interviewers used

a standardised household questionnaire, and separate questionnaires for each of the individual interviews.

Findings: the main findings of the study were the fact that the conditions of work and life for farm workers were poor. We found that the illegal DOP system is still in practice on 8% of the farms where the literacy rate amongst the community was also found to be very low. This had lead to the unavoidable heavy drinking habits. Only 4% of the population attended school to learn to read and write in a community where overcrowding (24% of the population) and low wages for workers (20% of the workers earn less than R 900) were already posing a threat to healthy lifestyles and indicating poor living conditions. One of the direct consequences of these being teenage pregnancy (age at first pregnant could be as low as 12 years of age) and trauma requiring the attention of a health care worker, which 7% of the participants had experienced only a month before the survey.

Apart from disability which 28% of participants said was a direct consequence of a trauma, this study also found that farm workers were faced with medical conditions such as hypertension, headache etc.

1. INTRODUCTION

1.1 HISTORICAL BACKGROUND

Stellenbosch is a small town in the South of the Western Cape Province, about 50 km away from Cape Town, the main city. It actually takes about 40 minutes drive from Cape Town to reach the splendid town of Stellenbosch with its historical buildings (houses/architectures) and wine estates. Back in history it is well documented that the Cape of Good Hope was still a small city when Cape Town's Governor Simon Van Der Stel decided to explore the untouched part of the inland. He then came across the Eerste River in 1679 and called the area Van Der Stel se Bosch (Van Der Stel's Bush) later to be known as Stellenbosch.

The town of Stellenbosch was declared in 1685. It is the second oldest town of South Africa and one of the most famous towns located in the Cape wine lands together with Paarl, Wellington, Franschhoek, and Somerset West.

Simon Van Der Stel who was an enthusiastic wine maker, soon encouraged vines planting and this was very successful in Stellenbosch, which was also known to be a rich and fertile valley.

The history of Stellenbosch is tightly linked to the one of wine production in the region. In fact Stellenbosch has a long history of wine farms which have to date proudly contributed to the production of South Africa's world rated wines. However, living and working on farms have not always been without negative consequences, especially for farm workers and their families. We know from

the literature (see literature review) that the relationship between farmers and farm workers has always been cheap, corrupt and difficult: from the bad working conditions to the resulting interpersonal violence sometimes leading to health threatening conditions if not to death, the responsibilities were reportedly unilateral.

In effect it has constantly been reported that farmers were responsible for inhuman treatments to their workers, causing them to live in such environments where their health status could only be precarious.

Poverty and related diseases were reported to be continuously experienced by farm workers and their families who, in most cases were left with no other choices but adopting destructive lifestyles.

The most cruel way in which they were forced to remain in poor living conditions and at the mercy of ill health and related risk factors was to facilitate access to alcohol for them. It is to this end, but also for cheap labour purposes that most farmers have used the DOP System for many years. It is a system in which farm workers were offered bottles of wine as recognition for their work instead of proper wages. This system is still in practice on farms in Stellenbosch and elsewhere in South Africa although it is now illegal. This aspect of the life on farms will also be discussed in this work which is a survey describing conditions of life and work on farms, highlighting the risk factors and related harms regarding the health of farm workers on Stellenbosch farms. We will then discuss ways in which these problems could be brought to an end, especially actions being taken on the ground.

1.2 LITERATURE REVIEW

It is well documented that life on farms is miserable for farm workers, especially in South Africa where this situation was worsened in many cases by the negative attitudes of farmers towards their employees and their families. Farm workers have thus for many years been exposed to environmental factors as well as destructive lifestyles due to situations created within their own living context.

The health of humans is seen as a result of a complex and fragile balance between numerous factors, of which the environment plays an important role. According to Dr Roscoe Taylor of the Australian Government's department of Health and Ageing "Environmental health involves those aspects of public health concerned with the factors, circumstances, and conditions in the human surroundings that can exert an influence on health and well-being." (1).

In the case of farm workers there is abundant evidence that environmental factors contribute to ill health amongst children as well as adults. The particularly difficult living conditions on South African farms for farm workers and their families have contributed to the deterioration of their health status over decades. In a report released by the South African Human Rights Commission, London comments that "The historical background of the poor living conditions on farms lies generally in South Africa's history of colonial conquest and dispossession of indigenous people, which was enforced by the 1913 Natives Land Act: 87% of Land became white owned, whilst blacks were relegated to the remaining 13%. This was at a time when many farmers were unable to cultivate or use the entire extent of their land due to lack of capital.

This obviously has provoked protest and resistance amongst the victims, before finally resulting in sharecropping “. (2)

In a study looking at farm workers' living conditions and basic rights, London stressed the fact that farm workers have a long been denied the basics of human rights in South Africa due to their status as farmers' employees: “Farm workers have only recently been extended the same rights as all other employees; with the adoption of the Agricultural Labour Act in 1993, and the Labour Relations Act of 1996. However, such democratisation-born laws could not prevent farm workers from ‘remaining vulnerable to an undue burden of social and health problems. Alcohol abuse due to the DOP system, pesticide poisonings, and other occupational hazards illustrate that the likely success of efforts at redress depends on a greater awareness of the rights and justice dimensions of the health problems facing these workers” (3)

However, despite the democracy induced improvement in law, there is evidence that farm owners don't generally comply with labour laws. Many farm workers still encounter some violations of the labour law by farmers. Working conditions have not always improved and wages are still very low in some farms. They often lack the minimum means to ensure a decent lifestyle for their families, as Rust puts it: “...this contributes not only to inequalities and material poverty, but also to developmental problems that may hamper the farm worker's social, economic and physical development. This in turn may give rise to misconduct such as alcohol abuse”. (4)

The few South African farmers, who complied with the laws aimed at improving the living conditions of farm workers, would often not lose out

financially. Farm owners could comply with the new laws and still maintain farm workers in hopeless, pathetic lifestyles: “since the minimum wage legislation required farm workers to be paid at least R800 a month, some farmers have complied but have withdrawn a range of benefits to claw back the increased outlay. Farmers have started charging, or have increased rent, have stopped supplying food and stopped providing school transport for farm workers’ children.” (5)

Farm workers live in a system which struggles to change its practices, regardless of the harmful exposures and inhuman humiliations it may cause. How would they suddenly be allowed at decision making tables, thus disorganising the whole social structure. Indeed, this step would resemble a revolution for farm workers who have since lost self confidence and self-esteem for having been excluded from every component of the sick system in which they are confined. (4)

Farm workers are exposed to increased levels of anxiety and increased prevalence of depression (6), and yet they are expected to accomplish physically hard labour. This was found by Sanne et Al in the Hordaland Health Study comparing farm workers with non-farm workers: “...Among men, farm workers reported longer work hours, lower income, higher psychological job demands and less decision latitude compared with non-farm workers. Farm workers had physically heavier work and a lower level of education than non-farm workers.” (6)

