

CHAPTER ONE

1. INTRODUCTION & LITERATURE REVIEW

HIV/AIDS is a bleak reality in South Africa and has engaged responses to it as diverse as the reach of its effect. Scenario planners have warned of its scourge, activists have responded to its destruction and scientists have measured its devastation. Despite this, various individuals and groups in the South African context have responded very differently or, even, not responded at all. In the mean time, people continue to get sick and die. Ultimately this affects individuals, families, communities¹ and society at large and thus, at this point in time, no-one remains unaffected.

Evidence in a recent study by public health researchers Stevens, Dickinson, Weiner and Mapolisa suggests that families are particularly hard-hit¹, especially when the most economically active member of the family becomes HIV-positive². Almost two-thirds of households studied experienced a drop in income as a result of having to cope with HIV/AIDS and almost half of the households studied reported having insufficient food at times.¹ Thus it is evident that the socio-economic impact of HIV/AIDS has fuelled a vicious cycle of poverty and the disease.¹

While varied responses have occurred across the South African society, one particular group's response is of interest, namely that of the Business and Industrial sector. The occupational setting is often an ideal avenue to use in terms of HIV/AIDS prevention,

education and care activities² because many of the major companies are at the cutting edge of communication, demand creation and distribution of goods and services and these are the very skills needed to help combat the spread of HIV/AIDS.³ With this being the case the question needs to be asked, what have South African businesses done in the wake of HIV/AIDS?

1.1. The Corporate sector and HIV/AIDS

As the impact of HIV/AIDS on businesses has become more visible, business leaders worldwide have increasingly seen the advantages of creating HIV/AIDS programmes for their workplaces – and some even beyond the workplace, to their surrounding communities.⁴ The impact of HIV/AIDS in the corporate sector has been described as effecting *business* and the *workforce*. The business impact includes the increased costs of doing business, reduced productivity and lower overall demand for goods and services.⁴ The workforce impact involves the loss of experienced personnel, increased absenteeism, increased recruitment and training costs, increased labour turnover, lower productivity of new recruits, and increased health care costs.⁴ Along with this are the more intangible effects on the workforce such as decreased morale, increased fear of contracting the disease, and increased marginalisation of HIV-positive employees.

Despite this, in South Africa the general business sector response to HIV and AIDS appears to have been slow⁵ and small and medium enterprises seem to have been particularly non-responsive thus far, reporting few substantive interventions³.

Large businesses, though, (particularly the mining sector) have led the way in setting up workplace responses to the HIV/AIDS crisis.⁵ In 2001 the Chamber of Mines Wage Agreement was signed in partnership with trade unions to develop and maintain programmes to minimise the impact of HIV/AIDS on all its stakeholders.⁶ Following this, HIV management programmes have been implemented across the mining sector. Simultaneously HIV/AIDS management programmes have also been implemented in many other large private sector companies⁷ such as Eskom, Ford Motor Company, Ilovo Sugar and Daimler Chrysler⁵. However, evidence about the successes companies have had in care and treatment programmes appears to be fragmented and anecdotal.⁷

The Government has put guidelines in place to assist companies with HIV/AIDS management. This includes the ‘Code of Good Practice on Key Aspects of HIV/AIDS and Employment’ which recommends that ‘every workplace should develop a workplace HIV/AIDS programme aimed at *preventing* new infections, providing *care* and *support* for employees who are infected or affected’⁸. The accompanying ‘HIV/AIDS Technical Assistance Guidelines’ (TAG) provides a framework for managing HIV/AIDS in the workplace and states that “effective management of HIV/AIDS in the workplace requires an integrated strategy” that includes:¹⁰

- an understanding and assessment of the impact of HIV/AIDS on the workplace; and
- long and short term measures to deal with and reduce this impact, including:
 - An HIV/AIDS policy for the workplace;
 - A prevention programme;

- A wellness programme; and
- Management strategies to deal with the direct and indirect costs of HIV/AIDS.

George and Whiteside go into more detail and state that a comprehensive workplace HIV/AIDS management programme should comprise of the following components, which relate to the abovementioned prevention, care and support activities³:

- raising awareness activities (displays, pamphlets, AIDS week, etc),
- peer education,
- condom promotion and distribution,
- Voluntary Counselling and Testing (VCT),
- management of sexually transmitted infections (STIs),
- an infection control programme, and
- a wellness programme ('positive living' elements and medical management).

Many of the large employers have also made antiretroviral treatment (ART) available to HIV-positive employees⁷ as part of a treatment approach².

While it is necessary to identify the various components of HIV/AIDS management in the workplace (particularly for monitoring and evaluation purposes), the separation, at some levels, is artificial as each of the component activities are linked to each other. For example, peer education will more than likely promote VCT, which in turn causes those who find out they are HIV-positive to join the wellness programme. Thus, prevention

activities and a wellness programme particularly form part of a continuum of prevention, care¹⁰ and support activities and are thus integral to each other.

1.2. Wellness programmes

In terms of *wellness programmes* specifically, not much literature could be found that describes HIV/AIDS workplace wellness programmes. The TAG mentions briefly what a wellness programme should consist of⁹:

- 1) ensuring access to affordable treatment for opportunistic infections;
- 2) ensuring access to affordable ART;
- 3) supporting HIV-positive employees with a receptive and accepting work environment and access to counselling;
- 4) supporting HIV-positive employees who can no longer work with home-visits and home-based care.

The Code recognises, though, that the nature and extent of a workplace programme will be guided by the needs and capacity of each individual workplace.¹⁰

In a recent study about HIV treatment in large South African companies performed by Conelly and Rosen⁷, it was found that overall enrolment levels of HIV-positive employees into various companies' treatment or wellness programmes were low. They estimated that less than a third of those with HIV are aware of their status and enrolled into a HIV disease management programme, while about 4 percent of HIV-positive employees are currently on ART. They also assumed that the overall low uptake of treatment services is caused by the stigma of HIV/AIDS, lack of trust among employees

that their employer will not find out their status, and the newness of the programmes.⁷

Connelly and Rosen further state that the commitment of companies and managers to implement programmes, approaches to recruiting employees into them, and the quality of the programmes themselves need to be further examined.⁷

Ultimately, the purpose of the wellness programme is to contribute to the health and well-being of HIV-positive employees so that they can continue to work productively for as long as possible.

1.3. The concepts of health and well-being

Literature relating directly or indirectly to health and well-being in the workplace is vast but surprisingly disjointed and unfocused.¹¹ Added to this is the reality that, even at its most general, health is a difficult construct to define.¹¹ Most workplace-related literature addresses health and well-being from physical, emotional, psychological and mental perspectives.¹¹ This fits in well with the gold-standard World Health Organization (WHO) definition, which presents health as “a state of complete *physical, mental, and social well-being* and not merely the absence of disease or infirmity.”¹² In more recent years, this statement has been modified to include “the ability to lead a socially and economically productive life.”¹³ Thus, there is a focus on holistic well-being (physical, mental and social) along with work (which enables one to lead an economically productive life). Thus, while health is a complex concept and can be defined in a narrow way to indicate bodily or mental functioning it can also be more broadly defined as personal fulfilment, an adaptive response, performing to the best of one’s abilities,

flexibility in encountering the challenges of life and integrated functioning.¹⁴ Despite these being abstract outcomes and difficult to measure, work-based health-related programmes should facilitate these goals.

In terms of health being physical, mental and social *well-being*, well-being does not appear to be officially defined but is described as an individual's perception of their condition.¹⁵ Research performed by Wilcock determined some of the general words associated with well-being¹⁵ which include:

- happiness, peace, confidence, energy, belonging, fulfilment, loving, control, health, freedom, relationships.

The following diagram (Fig 1.1) explains the main aspects of well-being.

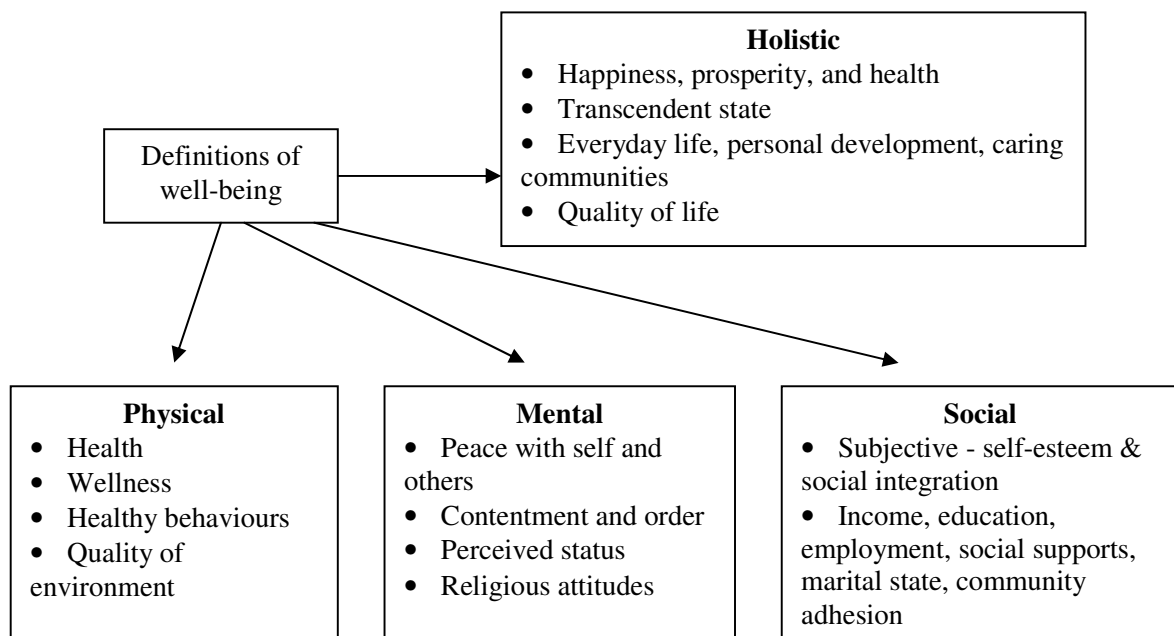


Figure 1.1.: Wilcock's definitions of well-being¹⁵

Thus, physical well-being is seen to include all aspects affecting the physical condition of an HIV-positive employee. Mental well-being is seen to be synonymous with ‘emotional’ and ‘psychological’ well-being. Social well-being concerns contextual aspects affecting the employee including issues such as poverty, marital state and stigmatisation.

1.4. Nutrition and HIV/AIDS

It has become increasingly accepted that good nutrition plays a vital role in the management of HIV/AIDS¹⁶. Thus, various companies running HIV/AIDS management programmes in the workplace in South Africa are also following the mindset of providing nutritional supplementation to employees who are HIV-positive, according to Epicentre – a non-government organisation (NGO) that manages workplace HIV/AIDS programmes.