The effects of occupational exposure on the health of farm workers and community members are well documented. A study done by Heeren et al

looking at agricultural chemical exposures and birth defects in the Eastern Cape Province, reveals that babies with birth defects were seven times more likely to be born to women exposed to chemicals used in gardens and fields compared to no reported exposure (OR 7.18, 95% CI 3.99, 13.25); and were almost twice as likely to be born to women who were involved in dipping livestock used to prevent ticks (OR 1.92, 95% CI 1.15, 3.14). They were also 6.5 times more likely to be born to women who were using plastic containers for fetching water (OR 6.5, 95% CI 2.2, 27.9). Some of these containers had previously contained pesticides. (7)

Agrichemicals are extensively used in the South African farming sector and pose a threat to farm workers' health, which is often under reported. London demonstrated that "The majority of reported cases of agrichemical poisoning involve organophosphates (OPs), (approximately 68% in the Western Cape in 1987-91), they most frequently occurred in the setting of workplace poisoning (18%), domestic accidents (48%) and suicide (34%) on farms in the region. Farm workers attempting suicide appear to have a four-fold higher risk of killing themselves than town or urban residents, possibly due to greater OP access". There is an urgent need of information and education about proper measures and precautions to be taken. In this study London has highlighted the fact that access to OP is made easier by not using properly commissioned store rooms and/or a lack of systems that result in the legal disposal of containers. (8)

In the same vein Reeves et Al. argue in their study 'Greater risks, fewer rights: U.S. farm workers and pesticides' that "Violations of worker safety laws were

common, contributing to 41% of reported poisonings. No violations occurred in another 38% of poisoning, this indicated that existing laws did not adequately protect workers from pesticide exposure” (9)

As stressed above, farm workers lack education and basic information, which would allow them to make proper decisions about their security and protection against harmful agrichemicals. They usually depended on farmers whose concern was not farm workers' health but rather production output. While farm workers may present with occupational illnesses (e.g. eye problems, upper respiratory problems, lower respiratory problems, musculoskeletal problems, acute traumatic injury, etc...), their employer tends not to see them as serious matters, instead they respond to these with physical and psychological abuse and intimidation. (10)

Education and literacy levels have been found to be low. There are clear age trends with older farm workers being less likely to read and write (11). A study by Edginton et al. looking at the child health in farm communities found the education status of mothers to be very low. Reasons for this state essentially related to the poor conditions in which these communities live. Correcting the situation of poor physical resources and low educational status of women living on farms would result in lower parity, fewer child deaths, hospital deliveries and up-to-date immunisation. (12)

A study by London et al found the levels of illiteracy to be substantial (21-44%) among farm workers in the Western Cape Province, and alcohol consumption is of concern within these communities. The ongoing use of the DOP system together with the lack of protective equipment are sources of

threats to farm workers' health, as they lead to 'avoidable' exposure to risk factors. This may result in injuries and other health conditions such as poisoning, which pose substantial challenges to public health authorities (13). High levels of alcohol intake and poor education are known to be sources of interpersonal violence, violence against black workers as well as the killings of white farm owners. (14)

Low levels of education and high intake of alcohol exacerbate the exposure to harmful environmental factors, as risky behaviour and lifestyle are common among these populations. An example of environmental hazard due to heavy alcohol consumption was given by London in one of his studies on the DOP system: 24 workers were poisoned when given wine as part of the DOP system. This wine was contaminated with the carbamate insecticide aldicarb (15). Many social problems are associated with alcohol abuse: child abuse, violence against women, family disruption and other forms of interpersonal violence (16). In fact "violence against women was a major problem on farms in the Western Cape. Acts of violence are highly prevalent; it is linked to paternalism and women's status as the wives of the male farm workers. Furthermore, a culture of gender-based violence is engrained into both childhood and adolescent behaviour, and is often linked to alcohol abuse" (17).

A South African Human Rights Commission report describes violence against farm workers as follows:

"Numerous cases of violence against farm workers were reported to the Commission. In Limpopo Province, assaults against farm workers seem to be common practice, rather than

the exception. This is accompanied by a very low rate of conviction of perpetrators. Many assaults go unreported as farm workers do not have much faith in the police; some even fearing retribution from farm owners after learning that workers have laid charges against them. In a case reported to the Commission in Limpopo Province a worker was shot at by a farmer, the bullet grazing his head. When he went to the local police station, they refused to assist him in obtaining medical care. After taking care of this himself, the police did nothing to obtain the medical statement. The prosecutor declined to prosecute the case due to lack of evidence. In other cases, the police have directly assisted farmers in evicting workers. The main perpetrators of violence seem to be individual farmers, commandos and private security groups. The most notorious of these is the vigilante group, Mapogo a Mathamaga, operating in Limpopo and Mpumalanga Provinces, which includes former members of the Rhodesian army and Koevoet in its membership. Mapogo members have been linked to a number of murders of farm workers.” (2)

Again, this clearly shows how much dependent farm workers are vis-à-vis their employers. Even in the case of assault where reporting should be encouraged, farm workers do not report, for fear of losing their jobs or of reprisal from the boss if the case is disclosed or pursued, leading to psychological trauma, stress and depression as described above.

Poor social conditions on the farms have also been found to be strongly related to low wages. Poverty plays a very important role in the choice of lifestyle among farm workers. A 1995 survey showed that the DOP system was still prevalent in 9.5% of farms, in the upmarket farming area of Stellenbosch with an estimated 780 workers affected (18). Incomes of farm workers have been found to be constantly lower than that of urban unskilled workers (19). A 1995 national household health survey found that more than two thirds of farm workers' families in the Western Cape earned less than the

minimal living level of R900 per month. The average income of households of farms identified as practising the DOP system in the Stellenbosch area was lower than this level, with the median weekly wages for men being R90 and that for women being R68 in the same year (20).

An unpublished study by Te Water Naude et al., looking at the DOPstop association promoting health on farms found that households where wine was supplied (12.5%) were significantly worse off in terms of household items owned: flush toilet, tap water inside, electricity, refrigerator, TV, radio, and telephone were often not affordable or not supplied by the farmer (11)

The historical background of the general alcohol consumption in South Africa hence lies in the existence and promotion of the DOP system as well as that of beer halls, which were particularly associated with the mining industry. These two factors have contributed to build a culture of heavy drinking amongst male partners within the black society, which has also “led to black women using and abusing alcohol more frequently, and thus deviating from traditional tribal customs of minimal alcohol use until after the child-bearing years” (21).

Clearly this was also the origin of the well-known Foetal Alcohol Syndrome (FAS); a preventable condition ‘affecting babies of women who drank heavily during pregnancy’ and similar alcohol-related teratogenesis such as Alcohol-related birth defect (ARBD) and Alcohol-related neurodevelopmental defect (ARND). These babies are born with specific facial features, an average IQ of 70 and learning difficulties (21).

And there is now abundant evidence that the prevalence of FAS is continuously increasing in socio-economically deprived communities. Moreover, the prevalence of FAS in the Western Cape is one of the highest in the world: "The one and only cause of this misery is alcohol use during pregnancy, with the first three months being the real danger period for the unborn baby. Up to 26% of coloured Western Cape women attending prenatal clinics, drink enough to give birth to a baby with FAS. Fifteen percent of the 160 children who attend the Philippi Children's Centre in Cape Town have Foetal Alcohol Syndrome, compared to a worldwide rate of 0,4 percent" (22).