With regard to the use of nutritional supplements in HIV/AIDS workplace wellness programmes, there appears to be various reasons for this approach. Evidence shows that micronutrient deficiencies can profoundly affect immunity^{17,18} and that micronutrient deficiencies are widely seen in HIV/AIDS, even in asymptomatic patients¹⁷. Studies also indicate that multiple nutritional abnormalities occur relatively early in the course of HIV infection.¹⁶

Direct relationships have been found between deficiencies of specific nutrients, such as vitamins A and B12, and a decline in CD4 counts. Deficiencies also appear to affect progression to AIDS (vitamin A, B12, zinc). Correction of deficiencies has shown to decrease symptoms and disease manifestation (AIDS dementia complex and B12;

diarrhoea, weight loss and zinc), and certain micronutrients, such as vitamin E and zinc, have demonstrated a direct anti-viral effect in vitro.^{16,17}

Furthermore, in a study of micronutrient profiles in HIV-1-infected heterosexual adults it was seen that 59% of HIV-positive patients had low concentrations of magnesium, compared with 9% of controls ($p < 0.0001$).¹⁸ These low concentrations were unrelated to the stage of disease. The low magnesium concentrations may be particularly relevant in terms of exacerbating HIV-related symptoms of fatigue, lethargy, and impaired mentation.¹⁸ Also, participants who took vitamin supplements consistently had higher concentrations of antioxidants, across HIV-infection status and disease stage strata ($p = 0.0006$).¹⁸

Another reason for nutritional deficiency in HIV is *malabsorption* of nutrients. Weight loss, anorexia, metabolic disorder and malabsorption are leading symptoms of HIV infection¹⁹ and the cause of HIV-associated wasting²⁰. Recent data show wasting as being intrinsically linked to immunodysregulation and enteropathy¹⁹ and the extent of wasting is related to the length of survival²¹. Malabsorption and diarrhoea may result from gastrointestinal tract opportunistic infections or from the direct effects of HIV on the gastrointestinal tract.²⁰ Diarrhoea and weight loss are found in more than 50% of patients with AIDS and in some patients the symptoms can be very severe, leading to death even in the absence of opportunistic infections.²² Rump et al found that in 30% of patients studied, enteric pathogens could not be identified, and approximately only half of the identifiable aetiologic agents of diarrhoea in patients infected with HIV were treatable

with antibiotics.²² Thus, nutritional deficiency is shown as a problem in HIV/AIDS and has to do with insufficient intake of nutrients as well as the malabsorption of nutrients.

Where CD4 counts are low, it has been shown in a Thai study that a cheap multivitamin and mineral supplement can enhance survival of HIV-positive people with less than 200 CD4 cells and who are unable to access anti-retroviral therapy.²³ Although universal access to ART is the long-term goal of South Africa's national HIV/AIDS programme, in 2005 less than 10% of medically eligible patients were receiving ART in the public and private sectors.⁷ Although many employers in South Africa will rely on the public sector to take care of HIV-positive workers²⁴, it cannot be assumed that employees will have ready access to treatment at public clinics for some years to come⁷.

1.5. Description of the Company's workplace programme

A large multi-national packaging company was investigated in this study (for confidentiality reasons it will be referred to as 'the Company'). The Company has about 80 factories in South Africa (SA). They have an established HIV/AIDS wellness programme, initially managed by Epicentre but now managed internally.

The Company's approach to managing HIV/AIDS in the workplace includes activities mentioned early such as raising-awareness activities (e.g. posters in the workplace and 'Soul City' booklets), peer education, condom promotion and distribution, VCT drives,

treatment of STIs and other HIV-related conditions, and an HIVⁱ wellness programme.

Exactly how the activities are executed depends on the occupational health nursing practitioner (OHNP) at a particular factory. Generally though, VCT drives are held where employees are counselled and tested. If the screening test shows that they are positive then blood is drawn and sent for an Elisa test to confirm the positive result. The employee is then encouraged to join the Company's HIV wellness programme in order to assist the employee in managing the progression of the disease.

The HIV wellness programme includes the treatment of HIV/AIDS-related problems (including the treatment of STIs), and antibiotics and other medication (such as throat lozenges, skin creams, pain medication etc.) are provided when necessary. These are prescribed by the OHNP or by the occupational health doctor who performs annual medical checkups on all employees.

All HIV-positive employees who join the wellness programme are given a basic nutritional supplement, usually either 'Mixture of Life' (MOL) – made up of a combination of 8 vitamins, 3 minerals and 3 specialised nutrients (including spirulina, and African potato) - or 'Sterolandia' (SL) - a whole food supplement made up of mixed vegetable and cereal sprouts in powder form and Sutherlandia Microphylla. The supplement given depends on what the OHNP at a particular factory decides to purchase and thus other supplement products have also been given, such as a general multivitamin or food-based supplements like 'SuperPap' (SP), 'E-pap', 'Maizoya' and 'PowerMeal'. If

ⁱ The Company's wellness programme includes HIV and AIDS management. For convenience, 'HIV/AIDS wellness programme' will be conflated to 'HIV wellness programme' but will imply the management of HIV and AIDS.

an employee's CD4 count falls below 200/ml or if they become symptomatic, they are referred for antiretroviral therapy, either through the Company's medical scheme or, if the employee does not belong to the medical scheme, through the public health care system. Those belonging to a medical scheme are referred confidentially to the 'Aid for AIDS'ⁱⁱ (AfA) programme for ART and HIV-related treatment. AfA also apparently places their patients on the multi-nutrient product 'Centrum'.

In terms of the 'positive living' elements of the HIV wellness programme, the OHNPs provide counselling and advice should the need arise. This contributes to emotional support as the OHNPs are often the only people who know that a particular person is HIV-positive.

The aim of this study was to consider the impact of the HIV wellness programme within the Company's factories. **Note:** the term 'impact' in the title of this study is understood to mean the 'benefit' or 'effect' of the wellness programme.

1.5.1. Research question

The main question asked was what benefit or effect does the Company's workplace wellness programme have on its HIV-positive employees in terms of their well-being?

ⁱⁱ Aid for AIDS is an independent disease management programme contracted into certain medical schemes which allows for the confidential treatment of HIV-positive scheme members without the knowledge of the employer, the medical scheme or the administrator.

1.5.2. Study Objectives

a) To describe the effect of the wellness programme as measured by differences in CD4 counts and percentages, weight, episodes of diarrhoea and sick leave taken between the beginning and end scores of the study time period.

b) To explore the perceptions and views of the OHNPs regarding the benefit of the wellness programme on the general sense of health and well-being of the HIV-positive employees.

1.5.3. Justification of the study

This research is of value because it assists in gaining information about how companies are dealing with HIV/AIDS in the workplace. It also gives insight into aspects affecting the well-being of HIV-positive employees as well as issues faced by OHNPs. It is hoped that the information gained will lead to improvements in this Company's programme where necessary, and also to further, more specific research in the area of HIV/AIDS and the workplace.

CHAPTER TWO

2. MATERIALS AND METHODS

In this chapter the study method and design are explained. A description of the research setting and the context is presented, followed by the sampling strategy, data collection procedure, data reliability and data analysis. Ethical aspects are also mentioned.

2.1. Study method and design

The study was a retrospective record review which evaluated a before-and-after intervention (i.e. the Company's HIV wellness programme). The design was quasi-experimental and mainly descriptive. Both qualitative and quantitative methods were used.

Two main methods of measurement were used to collect data: Firstly, employee records were accessed to gain quantitative data on CD4 counts and percentages, weight gain or loss, clinical signs and symptoms (such as episodes of diarrhoea), and absenteeism data.

Secondly, semi-structured interviews were performed with OHNPs to gain information about the effect of the wellness programme on the HIV-positive employees' state of health and well-being.

2.2. Study population and sample

The Company has approximately 80 factories across South Africa, employing about 11500 workers. Most of the Company's factories are in three main regions. There are 30 factories in the Gauteng region with about 5000 employees, 17 factories in the KwaZulu Natal (KZN) region with about 3000 employees, and 15 factories in the Western Cape region with about 3000 employees.

This study was conducted in the factories in the Gauteng region. Factories in the Western Cape and KZN regions were not included due to cost constraints. 14 OHNPs manage the occupational health clinics of the Gauteng factories. The sample is thus a *convenience* sample in that costs needed to be considered and the candidates were chosen on the basis of accessibility and availability and not randomly. It is also a *purposive* sample in that the Company's Gauteng OHNPs were presumed to be an average sample of the Company's OHNPs and that they are most knowledgeable regarding how the wellness programme functions within their factories. In considering all the factories in the country, there would be some similarities but also some differences between the three regions. Similarities would include the *types* of factories (e.g. paper, plastic or bottling factories) whereas differences would include aspects like employee demographics (i.e. more rural employees in KZN as opposed to Gauteng). However, the sample is small and thus not generalisable to other areas.

2.2.1. Occupational health nurses

Of the 14 OHNPs in Gauteng, eight were interviewed - six telephonically and two face-to-face. It was hoped to contact all 14 of them, but in the end only eight could be contacted. One sister was never available despite several attempts to contact her and another was a temporary sister who could not give detailed information. The remaining four sisters apparently did not have any employees on the HIV wellness programme. The criterion for OHNPs to be included in the sample was that they have HIV-positive employees who are participating in the wellness programme. The Company's national HIV/AIDS project leaderⁱⁱⁱ was also interviewed telephonically in order to obtain her opinions about the wellness programme.

Table 2.1.: OHNP sample information

Sample Framework	Sample (meet inclusion criterion)	Data obtained	Non-responses	Response rate
14 Gauteng OHNPs + Project leader = 15 OHNPs	10 Gauteng OHNPs + Project leader = 11 OHNPs	9 OHNPs	2 OHPNs	82%

2.2.2. HIV-positive employees

The eight OHNPs were informed about the study and that permission had been granted to perform the study from the Company's management as well as from the Wits Human Research Ethics Committee. All agreed to participate by being interviewed and by assisting the researcher to acquire data about the CD4 counts, CD4 percentages and clinical signs and symptoms of the employees who were part of the wellness programme

ⁱⁱⁱ She is also an OHNP and is a purposive inclusion into the study sample due to her relevance to the study.

and who were willing to have their records reviewed. The OHNPs obtained informed consent from employees and no data was conveyed to the researcher without the informed consent of the employees. Six out of the eight OHNPs said they preferred to convey the data in an electronic table format while two OHNPs preferred the researcher to visit their clinics to review the files there.

Employees had to fulfil the following inclusion criteria to be accepted in the study:

- HIV-positive workers in Gauteng who are part of the company's HIV/AIDS wellness programme and who have thus been through VCT,
- who had been on the wellness programme for a minimum of three months,
- who had thus taken a nutritional supplement for a minimum of three months,
- both male and female,
- of adult age i.e. older than 18,
- at any of the stages of HIV,
- who were not receiving ART during the study period, and
- females who were not pregnant or breastfeeding during the study period.

Not all employees agreed to have their records reviewed and, in the end, data was obtained from 56 employees from ten different factories (some OHNPs manage more than one factory's clinic). It was estimated that if all the Gauteng employees on the wellness programme had given consent and if all the data could be used there would have been between 70 and 80 employees in the sample. The study sample was thus made up of HIV-positive employees in Gauteng who fitted the inclusion criteria and who had taken a

nutritional supplement for at least three months between the end of 2003 and January 2006. Most employees studied had taken a nutritional supplement for at least six months. Of the 56 responses obtained, data for 15 employees from one particular factory were incomplete and thus could not be used. Furthermore, four employees started taking ART during the study period and were excluded from the study sample. Another employee had only been on the wellness programme for two months and was also excluded. The final sample was thus 36 employees.

Table 2.2.: HIV-positive employee sample information

Sample Framework	Sample	Data obtained	Response Rate
Gauteng HIV+ employees on wellness programme (70-80 employees)	56 HIV+ employees on wellness programme	36 employees	64%

2.3. Measurement

2.3.1. Quantitative measurement

The data reviewed was data collected between the end of 2003 and January 2006. Most employees had been on the wellness programme for at least six months to a year.

The following measurement methods were included:

a) CD4 counts and percentages: CD4 counts and CD4 percentages (i.e. the percentage of lymphocytes that are CD4 cells) are taken when an employee enters the HIV wellness programme. The tests are meant to be repeated every 4 months or whenever possible.

This did not appear to be a given due to differences in procedures at the various factories.

Thus the first CD4 count and percentage taken when entering the programme and the last (i.e. most recent) CD4 count and percentage that were available on record were analysed.

b) A Wellness Management Form: The OHNPs are meant to administer a Wellness Management Form to employees during their first visit when joining the wellness programme. The form is ideally repeated monthly at follow-up visits. However, the record keeping systems varied between factories and the Wellness Management Form was not used at all the factories. Nonetheless, the indicators that were of interest in this study (e.g. weight measurements and episodes of diarrhoea) were mostly available, although not in a consistent format nor in regular time intervals.

c) Weight measurements: Weight measurements are performed at least once a year during annual checkups by the occupational health doctor. This information was also accessed from the employees' record files and analysed.

d) Records of absenteeism: Some employees' files indicated days taken for sick leave, however this data was not consistently available due to a change in the absenteeism record-keeping system within the Company making it difficult to collect and analyse absenteeism data.

Thus, quantitative measurement occurred in the following ways:

- Differences in the CD4 counts and percentages of the employees investigated between the beginning- and end-scores of the study time period.

- Differences in weight measurements of employees investigated between the beginning- and end-scores of the study time period.
- Differences in episodes of diarrhoea reported by the employees to the OHNPs investigated between the beginning and the end of the study.
- Number of sick days taken by the employees.

2.3.2. Qualitative measurement

Qualitative data were acquired by means of face-to-face or telephonic semi-structured interviews with the OHNPs (see Appendix A). Information obtained from the OHNPs included how the HIV wellness programme runs at their particular factory, what the employees on the programme are saying about how they feel, what the OHNPs' perceptions about the wellness programme are, along with their opinions regarding nutritional supplementation. Interviews were conducted in either English or Afrikaans depending on the preference of the OHNPs.

2.4. Analysis

2.4.1. Quantitative analysis

Analysis of data was primarily descriptive in nature although some inferential statistics were used. Data was summarised by using frequencies and percentages for categorical variables and means and standard deviations for the continuous variables for the characteristics under study. Testing for significant differences was employed to the changes in the mean scores over the observation period. For continuous measurements,

tests like the student's paired t-test and Wilcoxon's matched paired signed ranks test were employed. For discrete measurements, McNemar's test was used. The level of significance was 0.05.

2.4.2. Qualitative analysis

The interviews, except for three, were taped and transcribed verbatim to assist analysis. Where interviews were not able to be taped, detailed notes were made. Thematic analysis of qualitative data was carried out.²⁵ Data was read and re-read as a means of familiarisation with the data. Key issues, concepts and themes were identified based on issues and questions derived from the aims and objectives of the study as well as issues raised by the respondents themselves.²⁵ Identification and indexing of themes and categories were performed by using techniques such as colour-coding. Data was then further rearranged to find associations and provide explanations of the findings.²⁵

Wilcock's definitions of well-being¹⁵ (see Fig 1.1. on page 7) were applied to assist in finding associations to the concept of well-being in the interview texts. The researcher listed words that are often associated with well-being or the lack thereof and these words were correlated with the themes that had emerged from the results. This categorisation of well-being forms the basis of the discussion of the benefits of the wellness programme i.e. how does the wellness programme benefit HIV-positive employees in terms of physical, mental and social well-being?

Table 2.3.: Word associations relating to well-being

Positive Word Associations: Well-being		
Physical well-being <ul style="list-style-type: none"> • Health • Energy • Healthy behaviour 	Mental well-being <ul style="list-style-type: none"> • Happiness • Trust • Coping • Hope • Balance • Peace • Control • Contentment • Confidence • Fulfilment 	Social well-being <ul style="list-style-type: none"> • (Social) support • Marital state • Employment • Harmony • Belonging • Freedom
Negative Word Associations: Well-being		
Lack of Physical well-being <ul style="list-style-type: none"> • Fatigue • Unhealthy behaviour • Signs and symptoms of disease 	Lack of Mental well-being <ul style="list-style-type: none"> • Shock • Denial • Anger • Stress • Not coping • Distrust • Suspicion • Fear • Anxiety • Hopelessness 	Lack of Social well-being <ul style="list-style-type: none"> • Stigmatisation • Alienation • Deprivation • Rudeness • Marital problems • Employment stress

The following were present to ensure the trustworthiness²⁶ of the qualitative data:

- *Triangulation*: Triangulation of methods provided information on the relationship between clinical signs and symptoms (from file records) and perceived benefit of the wellness programme (from interviews with the OHNPs). Thus, different data collection techniques were used in the same study and thus a checking of consistency of findings generated by the different data collection methods.

- *Referential adequacy*: Various materials were available to document the findings. These included audio recordings, written notes, researcher journals, and employee clinical record files.

- *Data reconstruction and synthesis products:* Themes were developed, findings and conclusions were generated, and a final report was written.
- *Peer debriefing:* A colleague at the University of Pretoria, who was outside the context of the study, agreed to review perceptions, insights and analyses made by the researcher in order to question the researcher's working hypotheses during the process.
- *Purposive sampling:* Participants (although few) gave a range of information to the researcher.

2.5. Ethical considerations

The original study protocol was submitted to the Wits Faculty of Health Sciences' Ethics Committee for Research on Human Subjects on 7 October 2004. Ethics approval was granted in December 2004 (see Appendix B). Some changes had to be made in the execution of the study due to factors beyond the researcher's control. The amended protocol was submitted in May 2006 and Post-graduate Committee approval for the amendments was obtained in October 2006.

The following ethical issues were considered:

- Permission to conduct the study was granted by the Company at a meeting with the Africa Human Resources manager.
- The Company always obtains informed consent for HIV testing from employees who undergo VCT.
- Informed consent was obtained from employees by the OHNPs for the researcher to have access, either directly or indirectly, to data from employees' medical records.

- Confidentiality was ensured by allocating a number to participating employees. No names were recorded.
- In the case of the two factory visits, only the researcher viewed the original records and records were not removed from the premises.
- Informed consent was obtained from the OHNPs before interviewing them.

In this chapter the study methodology has been described along with the ethical considerations. The next two chapters present the results obtained from the research.

CHAPTER THREE

3. QUANTITATIVE RESULTS

This chapter presents the quantitative results of the study. Relevant results are represented in tables. The main aim of the study was to investigate whether HIV-positive employees benefited in terms of their well-being from an HIV workplace wellness programme.

The quantitative analysis focused primarily on physical aspects of well-being i.e. the physical effects of the nutritional supplements used in the wellness programme, while the qualitative analysis provided broader information regarding how the employees benefit from the wellness programme in general.

3.1. Quantitative Analysis

A total of 36 employees had data that could be analysed. However, data was not always complete for all the categories analysed. This is because the OHNPs from the various factories do not necessarily collect the same type of data in a similar way. Thus the sample size varied even further for the different indicators measured.

3.1.1. Background characteristics

3.1.1.1. Average time of participation in the wellness programme

The average (mean) amount of time that the employees were part of the wellness programme was 11.4 months, with the longest period of time being 24 months and the

shortest being 4 months. The majority of employees were on the programme for between 10 and 12 months.

The following table summarises the background characteristics of the employees:

Table 3.1.: Summary of descriptive data

Total sample n = 36	Number of employees	Percentage
SEX		
Male	18	50%
Female	7	19.4%
Unknown	11	30.6%
Total	36	100%
AGE		
20-29 years	1	2.8%
30-39 years	4	11%
40-49 years	5	13.9%
50-59 years	6	16.7%
Unknown	20	55.6%
Total	36	100%
MEDICAL AID SCHEMES		
Yes	5	13.9%
No	31	86.1%
Total	36	100%

3.1.1.2. Sex

Males represented 50% and females 19.4% of the sample (see Table 3.1). This makes sense as, according to the project leader, more men are employed by the company than women. The ratio of male to female employees is 18:7. Only data for 25 out of the 36 employees was available for the sex variable.

3.1.1.3. Age

Only 16 employees on the wellness programme had age-related data that could be analysed (see Table 3.1). Of these employees the average (mean) age was 44 years and eight months. The youngest member on the programme was 23 years and the oldest member was 56 years of age.

3.1.1.4. Medical Aid schemes

Out of the 36 employees in the sample, only 5 (13.9%) were on a medical aid scheme (and were thus referred to the AfA programme) (see Table 3.1). The other 86.1% of the sample were not on a medical aid and make use of the public system for other health needs that are not covered by the occupational health clinic (such as ART if needed). The ratio of those on a medical aid as opposed to those not on a medical aid is 1:6.

3.1.1.5. Supplement products

As mentioned, the OHNPs do not all use the same supplement products. They tend to use whichever supplement they feel best fits into their budget and opinion about supplementing. Out of the sample of 36 employees, the majority took 'Mixture of Life' (MOL) (19% on its own and the rest in combination with a multivitamin – 14% with the AfA-provided 'Centrum' and 22% with a cheap multivitamin). 25% took 'SuperPap' (SP), and 14% took 'Sterolandia' (SL). 'Sterolandia' was also taken in combination with food-based products such as 'E-pap' (6%) (see Table 3.2).

Table 3.2.: Breakdown of the types of supplement products taken

Total sample = 36	Number of employees	Percentage	
Supplements n = 36			
MOL	7	19%	Total MOL = 55%
MOL_C	5	14%	
MOL_MVIT	8	22%	
SL	5	14%	Total SL = 20%
EPAP_SL	2	6%	
SP	9	25%	Total SP = 25%

KEY:

MOL = Mixture of Life; **C** = Centrum; **MVIT** = General Multivitamin (no name given); **SL** = Sterolandia; **EPAP** = E-Pap; **SP** = SuperPap

3.1.2. CD4 counts and percentages

34 employees out of 36 had CD4 count data that could be analysed and 33 employees out of 36 had useable CD4 percentage data. The changes in CD4 counts and percentages from before to after the intervention are not statistically significant according to the student’s paired t-test (p=0.3662 and p=0.1169 respectively) (Table 3.3). These results were confirmed with the non-parametric Wilcoxon matched pairs signed rank test (p=0.1239 and p=0.1831 respectively). Both confidence intervals included one and thus neither of them are statistically significant.

Table 3.3.: Comparisons of CD4 counts and percentages before and after intervention

Variable	N	Mean (SD) Before	Mean (SD) After	Change in Mean(SD) and 95% CI	P-value Paired t-test	P-value Wilcoxon’s
CD4 count	34	412.6 (167.2)	388.64 (210.52)	23.94 (152.37) (-29.2;77.1)	0.3662	0.1239
CD4%	33	21.30 (7.17)	20.00 (6.29)	1.30 (4.64) (-0.34;2.95)	0.1169	0.1831

3.1.3. Weight changes

34 employees had weight data that could be analysed. In the student's paired t-test the change in weight from before to after the intervention is statistically significant ($p=0.0381$). The more conservative non-parametric Wilcoxon's matched pairs signed rank test shows that the change demonstrates a weak statistical significance ($p=0.0629$). The results show that, on average, employees gained 1.5 kilograms over the research period (See Table 3.4).