In addition to FAS, the lack of sufficient knowledge of responsible alcohol consumption is a risk factor for teenage pregnancy with its range of consequences as stressed by Goonewardene: "Teenage pregnancies, especially those below 17 years of age have a significantly higher risk of adverse outcomes. A large proportion of these pregnancies is unplanned and could be prevented by counselling" (23).

Child labour and child accidents on farms are also of concern in the South African agricultural sector. The existence of child labour has been poorly documented, and thus the full extent and nature of the work is unknown. The 1994 October household survey estimated that approximately 200000 children aged 10-14 years and a similar number of those aged 15-17 years were employed in the country. As activities of children under 10 years were not included in the survey, the true figure could be somewhat higher. Just over one fifth of them were employed in agriculture, which was considered to be

the most dangerous sector for children, because of the dangers posed by pesticides and agricultural equipment (24).

In general, it is important to differentiate child work from child labour. Child work according to UNICEF is the participation of a child in economic activity that does not negatively affect their health and development or interfere with education. That kind of (light) work is permitted from the age of 12 years under the International Labour Organisation. On the other hand, child labour reflects an abuse of the child who would participate in economic activity below the age of 12, and those between 12 and 14 who are engaged in harmful work, and all children engaged in the worst forms of child labour (enslaved, forcibly recruited, forced into illegal activities and exposed to hazardous work) (25).

In sub-Saharan Africa, where UNICEF reports an estimated 48 million child workers, most countries have a culture of child work with children accompanying their parents to work during school holidays without being assigned to any significant task. This was the central point of difference between some human rights organisations and a few West African countries accused of practising child labour (25).

Agricultural equipment represent one of the most frequently identified causes of fatal and non-fatal injuries on farms. One study done by Cameron, which examined the problem of accidental injury to children on farms, revealed that most accidents occurring to children on farms were due to falls as well as tractors and other machinery. According to the same study “between 1976 and 1988 a total of 167 children in England and Wales were killed as a result

of accidents on farms, representing nearly 25% of all farm related deaths. In the United States, where about 300 children die each year in farm accidents, the problem has been described as being of 'epidemic' proportions" (20).

A qualitative survey of children of farm workers in South Africa, depicts the profile of those children as "one of the particularly vulnerable groups of children. They belonged to families living far from their traditional homes, either living and working on privately owned farms, or living in informal settlements and only employed on farms on a casual basis. Many of their parents have been or were subject to exploitative working conditions with inadequate wages. They were often living under very difficult conditions and were isolated from the wider community. Many of the children had therefore been denied their basic rights" (5).

Children living in farms often are denied the right to be looked after, to good health and welfare, to play and not to work, to be protected from sexual abuse, not to be exploited, to education etc...

It is seldom that children of farm workers have access to learning facilities as opposed to other children. Where schools exist, they are usually of minimal concern for departments of education which generally exclude them from normal planning processes (22).

Tuberculosis rates in the rural Western Cape are in excess of 1000 per 100000, (26) in contrast to the reported rate for the province being half that at 464 cases per 100 000 population. The measured prevalence of hypertension

for the Western Cape is 12.5%, (27) and the reported prevalence of hypertension in Western Cape farm workers is 21.6%. (28).

With respect to undernutrition, male adult farm workers have been shown to be 2.5cm shorter on average than coloured men in urban Cape Town (29), and were substantially shorter than the norms for men in the USA (30). This is a significant finding at population level.

Edginton and Gear have documented that conditions on farms were poor in the old southern Transvaal for the health of women and children, and state that the situation is generalisable (12). In the Western Cape, low-birth weight rates are close to 30% in some farming districts (24), and are uniformly worse in the rural areas (31). The provincial prevalence of children underweight for age has been assessed as being between 12.0% and 17.1%. The stunting prevalence was between 11.6% and 13.8% (27). A study looking specifically at the nutritional status of farm children in the Stellenbosch district found 31.8% of the sample were underweight for age (32), and 25.4% stunted. Wasting, at 20.6%, was also much greater than the provincial figure of 1.3% to 2.8% (27).

In a study done in Wellington, a rural district of the Western Cape, a high rate of Foetal Alcohol Syndrome was found in the schools – 4.6% in children aged 5 to 9 years. This was the first such population based prevalence study on Foetal Alcohol Syndrome, and compares poorly with the rate in western countries of 0.2%. The rural rates of FAS were found to be significantly higher (33).

Access to health services is another nightmare for farm workers and their families. A farm worker puts it thus: "The clinic visits once a month. That

means we are allowed to get ill only every fourth Tuesday." day clinics and other public hospitals are usually inaccessible because of distances. Some farms have their own health workers, but not all farm workers can afford this (4).

High proportions of black rural women have been found to give birth at home. The national household health survey mentioned above found that Western Cape farm workers had approximately equal access compared with other disadvantaged groups in the country, across a wide range of indices used. It was notable that travel time to facilities for care was higher for farm workers, and that a significant barrier to accessing health care was the unavailability of transport and that they were not given time off. A paradoxical situation was that they used the services of a private doctor more frequently compared with other disadvantaged groupings. On the other hand they used only public services for antenatal care (28). The indices measured showed great inequity between the advantaged and disadvantaged groups. Poorer perinatal health outcomes in the Western Cape have been linked to poorer services and distance from the Cape Town metropole (31).

Against the above background, it appears that farm workers are faced with extremely complex problems, but the situation is not hopeless. The willingness to take on initiatives which will help improve the living conditions of farm workers is the main drive of some associations and organisations such as the DOPstop Association, which is concerned with the dismantlement of the DOP system and improving conditions for farm workers in the Western

Cape. On the other hand, an increasing number of individuals like Dr Van Louw argue that “empowerment would give farm workers control over their lives so that they are able to determine for themselves in which direction they are heading” (4).

1.3 MOTIVATION FOR THE STUDY

The purpose of the research was to establish a profile of farm workers' health in the Stellenbosch area. In addition, there was a need to investigate whether alcohol and the DOP system had a deleterious effect on the health of affected workers and their families.

1.4 AIM AND OBJECTIVES

A) Aim:

Investigate the extent to which the health of farm workers may be impaired by identified surrounding factors, environmental and non-environmental.

B) Objectives:

- describe the living conditions of farm workers and families.
- describe the harmful exposure on farms and their effects on the health of farm workers and their families.
- evaluate the access farm workers and their families have to health services.

2. METHODOLOGY

2.1. METHODS

The study design was a cross sectional analytic survey, undertaken in the latter half of 1998, using all of the approximately 400 Stellenbosch farms as the sampling frame, of which 90 were selected by random procedure. The farms were surveyed in two stages. The first stage was a household survey, followed a few days later by an individual survey. The household survey enumerated all individuals on the farm in house-to-house interviewing of a responsible adult from each household. Using information from the household survey, the individual survey sampled every 5th adult in the age range 15 - 54 years.

Eight trained interviewers used a standardised household questionnaire, and separate questionnaires for each of the individual interviews. Data were collected on demographics, living conditions, education, employment, medical histories and risk behaviours. Anthropometric measurements were done using a digital weight scale, a vertical height rule, and a tape measure for head circumference. Blood pressure measurements on adults used the mean values of three sequential readings of a digital sphygmomanometer.