Table 3.4.: Comparisons of weight before and after intervention

Variable	N	Mean (SD) Before	Mean (SD) After	Change in Mean(SD) and 95% CI	P-value Paired t- test	P-value Wilcoxon's
Weight	34	70.19 (15.9)	71.72 (17.9)	1.5 (4.13) (0.89;2.9)	0.0381	0.0629

3.1.4. Episodes of diarrhoea

30 employees had useable data. When doing the McNemar's test for symmetry (Table 3.5), the diarrhoea status for 83% of employees (25 out of 30) remained unchanged. Among those that changed, 3 out of 5 (60%) changed for the better (in other words had fewer episodes of diarrhoea). The remaining 2 out of 5 thus had more episodes of diarrhoea. The Chi² test was 0.20. The change in diarrhoea status was, however, not significant ($p=0.6547$).

Table 3.5.: Symmetry results for changes in episodes of diarrhoea

		Episodes of diarrhoea after intervention		
		NO	YES	TOTAL
Episodes of diarrhoea before intervention	NO	24	2	26
	YES	3	1	4
	TOTAL	27	3	30

3.1.5. Absenteeism

When summarising the absenteeism data, only 27 employees had useable data. The average (mean) number of days taken as sick leave by HIV-positive employees in a year was 9 days (with a standard deviation of 15.75). However, due to the absenteeism data collection procedures being very different at the various factories, the absenteeism data was inconsistent and could thus not be analysed.

CHAPTER 4

4. QUALITATIVE RESULTS

4.1. Qualitative Analysis

Qualitative data were collected by means of telephonic and personal semi-structured interviews with eight occupational health nursing practitioners (OHNPs) and with the Company's national HIV project leader. These interviews were transcribed verbatim. The wellness programme was discussed primarily in these interviews including how the HIV wellness programme runs at their particular factory, what the employees on the programme are saying about how they feel, what the OHNPs' perceptions about the wellness programme are, along with their opinions regarding nutritional supplementation. Inevitably during the discussions other relevant information emerged such as issues surrounding VCT, peer education, the provision of ART and the public health care system. These aspects will also be presented briefly. Thematic analysis was performed to extract the relevant data from the information received.

4.2 Discussion of emerging themes

4.2.1. The wellness programme and HIV-positive employees

The qualitative data generated themes relating to fear of losing one's job and denial of the reality of HIV/AIDS, stigma and discrimination in the workplace and in the community at large, trust of the system and acceptance of the condition, the acceptability of nutritional supplements and the general benefits of the wellness programme.

Information gained all contributes to a better understanding of the effectiveness and benefit of the wellness programme in the light of pertinent issues affecting employees and OHNPs.

4.2.1.1. Theme 1: Fear and denial

An important issue reported by the OHNPs was that employees in general don't trust the VCT and wellness programme system and are afraid that they will lose their jobs if they join the programme. "There are negative perceptions amongst employees about the wellness programme. They believe that they will lose their jobs if they are identified as HIV-positive". The OHNPs reported that many (even as many as half) of the employees who test HIV-positive during VCT do not join the wellness programme. "Those who test positive disappear for some reason". Apart from the fear of losing one's job, this 'disappearance' is more than likely because of the denial that employees could go into when newly diagnosed as HIV-positive. Some OHNPs expressed feelings of frustration and despondency because of this. "There are those who are in denial regardless of what they've been taught or told...and when you're still having couple of deaths...to me that's very negative...when there's everything available for them".

Even employees who do join the wellness programme appear to experience uncertainty as to whether they will be able to maintain their jobs. One OHNP reported that she often needed to re-assure and counsel employees on the wellness programme that they won't lose their jobs because of their HIV status and that only if they become medically unfit to work will they be handled as would any other disabled or medically unfit person.

This fear of loosing their jobs causes immense stress among HIV-positive employees. At one factory, the OHNP very clearly linked the presence of stress to a decrease in the physical well-being of the HIV-positive employees. For a few months there was uncertainty about the possibility of retrenchments, causing stress for the employees at that factory. The OHNP said she noticed that in that time it seemed as if the employees on the wellness programme felt unwell more often, and presented with more fever blisters and more episodes of diarrhoea. The influence of stress in the management of HIV in the workplace should not be underestimated.

4.2.1.2. Theme 2: Stigma and discrimination

Over-and-above fears of loosing their work, HIV-positive employees also have to deal with personal stress as “often there are problems at home – the spouse doesn’t want to test, the spouse is negative, the spouse doesn’t know...”. An OHNP mentioned that some employees have got to the point of accepting their HIV-positive status but have not yet got to the point of disclosing it to their families due to fear of the consequences. The OHNPs often play the role of counsellor in supporting these employees. “The biggest difference one can make is in their mental approach to it, you know, that’s where I use EAP [Employee Assistance Programme] and we talk to them a lot...I think a mental acceptance sort of makes them better anyway”. Another OHNP mentioned that she believes that the spiritual aspects of dealing with HIV/AIDS should also be recognised. She tried to start a support group with the wellness programme members at her factory

but it proved to be difficult as it had to be off the factory premises and after hours because of confidentiality issues.

It was also reported that there are some employees at a particular factory who have disclosed their HIV-positive status. Everyone, including management, knows they are HIV-positive and they have been used quite effectively to encourage other employees to be tested and to disclose their HIV status as part of 'positive living' and to fight the stigma associated with HIV/AIDS. It was said that they "go around spreading the gospel" about positive living and they also fulfil a support role to other HIV-positive people who have not disclosed their status and who need support. "I think all the HIV-positives go to speak to them without anybody else knowing". One OHNP mentioned that she "wish[es] [the] guys can speak up so that everybody can know what's going on...". HIV-positive employees who have willingly disclosed their status can be very useful in helping to address the stigma of HIV/AIDS that prevents employees from being tested and actively managing their condition.

However, willingness to disclose is not necessarily a given. At most factories no-one except the OHNP knows who the HIV-positive employees are. One OHNP said that "management fishes" to try to find out, though. It appears that where HIV-positive employees do know about each other they respect each other's privacy and are even supportive of each other. "There are those employees who know each other and support each other".

Thus, while the OHNPs play an important role in providing emotional support to HIV-positive employees, it should be noted that HIV-positive employees are potentially the biggest support system to each other.

Regarding how to overcome the pervasive issue of stigmatisation, the project leader said that she would very much like people's perception of HIV/AIDS to change, particularly how people who are HIV-negative perceive those who are HIV-positive. She said she hoped people could look past the disease and related illnesses at the person. She maintains that other "acceptable" diseases such as high blood pressure could also be caused by "bad behaviour" such as "excessive drinking, smoking and sexual promiscuity and the resulting stress". People do not discriminate against these people but they do stigmatise people who have HIV (despite how they got it). She said that the whole issue of stigmatisation and discrimination is "sick". When asked how this negative perception can be changed, the project leader suggested that more credible and high profile people who have HIV/AIDS should come forward and disclose their HIV status and thus show that HIV-positive people need not be discriminated against.

4.2.1.3. Theme 3: Trust and acceptance

When analysing the wellness programme as a whole, the main theme that emerged was the issue of **trust**, in other words whether or not the employees trust the system and trust the OHNPs. As discussed, the lack of trust in the system is very clearly due to the underlying issues of fear of losing one's job, denial of the reality of HIV/AIDS and stigmatisation that HIV-positive employees have to face.

According to the OHNPs, the biggest strength of the wellness programme is the platform of trust that has been created. Initially employees tended to be hesitant to be tested and to join the wellness programme because of fear of discrimination or fear of being fired or retrenched more easily. According to the project leader the programme had to show its “credibility” and it has indeed done so and proved that it is “absolutely confidential”. Those who have joined the programme have seen that the confidentiality protocol is adhered to and can trust that “information has not leaked out”. Of those who have not been through VCT, some seem to know of people who have gone for testing and have joined the wellness programme and “they haven’t been fired, they are being treated and are well and at work”.

Thus, due to the confidentiality that has been strictly adhered to along with most of the OHNPs’ ability to establish and maintain a good rapport with the employees on the wellness programme, these employees feel they can trust the VCT and wellness programme system and the OHNPs and thereby they experience support. “I have a trust relationship with them...it really helps them because they feel someone cares about them”. “They feel free to talk about family problems”. This, in turn, contributes to employees accepting their condition and they are thus more likely to actively and positively manage it.

4.2.1.4. Theme 4: Acceptability of nutritional supplements

The use of nutritional supplements is a main aspect of the wellness programme and it is thus necessary to explore how the supplements are perceived to affect the employees' sense of health and well-being.

i) OHNPs' perceptions of employee opinions

According to the OHNPs, the employees seem to be mostly positive about the use of supplements within the wellness programme. One OHNP said "They don't want to do without them". The OHNPs say that the fact that the employees on the programme come back monthly and ask for their supplements shows that the employees feel the supplements are beneficial. "The way they demand them speaks of their value". "They come for the 'magic pills'".

The project leader mentioned that it is as if "[the employees] believe that they must have [the supplements] and if they don't get it (sic) they are not healthy...They say it makes them feel much better". According to the OHNPs, employees have reported to be feeling better physically when they take the supplements. "Employees say they sleep better and have more energy if they take the supplements...their immune system is improved...they are protected against chemicals". There is also a perception that they not only cope better physically but also in terms of working productively as well as interacting socially. "They just say they feel better and they're eating well and you can tell their CD4 count is going up and they're just generally coping at work and socially".

According to the OHNPs there are different opinions among the employees regarding the specific supplement products used. These appear to be based on personal experiences and preferences and seem to determine compliance. “Some say Mixture of Life is wonderful, others say Sterolandia, others say SuperPap”. Some employees prefer Mixture of Life to a multivitamin as “they believe in it more because it is an immune-booster”. At one factory where SuperPap was being used, the OHNP said that the employees were doing well on it and that they were disappointed when it was stopped due to the Company’s cost-saving policy. “The patient who was the thinnest appreciated it and used it the most and he put on some extra weight”. At another factory, however, the OHNP said that the employees decided that they don’t need SuperPap as they didn’t like its taste or colour.

This information is interesting to note in that it shows that careful consideration should be made of various factors such as efficacy and ease of use along with employee perceptions when considering what nutritional supplement use within a wellness programme.

ii) OHNPs’ opinions

The project leader said she is satisfied with the use of supplements as their primary approach in managing HIV/AIDS. The OHNPs’ own opinions about the supplements varied regarding which supplement is the better one to use although most of the OHNPs agreed that the use of the supplements in the programme is necessary. “Supplements are an essential ingredient of the wellness programme because ever since we started them on wellness we don’t have any more deaths”.

Supplements are also seen as necessary where OHNPs observe how employees are negatively affected by poverty. “Many of these people really live in squatter shacks and poor circumstances and they don’t eat balanced diets, so for them it is absolutely essential”.

It was interesting to note that certain supplements were given in combination with others. This is due to the OHNPs’ categorisation of the supplements. ‘Mixture of Life’ and ‘Sterolandia’ are seen as “immune-boosters” and thus different to multi-vitamin products. Food-based products like ‘SuperPap’ are considered to be different to the tablet/pill-based multi-vitamin products and are seen to be beneficial in that there is a ‘food’ element to the product (i.e. kilojoules are also consumed). In terms of continuing the use of supplements (excluding those containing African Potato^{iv}, like MOL) while employees are on ART, the project leader said she believes it is a good idea. People with HIV/AIDS are “immune-compromised and their systems are depleted” and thus supplements are a good idea even while taking ART.