The data were captured in Excel and analysed using Stata and Epi Info.

Consent was obtained from each of the respondents in their home language, which in all cases was Afrikaans. Confidentiality was observed at all stages in the research process, for the subjects and for the farms. The University of Cape Town Health Services Ethics Committee granted ethical approval for the study.

The research team arranged follow-up for those who were found to have medical conditions or other conditions needing medical attention, eg. uncontrolled hypertension, nutritional wasting or foetal alcohol syndrome, with the local health services.

2. 2. MEASUREMENTS AND DEFINITIONS

The household crowding index was used to give an indication of the level of household crowding, and is calculated by dividing the number of adult equivalents in a household by the number of bedrooms. The precise formula used was $(\text{adults} + [\text{children} < 15 \text{ years}] / 2) / \text{bedrooms}$. Children <15 years was used as an approximation of children <18 years, as the latter were unavailable from the data. A ratio of >2.5 indicates over-crowding. (35)

UNESCO defines a person as being literate if they can with understanding both read and write a short simple statement on their everyday life. The measure of literacy used in this study was reported ability to read and write.

A household socio-economic score was developed specific to this study, based on the availability of each of the following 7 amenities: Flush toilet, tap water inside, electricity, refrigerator, TV, radio, and telephone. Each scored 1 point. The score was not weighted according to an average price of the item involved, as others have done.

Farms were categorized as 'DOP' farms if the majority of the respondents in the household survey reported that wine was supplied to the workers by the farmer or farm manager.

The Child Care Act 74 of 1983 and the Basic Conditions of Employment Act 75 of 1997, as well as the Minimal Age Convention of the International Labour Organisation (ILO) prohibit the employment of children younger than 15 years, and this was our working definition of child labour in this study.

The Epi Info computer programme was used to categorize the children as underweight for age, under height for age (stunting) and underweight for height (wasting). The calculations used age and sex, and were based on the United States National Centre for Health Statistics (NCHS) reference population values. The cut-off point used was the median less 2 standard deviations, as recommended by the World Health Organization.

The Body Mass Index (BMI) was used to describe the individual anthropometric nutritional status of adults. BMI is the weight in kilograms divided by the square of the height in metres. BMI values are categorized as undernourished (<19 in women and <20 in men), normal (19-<24 in women and 20-<25 in men), overweight (24-<30 in women and 25-<30 in men), and obese (>30 in both women and men).

Amounts of alcoholic beverage consumed were calculated according to a table included in the questionnaire. It provided a large number of options regarding containers and forms in which alcohol was supplied, and intakes were matched to this, in amounts and types. The absolute amount of alcohol consumed was then worked out. In addition, the CAGE questionnaire – an acronym for four yes/no questions (Cutting down, Angered by others' criticism,

Guilt, Eye-opener) - was used. If a subject scores 2 or more on the CAGE, they are identified as potentially alcoholic.

Foetal Alcohol Syndrome (FAS) refers to a constellation of abnormalities in children born to mothers who drank heavily during pregnancy. The prevalence is best assessed at school entry.

Trauma in adults was assessed by questioning the respondent whether any injury or trauma in the previous month had required attention by a doctor or a nurse.

3. FINDINGS

The findings first show a description of the factors influencing health conditions of farm workers, as well as some of the health problems encountered on Stellenbosch farms. We then look at the relationships and possible associations between risk factors and conditions, which were found relevant.

Table 1: descriptive statistics for participants (people)

Continuous variables (Adults/people)		Number	Mean (S.D.)	Median	IQR	Range
Age	Males	131	33.6 (10.83)	36	25 – 42	15 – 54
	Females	133	30.71 (10.05)	31	22 – 38	15 – 54
	Total Adults	264	32.14 (10.53)	33	23 – 40	15 – 54
Age at first pregnancy		101	18.45 (3.11)	18	16 – 20	12 – 29
Age first employed		205	16.91 (3.37)	17	15 – 18	9 – 31
Body Mass Index (BMI)	Males	129	21.85 (5.14)	21	19 – 23	17 – 61
	Females	127	25.58 (7.30)	24	21 – 29	14 – 55
Body Mass Index > 30		28	37.92 (8.93)	34	32 – 40	31 – 61
Categorical variables (Adults/people)		Frequency	Percentage	95% confidence interval		
Participants able to read		210 / 264	79.55	74.17 – 84.24		
Participants who can write		208 / 264	78.79	73.36 – 83.86		
Participants attending school		11 / 264	4.17	2.10 – 7.33		
Child labour		29 / 263	11.03	7.48 – 15.39		
Current smokers		164 / 257	63.81	57.61 – 69.69		
Previous smokers		33 / 94	35.11	25.54 – 45.64		
Non smokers		60 / 257	23.34	18.31 – 29		
Current drinkers		141 / 257	54.86	48.56 – 61.05		
Previous drinkers		51 / 116	43.97	34.76 – 53.48		
Non drinkers		65 / 257	25.29	20.09 – 31.07		
CAGE score >1		118 / 141	83.68	76.53 – 89.36		
Trauma		17 / 243	6.54	4.13 – 10.96		
Disability as a result of trauma		73 / 261	27.97	22.61 – 33.84		
Reported Headache		190 / 263	72.24	66.41 – 77.57		
Reported Hypertension		29 / 263	10.98	7.51 – 15.45		
Ever pregnant		105 / 129	81.40	73.59 – 87.70		
Previous TB		24 / 239	9.13	6.54 – 14.57		

Age and gender

There were 264 adults interviewed of whom 131 males and 133 females. 116 of the participants were reportedly married and men tend to be 3 years older than women.

Of these females, 105 (81%) had ever been pregnant. Their age at first pregnancy was a median of 18 years, with a range of 12 – 29 years.

The median age at first employment was 17 years, with a range of 9 – 31.

Child labour

Child labour: to the question 'do you know of any children < 16 working on this farm?', 29 participants (11.03%) said yes, 223 participants (84.79%) said no and 11 (4.18%) said they don't know.

Body mass index (BMI)

28 (11%) participants are obese (BMI over 30). However, females tend to be more overweight than males (Mean BMI = 25.58 for females and 21.85 for males).

Smoking and alcohol consumption

164 (63.81%) participants are current smokers, while 33 (35.11%) of the remaining 94 have smoked before. Just above half (141; 55%) of the participants said that they were current drinkers, and almost half (51; 44%) of the remaining were previous drinkers. CAGE scores of >1 were proportionately rather high in this survey.

Trauma and disability

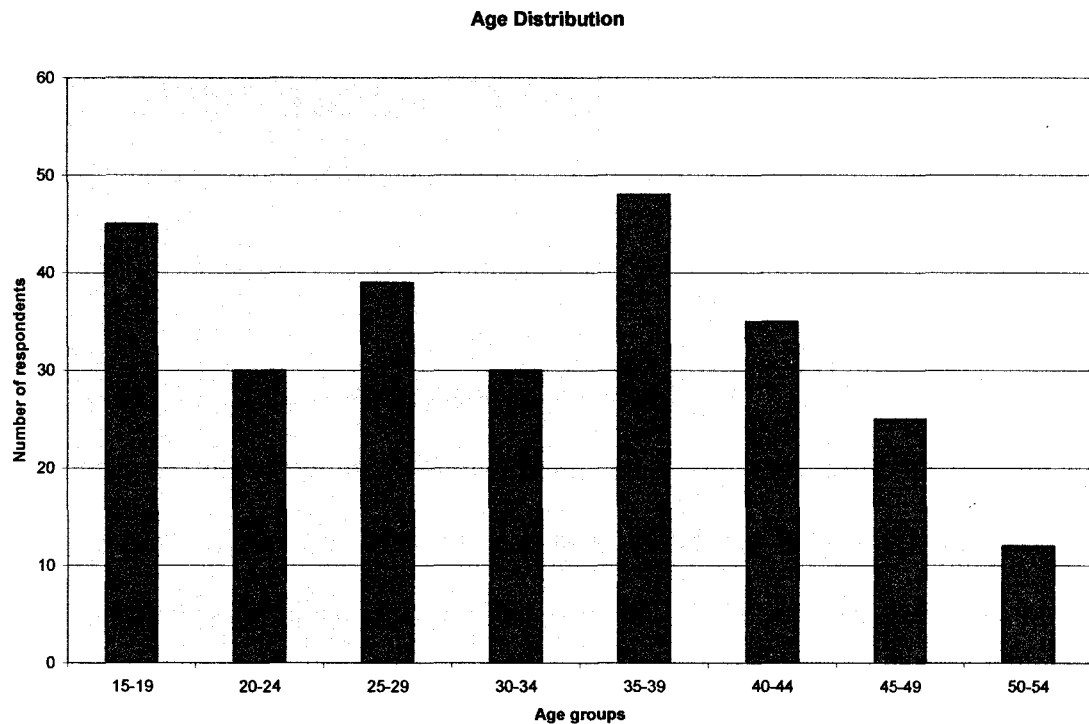
17 (6.54) participants reported that they experienced some kind of trauma, which needed the attention of a doctor or a nurse a month before the survey.

73 (28%) of participants reported that disability was the result of a trauma.

TB, Hypertension, headache.

190 (72.24%) participants reported they had experienced headache, while 29 (10.98%) of the participants said they had hypertension.

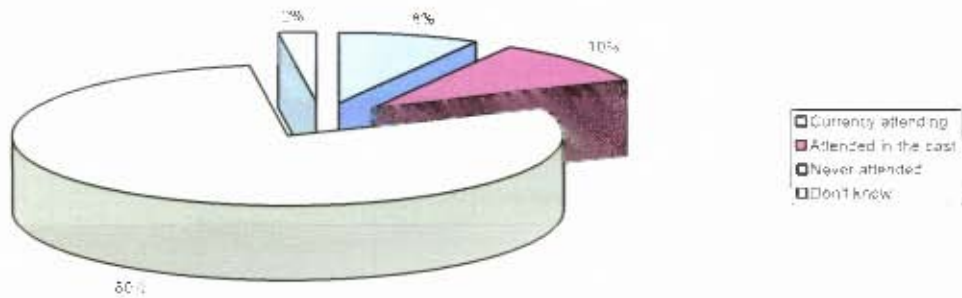
Again this information will help explain the stress and depression depicted in the literature review.

Graph 1: population by age groups

The population is relatively young (mean age is 32 years, table 1), and rather evenly distributed up to the 45-49 year age group, where the numbers decrease. In fact, Graph 1 shows that the majority of respondents are below 40 years of age, with the age group 35-39 having the greatest number of population; followed by those aged 15-19.

Graph 2: adults attending literacy classes

ADULT CLASSES / SCHOOL FOR ADULTS



These outputs highlight the literacy status of participants: 11 (4%) participants attend school to learn how to read and write (table 1). Some participants are very young (just above 15) and are certainly attending school. Unlike this group, a greater number of adults (8%) are attending schools for adult or literacy classes. 80% of the respondents reported that they had never attended adult classes, while 10% of them had attended these classes in the past. In general participants regardless the age stated that they could read (210; 80%) and write (208; 79%) (Table1).

Table 2: descriptive statistics for households

Continuous variables (Households)		Number	Mean (S.D.)	Median	IQR	Range
Number of people in household		264	5.43(2.52)	5	4 – 6	1 – 17
Categorical variables (Households)		Frequency	Percentage	95% confidence Interval		
Household overcrowded (crowding index > 2.5)		62 / 258	24.03	18.95 - 29.72		
Farms with DOP system		22 / 264	8.33	5.30 - 12.34		
Proportion in which wine is reported to be offered to permanent workers*		38 / 264	14.39	10.39 - 19.21		
Wine supply	to men	38 / 264	14.39	10.39 - 19.21		
	to women	11 / 264	4.17	2.10 - 7.33		
	to children	1 / 264	0.38	0.01 - 2.10		
Household items Owned	electricity	255 / 264	96.59	93.63 - 98.43		
	fridge	181 / 264	68.56	62.58 - 74.11		
	Television	206 / 264	78.03	72.54 - 82.87		
	Radio	186 / 264	70.45	64.55 - 75.89		
	Telephone	31 / 264	11.74	8.12 - 16.25		
Normal flush toilets in household		134 / 264	50.76	44.56 - 56.94		
Access to health facilities		86 / 257	33.46	27.72 - 39.59		

* this is the proportion of participants who reported that wine was offered to permanent workers, as opposed to seasonal workers and workers from other farms.

Overcrowding

Although a few participants reported that they lived in houses with as few as 1 or 2 members, some of them were from household with as many as 10 members or more, reaching 17 for a couple of households. 62 (24%) participants reported that they were from household that met overcrowding criteria.

Farms with DOP system

This is based on the percentage of respondents (22; 8%) who said yes DOP is practised on this farm.