In terms of opinions regarding the efficacy of the nutritional supplements, three OHNPs did question whether the supplements actually had an effect or whether the perceived benefit was as a result of a placebo effect. “Would I recommend the use of supplements? Oh most definitely. You know, I think a lot of it is psychological too. You know, it’s like a placebo...it’s a mental thing as well.”. Another OHNP said she was giving supplements purely because it’s company policy. She did not believe that they make a difference and

^{iv} African Potato interferes with the working of ART and thus employees are taken off MOL if they start with ART.

that “a bit of education and recommending that people eat a balanced diet, you know, and cutting down on alcohol consumption and to not smoke and these kinds of things” is sufficient.

Thus the majority of OHNPs believe that supplements are beneficial to the employees, albeit physically and/or mentally. Their opinions varied, though, regarding which particular supplement product is most effective.

Theme 5: Benefits of the wellness programme

Employees benefit from being able to access intervention conveniently at the workplace.

“The biggest benefit is that they’re on site; that they know that the clinic is confidential and that they feel free to come and...discuss things”. Another benefit is that those who are HIV-positive and don’t know it yet are detected early on. They are thus able to benefit from the wellness programme intervention from the early stages of the disease. The project leader maintains that where people have usually been tested when they’re on their “death bed”, now people are coming early because they trust the system. “They are tested, they test positive...they are treated, they are put on treatment early, they go on, they live their lives, they work, they provide for their family...”

Furthermore, due to the good trust relationship and through counselling, employees are more compliant in their use of supplements and treatment, thus optimising the effect of the supplements and treatment within the programme. This, in turn, is perceived to positively affect aspects such as absenteeism, “...patients get colds etc. but don’t seem to

have taken abnormal sick leave”. Added to this, the project leader mentioned that those with AIDS who would’ve been sick at home had there not been an intervention are well enough to be back at work.

Thus, apart from the trust relationship resulting in HIV-positive employees being well-supported, there is also more likely to be increased acceptance of the condition along with better management of it which, in turn, helps to keep employees at work and able to work.

The following aspects were raised during the interviews with the OHNPs and are discussed briefly as they contribute to an understanding of the Company’s HIV/AIDS management programme as a whole.

4.2.2. The comprehensive workplace HIV/AIDS intervention approach

4.2.2.1. Theme 6: Issues regarding VCT

VCT is usually the first step in the process of joining the wellness programme (i.e. employees first have to go through VCT and test positive before they join the wellness programme). If VCT and peer education are effective, HIV-positive employees are more likely to join the wellness programme and it is thus of interest to briefly consider.

VCT uptake in the factories studied was an average (mean) of 86% (see Table 4.1). The VCT and HIV prevalence data for each factory was conveyed by the respective OHNP, but not all the OHNPs knew this information for their particular factory. As mentioned

previously, the Company’s national VCT uptake is 77% and in Gauteng it is 76% (according to the project leader). The overall HIV prevalence within the Company was not known at the time of the study as figures had not yet been released to shareholders and was thus still confidential. The project leader mentioned, though, that prevalence was low. HIV prevalence in the factories studied was an average of 6% (see Table 4.1). It needs to be taken into account, however, that there was not 100% VCT uptake. Also, many employees are tested but do not return for their results and thus there is a gap in the statistic. The Company’s average is thus likely not to be reliable and this could also be indicative of the Company not having performed a thorough risk assessment.

Table 4.1.: VCT uptake and HIV prevalence in the factories studied

OHNP	VCT uptake	HIV prevalence	Employees on wellness programme
Nurse 1	Not available	Not available	Not available
Nurse 2	87%	7%	12
Nurse 3	100%	5%	22
Nurse 4	86%	6%	7
Nurse 5 (Factory 1)	Not available	Not available	8
Nurse 5 (Factory 2)	98%	Not available	Not given
Nurse 6 (Factory 1)	85%	7%	Not given
Nurse 6 (Factory 2)	50%	Not available	Not given
Nurse 7	Not available	5%	14
Nurse 8	96%	Not available	7
			Available total = 70 employees
TOTAL AVERAGE	86%	6%	12

The OHNPs explained that they have all had at least one VCT campaign since 2004. The overall VCT uptake varied at the different factories, some having a very good uptake and

thus not repeating the VCT campaign and others having to repeat it as the uptake was low. Some OHNPs used incentives (such as free t-shirts and meals) to draw employees to the campaign although some said they were criticised for this. Interestingly, where management and the trade union leaders were involved in the VCT drives, they appeared to be more successful.

Another reason for low uptake could be the reality of shift work at the factories and thus VCT campaigns can be difficult to implement. A main reason, however, for low VCT uptake appeared to be a perceived lack of trust of the system. Employees are hesitant to be tested as they fear that an HIV-positive result will put them “on top of list to be gotten rid of”.

In terms of progress regarding VCT, the project manager reported that where initially VCT uptake was low, it seems that more recent VCT drives have had better uptake, which she feels shows that more employees believe it’s “safe” (in terms of confidentiality) to be tested and that there are “more benefits to VCT” than negative aspects.

Some factories seem to have more contract workers than others. At a factory where the contract workers were also tested during their VCT campaign, it was reported that there was a high prevalence of HIV-positive results amongst the contract workers, even as high as 30%. These contract workers are usually not allowed to join the wellness programme and are referred to the public system for further treatment. At another factory, only about

2% of the contract workers actually came forward to be tested and thus results regarding contract workers vary quite a bit between factories.

4.2.2.2. Theme 7: Peer Education - is it working?

Peer Education occurs on an ongoing basis within the various factories and is seen to go hand-in-hand with VCT and the wellness programme. The Company runs two mandatory peer education programmes. The first is the 'initial' programme, which consists of 48 lessons, once a week for 15 minutes. Once the 'initial' programme has been completed a 'maintenance' programme is presented, once a month for 30 minutes. The 'maintenance' programme is designed to be more advanced and participatory. At most factories studied employees work in teams and work two day shifts, two night shifts and get four days off. Peer education usually takes place 10 minutes before team meetings, once a week. Employees are given 'Soul City' booklets called 'Live Positively' in their home language as part of the peer education. Peer educators are employees who volunteer to be peer educators and need to be HIV-negative as the HIV screening tests are demonstrated on them during VCT.

Peer education has generally been described by the OHNPs as successful within the Company. However, it was mentioned that at times employees don't pay attention and do not take peer education seriously. One OHNP said that the 'maintenance' programme is not working at her factory and she felt it would be more effective to get the HIV-positive employees at her factory who have disclosed their status to address the workforce about positive living. "...The next idea was that we get these three [employees] that are positive

and totally open about it come and say to the workforce ‘look we’re HIV-positive’ – the one guy had a CD4 count of 3, he’s back been productive and he’s enjoying life – ‘and that even if you are positive there is still your pension to work for that you can enjoy’”.

4.2.2.3. Theme 8: Anti-retroviral Therapy (ART)

When asked why the Company does not provide ART as a primary approach of treatment in their wellness programme, the project leader stated that the main reason is cost. If ART is considered then “it is not just the pills but all that goes with them”. With that she meant more pathology tests – “CD4 counts, viral load tests, liver function tests, kidney function tests”. There are also more costs in terms of the clinician involved in prescribing the medication. The employee’s spouse would also need to be treated and thus she maintains that things get complicated and costly. Just to put all the infrastructure in place will cost a “whole lot of money”. The provision of ART by the Company to non-medical aid employees is thus a complicated issue requiring further investigation.

It was interesting to note that there were various levels of compliance reported among the employees in the wellness programme who had starting taking ART (either through their medical scheme or through the public system). One patient was not complying with ART and he complained that ART makes him impotent. The OHNP tried various techniques to convince the patient to take the ART but had no success as he maintained that the “side-effects are not acceptable to him”. Another OHNP mentioned that her patients on ART are “100 percent compliant”. One employee “...is so compliant that it’s scary...When you’re 90 percent dead then you don’t want to be dead”.

4.2.3. Other related issues regarding the wellness programme

4.2.3.1. Theme 9: Barriers in the public health care system

The public health care system can be seen as an essential partner with the workplace in dealing with HIV/AIDS. If the public system is letting people down, then this directly affects how HIV/AIDS is managed within the workplace.

HIV-positive employees who do not belong to the Company's medical scheme^y (usually the lower level workers or contract workers) are referred to the public system if they need ART. According to the project leader, there have been reports of bad treatment by the public system nursing sisters at the ART roll-out clinics. "Bad treatment" includes the sisters being rude to the patients and also not adequately explaining to the patient how to take the anti-retroviral medication. Thus the employees come back to the OHNPs with "bags full of pills and no clue how to take them". Also, some employees have gone to a clinic and have been shown away month after month. One OHNP said that "...the government system, it's very depressing...It's not a very good system, you know" as patients have had to wait months before being started on treatment (even up to eight months) "with CD4 counts already being below 200".

The project leader even confronted a nursing sister at the Natalspruit Hospital about the bad service that the Company's employees were being subjected to and the sister at the hospital apparently said that they "do not waste their medication on people who are in,

^y Those who do belong to a medical scheme are referred to AfA for ART

any case, going to die soon”. The project leader was clearly very angry about this attitude. She said it was “shocking” as people are given false hope, “...they sit in a queue the whole day with no food and water only to be shown away...You don’t treat people that way”.

These reports of the public system highlight concerning barriers, as the employees who are referred to the public hospital don’t go back after negative experiences and thus do not get the necessary treatment.

4.2.3.2. Theme 10: The role of trade unions

The project leader mentioned that the trade unions play an important role in the success of the wellness programme. She emphasised that the trade unions are regarded as an important stakeholder in HIV/AIDS management in the Company and before the wellness programme was implemented a consultation meeting was held with the trade union leaders to achieve “buy in” from them. They are used instrumentally in influencing workers positively that HIV/AIDS management is a good thing and must be done. They are considered the “watchdog” from a legal and ethical perspective in that they check that all the legal procedures and protocols are followed correctly. If there is a problem, employees usually go to their trade unions first and thus a good relationship between management and the unions is imperative. Where initially the unions were sceptical about the wellness programme, now there is “100 percent cooperation” as the trust-relationship has been well established. In fact, they have even come to the project leader out of concern for workers that seem ill but that don’t want to go for testing. Nonetheless, some

shop stewards have apparently refused to participate in the wellness programme which negatively affects employee participation in the programme. One shop steward tried the system but, in the end, preferred to go to a private doctor as the OHNP perceived that he “didn’t want to loose any respect or regard from colleagues”.

4.2.3.3. Theme 11: OHNPs’ frustrations with the wellness programme

The OHNPs say they feel overworked. They spend a lot of their time dealing with HIV/AIDS over-and-above their other occupational health work. They thus feel burdened with the extra workload and are frustrated because they do not always get recognition for it. One OHNP said that she felt she had little support for the wellness programme from the management at her factory, which was frustrating for her.

Another OHNP expressed concern regarding the budget cuts recently experienced. She does not feel she is able to give the employees the best supplement products and she is concerned that the budget allocated to her will not be able to sustain the programme if more employees join. “And there’s nothing you can do. And they’re looking at you, you know, because you started this whole thing and now they’re not getting any help and they start panicking, you know”.