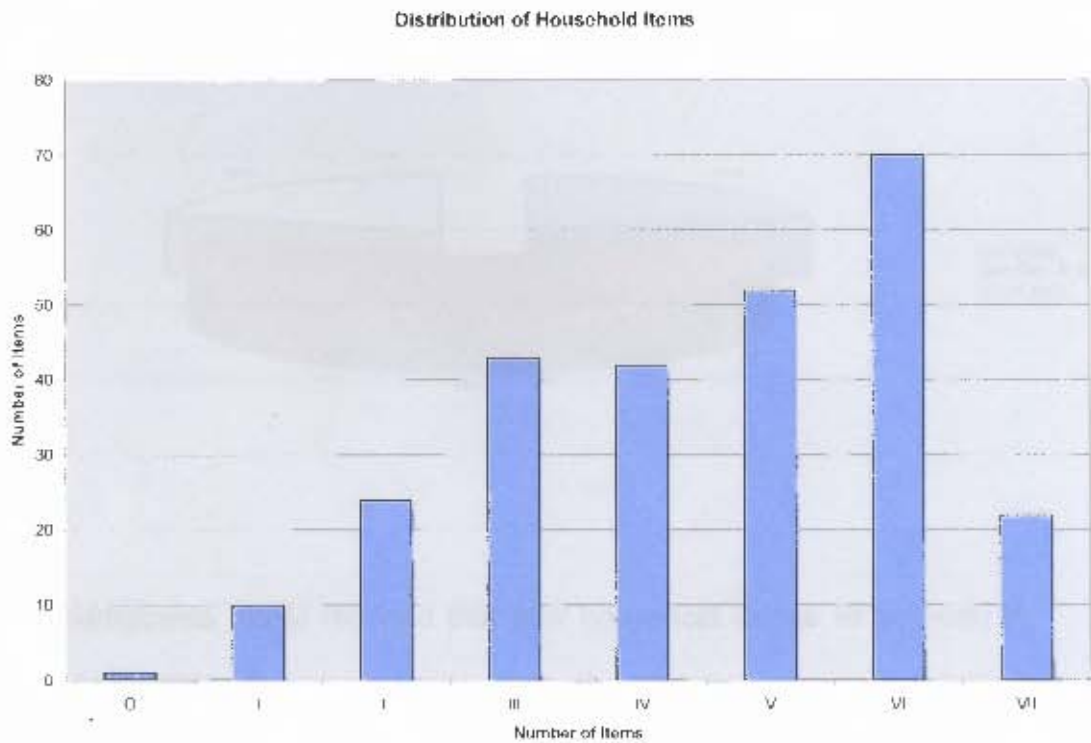
141 participants (54.86 %) reported that they were current drinkers and almost half of the remaining 116 (51; 43.97%) participants are previous drinkers. 38 participants (14.39 %) revealed that wine was offered to workers by farmers. In most cases (38 participants confirmed) wine was offered to permanent farm workers as opposed to workers from other farms and seasonal workers. The same proportion of respondents said that wine was offered to men, while 11 (4.17%) and only 1 (0.38%) argued it was also offered to women and children respectively.

Household items

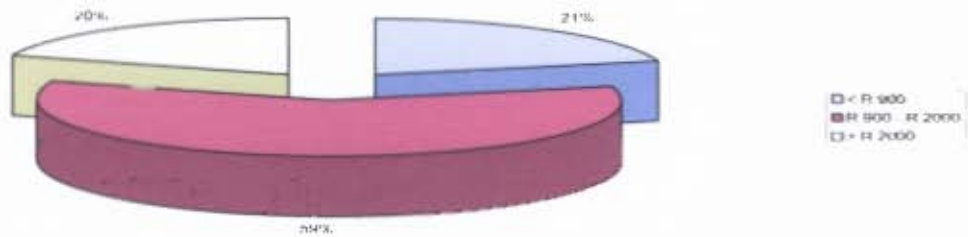
Apart from landline telephone which only 31 participants (31; 11,74%) claim to own, the majority of participants said they had electricity (255; 96.59%), fridge (181; 68.56%), Television (206; 78.03%), Radio (186; 70.45%). However since 1995, the percentage of telephone owners is likely to have increased with the availability of cellphones.

Access to facilities

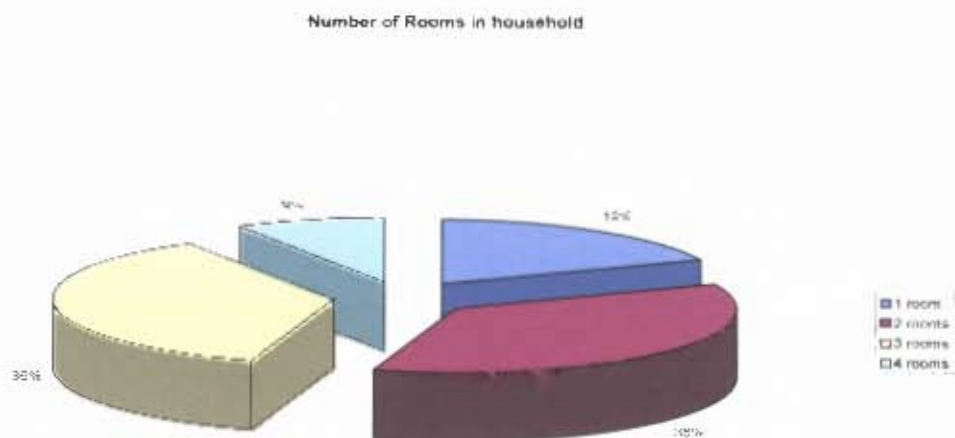
Only 33% (86) of participants reported they have access to health facilities.

Graph 3: household items by numbers of items

0 – 7 represent the number of amenities owned by households and/or farms, e.g. 10 participants live in households with only one of the 7 amenities, 52 participants live in households with 5 of the 7 amenities etc.

Graph 4: household income

Most participants (59%) reported that their household wages lie between R 900 and R 2000. Most importantly, 20% of participants reported that their wages were below R 900.

Graph 5: number of rooms in household, excluding Kitchens and toilets.

48 participants (19%), 93 (36%), 95 (37%) and 22 participants (9%) reported having 1, 2, 3, and 4 rooms respectively. 141 (55%) participants have 2 rooms or less. This may help understand that some households reported being overcrowded.

Table 3: ways in which children were used to provide labour

	Seasonal (264)	Holidays (264)	Weekends (264)	Fulltime (264)	Other (264)
yes	8 (3.03%)	6 (2.27%)	1 (0.38%)	16 (6.06%)	2 (0.76%)
No	19 (7.20%)	20 (7.58%)	39 (14.77%)	10 (3.79%)	22 (8.33%)
Don't know	234 (88.64%)	235 (89.02%)	221 (83.71%)	235 (89.02%)	237 (89.77%)

The question was: 'when are the children used?' most of the participants don't know whether the children were used seasonally (234; 89%), during school holidays (235; 89%), on weekends (221; 84%), or full time (235; 89%). A very few of them know of children being used seasonally, during school holidays, on weekends or full time; 3%, 2%, 0.38%, and 6% respectively. Although this however does not seem to be an accurate information, it could help explain the confusion between child labour and child work.

Table 4: relationships between variables (descriptive proportions)

Continuous variables (Relationships)	Number	Mean (S.D.)	Median	IQR	Range
Age at first pregnancy in current drinkers	27	18.22 (2.59)	18	17 – 19	13 – 25
Age at first pregnancy in not-current drinkers	38	17.44 (2.53)	17	15.5 – 19	12 – 22
Age at first pregnancy amongst women with a history of alcohol consumption	32	17.69 (2.43)	17.5	16 – 19	14 – 22
Age at first pregnancy in women with no history of alcohol consumption	65	19.01 (3.27)	18	17 – 21	13 – 29
Categorical variables (Relationships)	Frequency	Percentage	95% Confidence interval		
Deaths amongst Previous TB*	1 / 6	16.66	0.42 – 64.12		
Trauma					
males	13 / 17	76.47	50.10 – 93.18		
Females	4 / 17	23.53	06.81 – 49.90		
Trauma on farms with DOP system	20 / 22	90.91	70.84 – 98.88		
Males current drinkers	98 / 129	75.96	67.66 – 83.05		
Females current drinkers	43 / 128	33.59	25.49 – 42.47		
Males previous drinkers	18 / 51	35.29	22.43 – 49.93		
Females previous drinkers	33 / 51	64.70	50.07 – 77.57		
Frequency ever pregnant in current drinkers	33 / 42	78.57	63.19 – 89.70		
Frequency ever pregnant in previous drinkers	27 / 32	84.37	67.21 – 94.72		

* This looks at the proportion of previous TB amongst the reported deaths.