According to the project leader, some of the frustrations in terms of the efficacy of the wellness programme include management changes in factories. If a manager leaves a factory they have not always informed the new manager of the wellness programme and HIV/AIDS management in that particular factory. Thus, continuity (and progress) in

terms of implementation is hampered. Also, new workers are not always informed of the HIV/AIDS policy and programme, which is problematic.

i) Suggestions for improvement of the wellness programme

When asked what improvements the OHNPs would like to see, they made the following suggestions:

- OHNPs mentioned that they would like to be able to perform regular viral load tests (twice or thrice a year) on the employees taking the supplements in order to track the course of the disease progression. This would enable them to measure the effect of the supplements more concretely and could provide valuable information in managing HIV/AIDS. Viral load tests are not performed due to the costs of the test.
- One of the OHNPs suggested that supplements that have been proven to be effective and have been well-researched be included in the programme, thus “giving the patients something that is of value”. This would be beneficial in terms of general dietary improvements, which is necessary because “...if you live in a squatter camp, you can’t afford fruit and veggies...”.
- The provision of ART should be part of the wellness programme as the “government system” has let people needing ART down.

- It was suggested to have “more [HIV-]positive people come visit and spread [the message] that AIDS is a controllable illness and lots of people have got it and you don’t have to be ashamed”.
- The project leader would like to see that a medical doctor is involved in the wellness programme on a more regular basis. The doctor should preferably be an HIV “clinician” (in other words, an HIV specialist). In her opinion, a General Practitioner (GP) is not necessarily equipped to deal with the complexities of HIV/AIDS (just as a GP is not always equipped to deal with complexities within any specialist field). A specialist clinician will also be beneficial for those on ART within the programme that might need extra help.

This chapter has presented the qualitative results of the study performed. While few of the results are empirical, most of the findings are thought provoking, informative and useful in evaluating the Company’s HIV wellness programme. Whilst the results require further finite research, they will be discussed in the light of current literature in the following chapter along with conclusions and recommendations.

CHAPTER FIVE

5. DISCUSSION

The aim of this study was to assess the effect of the HIV wellness programme within the Company's factories. The main objective of the study was to investigate whether HIV-positive employees benefited from the HIV workplace wellness programme.

5.1. Limitations of the study

There were a number of limitations in this study. The sample size was small as only factories in Gauteng were included in the study. Data collection was difficult as there was no uniform company data collection system and the factories studied had not necessarily collected and documented similar types of data. Data was thus inconsistent and this made analysis difficult. Incomplete and missing data decreased the sample size further.

In terms of the nutritional supplements used in the wellness programme, the complicated nature of nutritional supplementation makes it difficult to study. Ideally, regular blood tests (including viral load tests) could be performed to monitor efficacy. Furthermore, the fact that the various OHNPs provide different types of supplement products to employees at their respective factories also prevents comparative analysis.

Thus, for these reasons the indicators used in this study fail to show any significant effect of the wellness programme.

Regarding the qualitative aspects of the study, it would have been valid if HIV-positive employees could have been interviewed directly to explore what they feel about the wellness programme along with what they believe to be important to them in terms of well-being.

5.2. Discussion of the major findings of the study

CD4 counts [(p=0.3662) (CI -29.2 ; 77.1)] and percentages [(p=0.1169), (CI -0.34 ; 2.95)], episodes of diarrhoea over time and absenteeism data particularly proved to be not statistically significant. However, changes in weight over time [(p=0.0381), (CI 0.89 ; 2.9)] were weakly statistically significant. The participants in the wellness programme gained an average of 1.5kg over the study period. While this weight gain does not necessarily make much of a difference to their overall wellness, the fact that the participants did not lose weight (as is usually the case with those suffering from HIV/AIDS) during the study period could be seen as a positive factor of the wellness programme.

The qualitative data regarding the OHNP's opinions about the HIV wellness programme showed that the programme has perceived benefits for those involved. Information was also obtained regarding possibilities for improvement to the programme as well as other related information.

Even though this study considers the Company's HIV wellness programme, it is of interest to briefly look at some of the other aspects of the suggested overall strategy mentioned in the Code of Good Practice on Key Aspects of HIV/AIDS and Employment (see pg 3), as all these elements are linked and exist along a continuum of prevention and care activities. Results of the study will be discussed according to these aspects, which include:

- an understanding and assessment of the impact of HIV/AIDS on the workplace; and
- long and short term measures to deal with and reduce this impact, including:
 - A prevention programme;
 - A wellness programme; and
 - Management strategies to deal with the direct and indirect costs of HIV/AIDS.

5.2.1. Understanding and assessment of the impact of HIV/AIDS on the workplace

It was assumed that the Company has some idea of the impact of HIV/AIDS in the workplace. Although not investigated, the researcher gathered from discussions with the project leader that some measurement of the impact of HIV/AIDS had been performed from absenteeism and medical boarding data (despite there not being a uniform data collection system in place). VCT statistics were unreliable as HIV prevalence is shown to be about 6% despite initial estimates being between 30-50%. Added to this, the Company's HIV prevalence is low when compared to the latest South African demographic data which shows that the prevalence of HIV/AIDS amongst adults (20-64

years of age) is 19.2%.²⁷ Correlating to this, the World Economic Forum conducted an Executive Opinion Survey during 2006 with 1653 sub-Saharan African firms and according to this survey South Africa has HIV infection rates of above 20% amongst employees.²⁸

When asked why the Company has implemented an HIV wellness programme, the project leader said that they had some cases where employees had died of AIDS-related causes and they wanted “insurance for the future to make sure they don’t lose more people”. She mentioned, however, that the Company has not really felt the impact of HIV/AIDS in a serious way at all. She is of the opinion, though, that had the Company not done anything in terms of the management of HIV/AIDS, then they probably would have experienced a more severe impact. It is important to note that many companies have policies in place but have not assessed risk adequately²⁸ and thus cannot respond adequately to the situation despite their genuine concern. Thus adequate and accurate assessment and understanding of the impact of HIV/AIDS in a company is of utmost importance.

5.2.2. Some long and short term measures to deal with the impact of HIV/AIDS

This discussion includes prevention strategies, the wellness programme itself and other management strategies in dealing with HIV/AIDS in the workplace.

5.2.2.1. Prevention programme

The Company has implemented key prevention activities, such as peer education and VCT. The effectiveness of the Company's peer education system was not studied but there were suggestions in the interviews that aspects of the peer education programme were not effective.

Literature suggests making use of 'opinion leaders' in peer education programmes as opposed to 'traditional' peer educators who are usually volunteers.²⁹ Opinion leaders are visible, popular and well-liked members of social networks and are strategically selected for popularity, community respect and influence.²⁹

VCT campaigns have been shown to be only partially effective in ensuring that every employee knows their status.³⁰ Some progressive companies in South Africa have begun to implement *compulsory counselling and voluntary testing* which ensures that every employee is aware of the basics of HIV/AIDS, understands what the test result means, and knows their medical and lifestyle options whether they test positive or negative.³⁰ While VCT uptake was high in the factories studied (average 86%), this is not a given nationally and thus compulsory counselling and voluntary testing might be a worthwhile strategy to explore.

5.2.2.2. Wellness programme

To determine the effect or benefit of the wellness programme on the health and well-being of the HIV-positive employees, the concept 'well-being' was broken down into its

components: *physical*, *mental* and *social* well-being (as discussed in sections 1.3 and 2.4.2.). The themes presented in Chapter 4 will be discussed here according to these components.

For those employees on the wellness programme the trust relationship they have with the OHNPs appeared to be most valuable and most beneficial. Because of this trust relationship, employees experience a sense of support and are more likely to accept their condition. This contributes to a sense of *mental* well-being. Early intervention and thus better management of the condition also occur and there is better compliance to treatment and disease management protocols. Along with this there was a general sentiment that there were benefits in the use of nutritional supplements. Employees reported feeling healthier (e.g. having more energy when using nutritional supplements) and this contributed to a sense of *physical* well-being. A big challenge, though, is to overcome mistrust amongst the general employee population who have not joined the wellness programme and to deal with the ever-present issues relating to the fear of losing their job if found to be HIV-positive as well as denial of the condition. This fear and denial perpetuates the reality of discrimination and stigmatisation, which inevitably negatively affects the *social* well-being of HIV-positive employees.

b) Physical well-being

i) Physical well-being and nutritional supplementation

The promotion of healthy living to people who test positive at the point of early diagnosis has ensured good health outcomes later and contributed to prolonged life expectancy.³⁰

Nutritional supplementation can be seen as part of this health promotion strategy. While this study did not prove empirically that nutritional supplementation made any measurable difference to the employees studied, a perceived benefit was noted.

Good nutrition can be said to consist of two aspects: food and supplementation. In terms of food, people require food security (i.e. reliable access to food) and enough healthy and well-balanced food. However, as much as food in itself can make a massive difference to the quality of life of a person living with HIV/AIDS, this is not enough. Research has shown that the nutritional needs of an HIV-positive person are much more than normal¹⁷ and thus supplementation enters the scenario.

This approach could delay the regression of an HIV-positive person²³, thus delaying the fall in CD4 counts, and thereby delaying the need for ART. Nutritional status and the progression of HIV are strongly interrelated and when ART is necessary, nutrition (in terms of food and supplementation) can be very beneficial in enhancing the efficacy of ART.³¹

Orr and Patient state that ART, as an essential treatment intervention, needs to be placed within the appropriate and necessary social and medical context.³² ART is directed at the extreme end of the HIV illness spectrum (i.e. AIDS – low CD4 count, in the presence of life-threatening opportunistic infections, and a high viral load). Prior to this phase, though, there is an average of 8 years of HIV infection.³² Specific nutritional compounds (e.g. selenium and vitamin A) have been found to be effective in extending this period,

thus delaying the onset of AIDS.³² Nutritional interventions have incorrectly been viewed as *alternatives* for ART treatment, when they are in fact most often directed at the pre-AIDS (and thus pre-ART) stage of HIV infection.³² The debate around the right treatment becomes more reasonable when viewing nutritional supplementation and ART as ‘both-and’ approaches within a continuum of care as opposed to an ‘either-or’ approaches.

ii) Physical well-being and the provision of ART

Regarding the provision of ART, the Company makes use of both the private and public sectors. For those on a medical aid scheme, Aid for AIDS (AfA) appears to be working well. For those not on a medical scheme, the public sector seems to have let them down. Reasons for this could be many, but the most reported problem lay with the public healthcare nurses. Nurses working with people living with HIV/AIDS (PLWHA) have been reported to experience increased levels of stress (due to increased workloads, increased emotional demands, low wages, and fear of accidental HIV transmission, for example) which could manifest in anger and frustration towards patients.³³ It has been recommended in literature that nurses in the public sector receive adequate and regular training and education regarding the biomedical aspects of HIV/AIDS as well as the emotional and psychological needs of PLWHA.³³ In the meantime, the debate continues as to whether companies should be paying for the provision of ART to employees who cannot afford medical scheme benefits while the public healthcare system becomes increasingly overstretched as it deals with growing numbers of AIDS patients and the loss of health care personnel.¹⁰

c) Mental and social well-being

i) Issues of trust, stigmatisation and disclosure

PLWHA face many physical challenges which affect their functioning. Signs and symptoms include fatigue, muscle weakness, neuropathy and decreased sensation, bowel and bladder incontinence, persistent cough, weight loss, decreased range of motion and coordination, limited endurance, cardiac problems and vision loss.³⁴ These impairments lead to challenges in maintaining employment. Along with the physical concerns, PLWHA face cognitive, emotional and social difficulties³⁴ that impact negatively on meaningful participation in all areas of life and particularly work activities. Due to the correlation between a person's ability to perform daily activities with their experience of life satisfaction and general health, an imbalance in work and productive activities may lead to depression, perceived loss of self-control, financial difficulties, social stigma, poor health, reduced independence, and reduced satisfaction with one's quality of life.³⁴

As has been mentioned, the trust relationship occurring between OHNPs and employees on the wellness programme has been a major benefit of the wellness programme and has enabled employees to deal with many of the above-mentioned stressors. However, stigmatisation and discrimination remain certain barriers to any response to HIV/AIDS in the workplace and often prevent employees from joining a disease management programme to begin with.³⁵ This could be ascribed to the complexity and sensitivity of dealing with the HIV/AIDS link to sexuality along with a sense of mistrust that tends to pervade society in terms of this issue.³⁶ While we understand to some degree how complex issues such as mistrust and denial can perpetuate stigmatisation and

discrimination, there are still few, if any, clear and concrete answers as to how we can overcome them.

Other beneficial strategies to address mental and social well-being in the wellness programme could, once again, be the use of employees who have disclosed their HIV status in 'positive living' promotion programmes. This notion fits in well with the Code of Good Practice which states that “mechanisms should be created to encourage openness, acceptance and support for those employers and employees who voluntarily disclose their HIV status within the workplace”.⁸ One way to achieve this is through the development of support groups⁸ for PLWHA, which has been difficult to implement in the Company thus far. Up until this point the employees have mostly preferred to remain anonymous and thus support is on an individual basis between the employee and the OHNP. HIV-positive employees who have openly disclosed their status could be useful in the establishment of support groups.³⁷ However, there would need to be a willingness of the other HIV-positive employees to disclose, albeit only to the other HIV-positive employees in the support group. This would depend from person to person and factory to factory.

ii) Community involvement as a means to affect social well-being

In discussions with the OHNPs, it came up that many of the employees on the wellness programme live in poverty and that this negatively affects these employees' ability to optimally manage their condition (e.g. being malnourished, stress about loss of income, the public health care system letting them down etc.). In terms of affecting change in the

broader context, companies are encouraged to contribute to broader community-based responses as a necessary part of mounting a comprehensive response to the HIV/AIDS epidemic.¹⁰ Thus an *intersectoral approach* of working in partnership with public, private, NGO and community organisations should be part of an HIV/AIDS management strategy. A number of the Company's factories nation-wide have evidence of community-based projects (e.g. recycling projects, renovation of school buildings, etc.) but these projects appear to be driven by the factory managers and thus the extent of community involvement and partnerships vary. Projects are also not necessarily HIV/AIDS-related.

5.2.2.3. Other management strategies

The following management strategy is highlighted in order to better manage HIV/AIDS in the workplace.

a) Monitoring and evaluation

Monitoring and evaluation have a significant role to play in any HIV/AIDS workplace intervention as they assist in determining whether the programme is appropriate, cost effective, useful and meets objectives.¹⁰ It became clear once the data collection began that different record-keeping systems are at place at the various factories studied and this makes it difficult to collect uniform data. This has been reported to be a problem in many other businesses too and apparently few businesses in South Africa keep accurate absenteeism data although a number of companies are putting systems in place.³⁸ In reality, though, data collection remains a slow and painful process and often there are delays in terms of HIV-related data collection because of more pressing priorities for

bosses and companies.³⁸ Nonetheless, systematic information gathering is crucial for a company's ability to plan for and mitigate the effects of HIV.³⁸ In terms of which indicators should be used for monitoring and evaluation, it would make sense to use measures such as CD4 counts and percentages as well as changes in weight over time. This study, though, did not have generalisable results when these indicators were measured due to a small sample size and inconsistent data collection methods by OHNPs and thus it is difficult to say which indicators are the strongest measures of how well an intervention programme is performing.

This chapter discussed the results of the study according to aspects of the suggested overall strategy mentioned in the Code of Good Practice on Key Aspects of HIV/AIDS and Employment. The wellness programme in particular was discussed according to how it was found to benefit HIV-positive employees in terms of physical, mental and social well-being.

CHAPTER 6

6. CONCLUSIONS AND RECOMMENDATIONS

The outcomes of the study, although not empirical or conclusive, do suggest that a holistic approach to the management of HIV/AIDS in the workplace is optimal and that further research in this area is needed. Based on the discussion presented in this document, the following recommendations are made.

In terms of the Company understanding the impact of HIV/AIDS in the workplace it is recommended that the Company continually updates appropriate strategies which include risk profiles and assessment of the direct and indirect costs of HIV/AIDS in order to better understand, assess and respond to the impact of HIV/AIDS in their workplace and sector.^{10,28} More efficient data collection systems should be put in place where uniform data can be collected systematically and thus measurement of the impact/effect/benefit of HIV/AIDS management efforts can be better monitored and evaluated. More effective measurement tools could also be considered, for example viral load testing. Cost versus benefit would need to be considered though.

Research with a larger sample size is necessary to determine which indicators are best to show programme effectiveness. Qualitative aspects, such as feedback from the OHNPs and the HIV-positive employees, should also be included. Ultimately, data should be collected uniformly and diligently at the various factories and it is thus strongly

recommended that an information gathering system be implemented as a matter of urgency within all the Company's factories as an integral part of their strategy in managing HIV/AIDS in the Company.

Strategies to improve VCT could be considered, such as compulsory counselling and voluntary testing. The peer education system should be evaluated to determine whether or not it is working. The more effective use of HIV-positive employees who have disclosed their status as positive-living role models should be explored in peer education programmes and in wellness programmes at all the factories nationwide. This could help to overcome the inherent mistrust that many employees display towards the system and they could provide important support to other HIV-positive employees. Along with this, the existing confidentiality protocol should continue to be strictly adhered to as this promotes the beneficial trust relationship between OHNPs and employees.

In the wellness programme, optimal supplements should be used which have the best effect. These should be well-researched. A question raised was is there a difference in the *type* of nutritional supplement used in an HIV wellness programme i.e. will a supplement product with more vitamins and minerals at higher dosages have a better effect than a supplement with fewer nutrients at lower dosages? It is strongly recommended that an HIV/AIDS nutrition expert be involved in advising what nutritional supplements should be used in the wellness programme. Supplementation is a science in itself and the caveat is that supplementation should be approached carefully and scientifically according to very specific clinical protocols, as would any other physiological intervention. Decisions

regarding which supplements to include in programmes should not be left to occupational health doctors' or OHNPs' discretion.

HIV/AIDS management in the workplace should be seen as an integration of prevention, health promotion, and treatment approaches thus providing support to HIV-positive employees along a continuum of care. It is also helpful to consider how a workplace intervention benefits the physical, mental and social well-being of the employees.

HIV/AIDS management programmes should thus ideally be multi-disciplinary in nature.

The following health professionals could be involved over and above the OHNP and occupational health doctor: occupational therapists (education, counselling, occupational group therapy, job analysis and job adaptations, energy saving principles, functional capacity evaluations, home visits, etc.); social workers (counselling, support groups, access to social grants, etc.); and nutritionists (expert nutritional advice considering nutritional supplementation and food security issues related to poverty).

Companies should investigate how they can get involved in community partnerships in the areas where their employees live in order to contribute to addressing issues related to poverty and HIV. Companies can research what the priorities are in terms of community partnerships and corporate social investment with regard to affecting change in the context of HIV/AIDS? A suggestion for community-based projects could be, for example, to focus on partnering with relevant NGOs and community-based projects to start community vegetable gardens which could assist in the issue of food security.

The public healthcare system is not always effective. This affects the efficacy of roll-out of ART and HIV-related services. Research should be done to investigate causes for ineffectiveness and suggestions should be made to improve services. Furthermore, the provision of ART by the Company to those workers not on medical aid should be considered.

This study is regarded as a first step in describing a particular scenario and further research needs to be performed on the questions arising from this scenario.

All things considered, the big issue in terms of the impact or benefit of any workplace HIV/AIDS management system is if the employees are at work, are able to work effectively, are productive and are thus providing an income for those who are dependent on that income. If this can be achieved and, very importantly if this can be measured, then effective HIV/AIDS management in the workplace can be realised.

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CHAPTER ONE

1. INTRODUCTION & LITERATURE REVIEW

HIV/AIDS is a bleak reality in South Africa and has engaged responses to it as diverse as the reach of its effect. Scenario planners have warned of its scourge, activists have responded to its destruction and scientists have measured its devastation. Despite this, various individuals and groups in the South African context have responded very differently or, even, not responded at all. In the mean time, people continue to get sick and die. Ultimately this affects individuals, families, communities¹ and society at large and thus, at this point in time, no-one remains unaffected.

Evidence in a recent study by public health researchers Stevens, Dickinson, Weiner and Mapolisa suggests that families are particularly hard-hit¹, especially when the most economically active member of the family becomes HIV-positive². Almost two-thirds of households studied experienced a drop in income as a result of having to cope with HIV/AIDS and almost half of the households studied reported having insufficient food at times.¹ Thus it is evident that the socio-economic impact of HIV/AIDS has fuelled a vicious cycle of poverty and the disease.¹

While varied responses have occurred across the South African society, one particular group's response is of interest, namely that of the Business and Industrial sector. The occupational setting is often an ideal avenue to use in terms of HIV/AIDS prevention,

education and care activities² because many of the major companies are at the cutting edge of communication, demand creation and distribution of goods and services and these are the very skills needed to help combat the spread of HIV/AIDS.³ With this being the case the question needs to be asked, what have South African businesses done in the wake of HIV/AIDS?

1.1. The Corporate sector and HIV/AIDS

As the impact of HIV/AIDS on businesses has become more visible, business leaders worldwide have increasingly seen the advantages of creating HIV/AIDS programmes for their workplaces – and some even beyond the workplace, to their surrounding communities.⁴ The impact of HIV/AIDS in the corporate sector has been described as effecting *business* and the *workforce*. The business impact includes the increased costs of doing business, reduced productivity and lower overall demand for goods and services.⁴ The workforce impact involves the loss of experienced personnel, increased absenteeism, increased recruitment and training costs, increased labour turnover, lower productivity of new recruits, and increased health care costs.⁴ Along with this are the more intangible effects on the workforce such as decreased morale, increased fear of contracting the disease, and increased marginalisation of HIV-positive employees.

Despite this, in South Africa the general business sector response to HIV and AIDS appears to have been slow⁵ and small and medium enterprises seem to have been particularly non-responsive thus far, reporting few substantive interventions³.

Large businesses, though, (particularly the mining sector) have led the way in setting up workplace responses to the HIV/AIDS crisis.⁵ In 2001 the Chamber of Mines Wage Agreement was signed in partnership with trade unions to develop and maintain programmes to minimise the impact of HIV/AIDS on all its stakeholders.⁶ Following this, HIV management programmes have been implemented across the mining sector. Simultaneously HIV/AIDS management programmes have also been implemented in many other large private sector companies⁷ such as Eskom, Ford Motor Company, Ilovo Sugar and Daimler Chrysler⁵. However, evidence about the successes companies have had in care and treatment programmes appears to be fragmented and anecdotal.⁷

The Government has put guidelines in place to assist companies with HIV/AIDS management. This includes the ‘Code of Good Practice on Key Aspects of HIV/AIDS and Employment’ which recommends that ‘every workplace should develop a workplace HIV/AIDS programme aimed at *preventing* new infections, providing *care* and *support* for employees who are infected or affected’⁸. The accompanying ‘HIV/AIDS Technical Assistance Guidelines’ (TAG) provides a framework for managing HIV/AIDS in the workplace and states that “effective management of HIV/AIDS in the workplace requires an integrated strategy” that includes:¹⁰

- an understanding and assessment of the impact of HIV/AIDS on the workplace; and
- long and short term measures to deal with and reduce this impact, including:
 - An HIV/AIDS policy for the workplace;
 - A prevention programme;

- A wellness programme; and
- Management strategies to deal with the direct and indirect costs of HIV/AIDS.