Deaths were reportedly not related (associated) with tuberculosis

Amongst those who experienced trauma, there were 76% (13) of males.

Almost all participants who reported that DOP system was still in practice on their farms also reported having experienced trauma

Most of the women reported (33; 78.6%) as current drinkers have been pregnant at least once. Most of the women reported (27; 84%) as previous drinkers have been pregnant at least once.

Currently, males are reported to be drinking more than females.

Women current drinkers tend to have fallen pregnant at a younger age for the first time. Women with a history of alcohol consumption have fallen pregnant for the first time at a younger age, compared to those with no history of alcohol consumption.

4. DISCUSSIONS

4.1 LIMITATIONS

A) Confounding

The associations reported above could be confounded by factors, which had either not been measured or that have not been controlled for. However due to small subsets of positive variables, multivariate analysis models are inappropriate or unstable.

B) Selection bias

While the farms were selected by random procedure, the non-participation rate was 41%. This is a significant bias, and it was not clear to the researchers what the actual reasons for refusal were, nor were the reasons documented. The bias might operate in opposite directions – it could be argued that farms that refused were too busy to lend their workers to the research process, or that these farms were reticent to allow the conditions of their workers to be documented for fear of adverse publicity. The latter argument is the more plausible, because some highly productive farms with good working conditions were very pleased to be studied, some highly productive farms do not have good working conditions, and one would expect those with better conditions to welcome research. As such, the adverse findings would be at the lower end of severity.

It may also be that the farms that refused participation came from a different population of farms in the sampling frame, and had e.g. a large proportion of non-resident workers.

The planned selection of one in five adult farm workers (20%) became a 13.4% sample. As in the selection of farms, the reasons for their non-participation were not clear, nor were they documented. Consideration of the direction of bias here is more difficult, than the non-participation of farms, as more factors are involved, e.g. age, gender, employment status, alcohol status, etc. The need for privacy, given that the individual interviews followed a few days after the household survey, might have also played a role.

C) Information bias

Most of the variables collected were based on questionnaire, with no objective validation. A number of sensitive questions were asked during the interviews, and it is likely that respondents could have sanitised their answers, especially when dealing with personal habits like drinking. Had such bias operated, the resultant variable values would be at the lower end of severity. It is unlikely, however, to have been significant, as the interviewers were drawn from the local community, they were all conversant in Afrikaans, and had sufficient time to develop depth and mutual understanding in their interviews.

The process of entering, cleaning and dealing with missing data took far longer than originally intended. The process of data entry and analysis was poorly coordinated and articulated between the researchers. The data were originally entered in a number of separate files, and no unique number had

been entered for each individual. Unique identifiers had to be reconstructed, the process was time-consuming, and produced 3 large but still separate files, making certain cross-tabulations between files impossible without re-entering data. This process has led to a loss of data-processing ability.

The method used to investigate child labour is rather subjective, hence there may have been underreporting.

Similarly, data on the ability to read and write were collected in a very subjective way: participants were asked whether they could read or write, and did not have to demonstrate that they could.

Despite these limitations, the numbers of farms, households and individuals are large, and certain valuable insights into this community have emerged. These will be discussed below.

4.2 DISCUSSION OF RESULTS

A) Age and gender:

The findings show a relatively young population with a mean age of 32. This is understandable, as farm workers are expected to deliver a work which demands strong physical efforts, and younger workers are physically more suited to this work. As noted in the literature review, farm workers deal with hard physical labour for long periods of time that are often sources of anxiety and stress (4). This is a kind of work that people of a certain age would not be able to do. The distribution of the population by age-groups shows a decrease of this population from the 45-49 age groups, thus confirming the need of physical work capacity (graph 1). It would be interesting to investigate the

treatment faced by workers when they reach the age of “retirement”, as we know from literature that these workers have only recently been granted the same rights as other workers (3)

B) Education / Children

Majority of participants reported that they could read (80) and write (79). The majority of the participants (80%) never attended adult schools to learn to read and write, while 10% attended those classes in the past. If we subtract the 4% (11 participants) attending school, it appears that at least 75% of the participants never attended any type of school to learn how to read and write. The 4% of participants attending schools are likely to be only those participants young enough to undergo education. The total proportion of those who reported to be attending schools (8% for adult schools and 4% of participants attending school) and those who attended adult classes in the past (10%) shows how subjectively the study found participants who could read and write. participants were asked whether they could read or write. This leaves us a window to still argue that learning or educational facilities were hardly accessible for farm workers although people may develop the ability to perform minimal writing and reading skills.

Education could also be seen as a tool, which may help to overcome the problem of child labour that in this study was reported to be in practice in a proportion of 11%. In farms, the tendency was rather at using children to help with works and other work-related tasks. Children were allowed to work on farms as early as from 9 years of age as revealed by this study.

It is important to consider the definition of UNICEF as mentioned above. However we are also aware that underreporting may have affected the actual results. These two limitations with opposite directions put together may indicate that our results are true and reliable features. In any case, we strongly support the idea that child labour should be condemned and not tolerated under any circumstances. But these were not the only ways in which children were denied their rights on farms. They were also victims of their parents' working conditions. Farm workers, not only were denied access to health facilities, but most of them would not take the risk of having a half-day off to solve their health problems as they would lose wages for being absent. This has a serious repercussion on children who may have developmental impairment by missing immunization campaigns for example.

C) Health conditions

The findings show that most respondents have experienced some kind of trauma, of whom nearly 30% believe that the cases of disabilities were the consequences of a trauma. It would have been surprising that this be otherwise in an environment which causes workers to be exposed to factors leading to accidents, risky behaviour and related psychological trauma. The challenge here is that people may live in those conditions for years not being aware any way to seek improvement.

Smoking and alcohol consumption among both genders was high. 64% of adults were found to be smokers. Current drinkers numbered 55% of adults and most of the remaining non current drinkers happen to have a history of

alcohol consumption. Only one quarter of the participants reported that neither current nor previous drinkers/smokers (Table1). Although the exposures were obvious, the sentinel conditions of epilepsy, cancer, heart disease, asthma, etc. were present in very small percentages. Previous TB (9.13%), headache and hypertension (10.98) were rather present in significant proportions. All conditions reflect the bad conditions in which farm workers live and work. Moreover, some of the conditions were obviously aggravated by workers' drinking habits. Crystal argues that "in Western Cape, it is estimated that alcohol abuse accounts for up to 60% of violent incidences resulting in trauma" (34)

The results show a common finding of women being more overweight than men. However some of the figures seem highly impossible (i.e. BMI = 60). We believe this is due to an inaccuracy of the data (or a poor data handling), regarding the measured weights of some participants.

D) Wages and lifestyles

The few changes which were starting to operate could of course not appear as a complete revolution. Abnormalities like very low wages paid to workers could still be seen. 54 participants reported that the wages were lower than R 900, with some of them earning as low as R 300 per month. This is an indication of very low wages although it shows some improvement compared to the 1995 national household health survey mentioned in the literature review and which found a proportion of more than two thirds of farm workers' earning less than R900 per month. (20)

They were very few rooms in most of the households. This resulted in the overcrowding of 62 of them (24%), making the living conditions even more difficult with higher chances of developing diseases, which they may not be cared for. Only 33% of the participants of the study reportedly had access to health services.

Cigarette smoking and alcohol consumption were a common practice. As indicated in the findings most participants were current and previous drinkers and this is conformed by the literature. Alcohol consumption was nearly like a "tradition or custom" in South African where the DOP system was still in practice according to the literature as well as the findings of this study. There is indeed a tough combat to be undertaken here, which will certainly consist of convincing the farm workers themselves most of whom have finally "accepted" the situation as normal. This is certainly a result of the psychological threat they have been exposed to, for many years.

CAGE scores of >1 were found to be high in this survey. However it was thought that the score was invalid because of over-interpretation of the variables making up the score, especially the question as to ever feeling guilty about the amount they drank.

The study found that 8% of farms are still practising the DOP system, which is almost equal to statement found in one previous study done in Stellenbosch (9%). The figure was certainly much higher before the DOP System was declared illegal in South Africa.

Besides, life has not really improved on farms, as found the literature. Farmers who find it difficult to comply with the abolition of the DOP system would find ways in which to keep the gap unchanged. Substance abuse and

other destructive lifestyles may be declining but they are still of concern for those willing to help. Most people who used to be exposed to the DOP system are likely to be alcohol addicted, making it a new challenge to face.

Farmers have not yet abandoned the idea of forcing their workers to remain dependent to them. The system was organised in such a way that farm owners could easily exploit workers, as well as they could get rid of them illegally, as Crystal Prince puts it: "in many instances wage deductions are also made where electricity, sanitation and water services are provided, leading to a further feeling of disempowerment and dependency among farm workers" (34). Another way of keeping them disempowered was to create food insecurity by inflating the prices of basic goods, which in the end would also result in wages deductions. In these conditions it is almost impossible for the workers not only to claim any rights but also to improve their living conditions. They could not leave the farms either, unless they were ready to face another survival challenges involving unemployment, homelessness etc. However farmers were able to evict workers from the farms without any legal considerations. They would rather "create conditions that cause farm residents/workers to leave 'voluntarily' "(34)

Women current drinkers tend to have fallen pregnant at a younger age for the first time (table 4). Alcohol consumption and abuse are known to prevent people from making healthy choices. One of the direct consequences of heavy alcohol consumption is adopting risky sexual behaviour as has been shown here that drinking is associated with earlier pregnancy. This not only leads to the classic problem of teenage pregnancy and Sexually Transmitted

Infections (STIs) but also to an increasing chance for the child of being affected with Foetal Alcohol Syndrome.

Another indicator of poverty is that most women, according to the findings have been pregnant at least once and the age of first pregnancy could be as low as 12 years (table 1). This can be seen as a consequence not only of the heavy drinking but also the overcrowding and other poor living conditions.

However, It is understandable that farms in Stellenbosch, which is an upmarket farming area be in possession of basic living items, although this can be challenged by the fact that the score was arbitrary. Possibly a better way of constructing this would have been to give each item a monetary value.

5. CONCLUSION

This study was a community survey of farm workers in Stellenbosch, with a focus on the working and living conditions and related health effects. As stated in the literature review and demonstrated in the findings, the working conditions of farm workers were never made easier by their employers; nor were their living conditions. In effect the results of this study are a clear indication that life on farms has been unbearable from generation to generations: the reason for this statement is the period at which the data of this study were collected. South Africa was already experiencing a democratic expansion in 1998 and ill treatments like the DOP system were now illegal, yet a number of farmers were still practising it. Heavy drinking habits, coupled with overcrowding amongst a community with a very low literacy rate can only lead to ill informed lifestyle choices, which in turn will cause the concerned population to be exposed to diseases and/or conditions of poverty.

This is a definite threat to development and should therefore be considered a challenge to policy makers and other decision makers. Key role should be played by government, as the question here is nothing but human rights recognition and poverty alleviation. NGOs would then come into the picture as a complementary contribution.

6. RECOMMENDATIONS

▶ Initiatives like DOPstop association should be encouraged and multiplied as health conditions of farm workers are usually related to the conditions in which they live. In our study some of these conditions were highlighted and shown to be directly linked to the hard labour delivered by farm workers: trauma, hypertension, headache etc...

▶ Children should be given the opportunity to study so as to stand equal chances of self fulfilment. Education, at least the very poor such as farm workers and their peer rural communities should be made free or subsidised by government. Parent should then be encouraged to send their children to school.

▶ Appeal for a political commitment regarding the life on farms as a priority while developing policies on poverty alleviation

▶ In fact the 4 areas of interest of the DOPstop association should be regarded as focus areas to combat dangerous and deleterious living conditions on farms. These include:

- Education and training for farm residents and management with a view to primary, secondary (early detection) and tertiary (support groups) prevention, as well as training for health service providers and other caregivers. Such training aims to learn from other experiences in alcohol prevention, particularly with marginalised groups in other countries with similar experiences to farm workers in South Africa.

- *Facilitating provision of clinical and counselling services for alcohol-addicted individuals, including referrals for detoxification and in- and out-patient treatment. Preventive work with farm workers will be severely undermined if clinical services are not able to support the identification, referral, management and follow up of individual workers with drinking difficulties.*

- *Research, both quantitative and qualitative (using anthropologic and ethnographic approaches), to inform interventions and provide baseline indicators for evaluation. Research, in the form of a mobile clinic-based survey, was also used to provide empirical data to back early lobbying and awareness-raising activities, which was critical for credibility of attempts to place the issue on agendas of decision makers at the outset of the project. These data have only subsequently been published in the scientific literature.*

- *Advocacy to promote healthy policies and practices, raise community awareness and mobilise support. Use of the media has been relatively successful in raising public awareness and interest. (16)*

APPENDIX

A. Ethical approval certificate

UNIVERSITY OF CAPE TOWN

LOGO

Research Ethics Committee
Faculty of Medicine
Anzio Road, Observatory, 7925
Queries: Martha Jacobs
Tel: (021) 406-6492 Fax: (406-6390)
Email: Martha@medicine.uct.ac.za

8 June, 1998

REC REF NO: 085/98

Prof L London
Community Health

Dear Prof London

RE: STRATEGIES TO ADDRESS THE "DOP" SYSTEM ON FARMS IN THE WESTERN CAPE

I have pleasure in informing you that the above study has been formally approved by the research Ethics Committee on 29 May 1998.

Included is a list of Research Ethics Committee Members who have formally approved your protocol.

Please quote the above reference number in all correspondence.

Yours sincerely,

Signature

PROFESSOR FOLB
CHAIR: RESEARCH ETHICS COMMITTEE

Queries: Martha Jacobs
Research Ethics Committee
Room 212 Werner and Beit
UCT Medical School
Anzio Road, Observatory, 7925
Tel: (021) 406-6492 Fax: (406-6390)
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B. Children' Rights

The convention on the rights of the child, adopted by the UN in 1989 spells out the basic human rights to which children everywhere are entitled:

- the right to survival
- the right to the development of their full physical and mental potential
- the right to protection from influences that are harmful to their development and,
- the right to participation in family, cultural and social life

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