George and Whiteside go into more detail and state that a comprehensive workplace HIV/AIDS management programme should comprise of the following components, which relate to the abovementioned prevention, care and support activities³:

- raising awareness activities (displays, pamphlets, AIDS week, etc),
- peer education,
- condom promotion and distribution,
- Voluntary Counselling and Testing (VCT),
- management of sexually transmitted infections (STIs),
- an infection control programme, and
- a wellness programme ('positive living' elements and medical management).

Many of the large employers have also made antiretroviral treatment (ART) available to HIV-positive employees⁷ as part of a treatment approach².

While it is necessary to identify the various components of HIV/AIDS management in the workplace (particularly for monitoring and evaluation purposes), the separation, at some levels, is artificial as each of the component activities are linked to each other. For example, peer education will more than likely promote VCT, which in turn causes those who find out they are HIV-positive to join the wellness programme. Thus, prevention

activities and a wellness programme particularly form part of a continuum of prevention, care¹⁰ and support activities and are thus integral to each other.

1.2. Wellness programmes

In terms of *wellness programmes* specifically, not much literature could be found that describes HIV/AIDS workplace wellness programmes. The TAG mentions briefly what a wellness programme should consist of⁹:

- 1) ensuring access to affordable treatment for opportunistic infections;
- 2) ensuring access to affordable ART;
- 3) supporting HIV-positive employees with a receptive and accepting work environment and access to counselling;
- 4) supporting HIV-positive employees who can no longer work with home-visits and home-based care.

The Code recognises, though, that the nature and extent of a workplace programme will be guided by the needs and capacity of each individual workplace.¹⁰

In a recent study about HIV treatment in large South African companies performed by Conelly and Rosen⁷, it was found that overall enrolment levels of HIV-positive employees into various companies' treatment or wellness programmes were low. They estimated that less than a third of those with HIV are aware of their status and enrolled into a HIV disease management programme, while about 4 percent of HIV-positive employees are currently on ART. They also assumed that the overall low uptake of treatment services is caused by the stigma of HIV/AIDS, lack of trust among employees

that their employer will not find out their status, and the newness of the programmes.⁷

Connelly and Rosen further state that the commitment of companies and managers to implement programmes, approaches to recruiting employees into them, and the quality of the programmes themselves need to be further examined.⁷

Ultimately, the purpose of the wellness programme is to contribute to the health and well-being of HIV-positive employees so that they can continue to work productively for as long as possible.

1.3. The concepts of health and well-being

Literature relating directly or indirectly to health and well-being in the workplace is vast but surprisingly disjointed and unfocused.¹¹ Added to this is the reality that, even at its most general, health is a difficult construct to define.¹¹ Most workplace-related literature addresses health and well-being from physical, emotional, psychological and mental perspectives.¹¹ This fits in well with the gold-standard World Health Organization (WHO) definition, which presents health as “a state of complete *physical, mental, and social well-being* and not merely the absence of disease or infirmity.”¹² In more recent years, this statement has been modified to include “the ability to lead a socially and economically productive life.”¹³ Thus, there is a focus on holistic well-being (physical, mental and social) along with work (which enables one to lead an economically productive life). Thus, while health is a complex concept and can be defined in a narrow way to indicate bodily or mental functioning it can also be more broadly defined as personal fulfilment, an adaptive response, performing to the best of one’s abilities,

flexibility in encountering the challenges of life and integrated functioning.¹⁴ Despite these being abstract outcomes and difficult to measure, work-based health-related programmes should facilitate these goals.

In terms of health being physical, mental and social *well-being*, well-being does not appear to be officially defined but is described as an individual's perception of their condition.¹⁵ Research performed by Wilcock determined some of the general words associated with well-being¹⁵ which include:

- happiness, peace, confidence, energy, belonging, fulfilment, loving, control, health, freedom, relationships.

The following diagram (Fig 1.1) explains the main aspects of well-being.

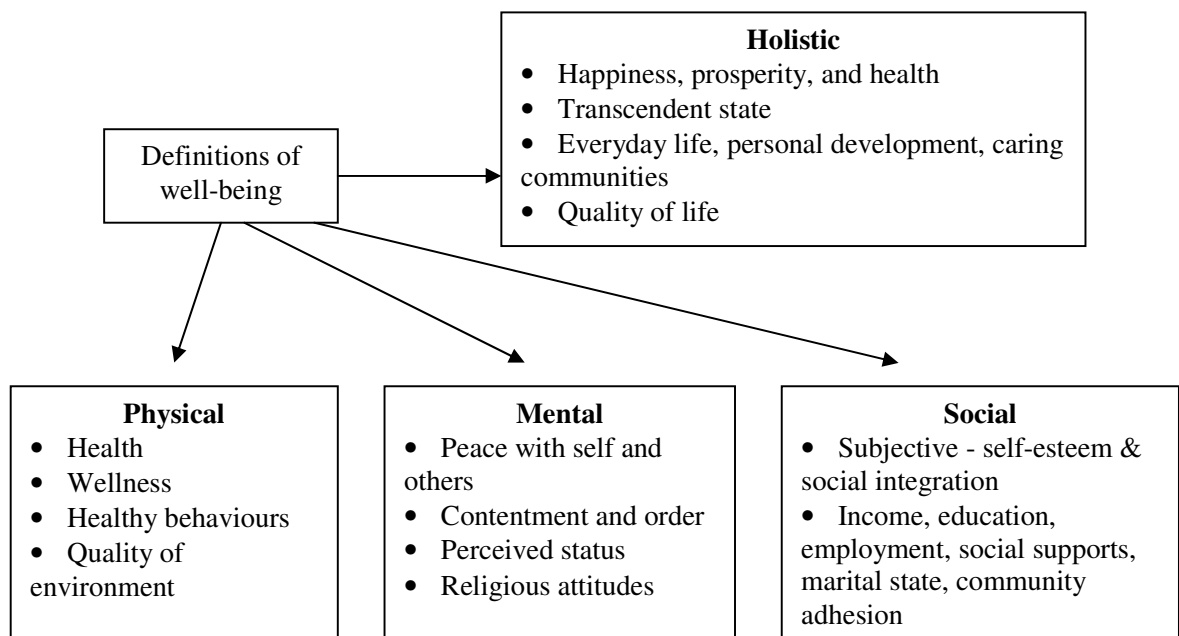


Figure 1.1.: Wilcock's definitions of well-being¹⁵

Thus, physical well-being is seen to include all aspects affecting the physical condition of an HIV-positive employee. Mental well-being is seen to be synonymous with ‘emotional’ and ‘psychological’ well-being. Social well-being concerns contextual aspects affecting the employee including issues such as poverty, marital state and stigmatisation.

1.4. Nutrition and HIV/AIDS

It has become increasingly accepted that good nutrition plays a vital role in the management of HIV/AIDS¹⁶. Thus, various companies running HIV/AIDS management programmes in the workplace in South Africa are also following the mindset of providing nutritional supplementation to employees who are HIV-positive, according to Epicentre – a non-government organisation (NGO) that manages workplace HIV/AIDS programmes.

With regard to the use of nutritional supplements in HIV/AIDS workplace wellness programmes, there appears to be various reasons for this approach. Evidence shows that micronutrient deficiencies can profoundly affect immunity^{17,18} and that micronutrient deficiencies are widely seen in HIV/AIDS, even in asymptomatic patients¹⁷. Studies also indicate that multiple nutritional abnormalities occur relatively early in the course of HIV infection.¹⁶

Direct relationships have been found between deficiencies of specific nutrients, such as vitamins A and B12, and a decline in CD4 counts. Deficiencies also appear to affect progression to AIDS (vitamin A, B12, zinc). Correction of deficiencies has shown to decrease symptoms and disease manifestation (AIDS dementia complex and B12;

diarrhoea, weight loss and zinc), and certain micronutrients, such as vitamin E and zinc, have demonstrated a direct anti-viral effect in vitro.^{16,17}

Furthermore, in a study of micronutrient profiles in HIV-1-infected heterosexual adults it was seen that 59% of HIV-positive patients had low concentrations of magnesium, compared with 9% of controls ($p < 0.0001$).¹⁸ These low concentrations were unrelated to the stage of disease. The low magnesium concentrations may be particularly relevant in terms of exacerbating HIV-related symptoms of fatigue, lethargy, and impaired mentation.¹⁸ Also, participants who took vitamin supplements consistently had higher concentrations of antioxidants, across HIV-infection status and disease stage strata ($p = 0.0006$).¹⁸

Another reason for nutritional deficiency in HIV is *malabsorption* of nutrients. Weight loss, anorexia, metabolic disorder and malabsorption are leading symptoms of HIV infection¹⁹ and the cause of HIV-associated wasting²⁰. Recent data show wasting as being intrinsically linked to immunodysregulation and enteropathy¹⁹ and the extent of wasting is related to the length of survival²¹. Malabsorption and diarrhoea may result from gastrointestinal tract opportunistic infections or from the direct effects of HIV on the gastrointestinal tract.²⁰ Diarrhoea and weight loss are found in more than 50% of patients with AIDS and in some patients the symptoms can be very severe, leading to death even in the absence of opportunistic infections.²² Rump et al found that in 30% of patients studied, enteric pathogens could not be identified, and approximately only half of the identifiable aetiologic agents of diarrhoea in patients infected with HIV were treatable

with antibiotics.²² Thus, nutritional deficiency is shown as a problem in HIV/AIDS and has to do with insufficient intake of nutrients as well as the malabsorption of nutrients.

Where CD4 counts are low, it has been shown in a Thai study that a cheap multivitamin and mineral supplement can enhance survival of HIV-positive people with less than 200 CD4 cells and who are unable to access anti-retroviral therapy.²³ Although universal access to ART is the long-term goal of South Africa's national HIV/AIDS programme, in 2005 less than 10% of medically eligible patients were receiving ART in the public and private sectors.⁷ Although many employers in South Africa will rely on the public sector to take care of HIV-positive workers²⁴, it cannot be assumed that employees will have ready access to treatment at public clinics for some years to come⁷.

1.5. Description of the Company's workplace programme

A large multi-national packaging company was investigated in this study (for confidentiality reasons it will be referred to as 'the Company'). The Company has about 80 factories in South Africa (SA). They have an established HIV/AIDS wellness programme, initially managed by Epicentre but now managed internally.

The Company's approach to managing HIV/AIDS in the workplace includes activities mentioned early such as raising-awareness activities (e.g. posters in the workplace and 'Soul City' booklets), peer education, condom promotion and distribution, VCT drives,

treatment of STIs and other HIV-related conditions, and an HIVⁱ wellness programme.

Exactly how the activities are executed depends on the occupational health nursing practitioner (OHNP) at a particular factory. Generally though, VCT drives are held where employees are counselled and tested. If the screening test shows that they are positive then blood is drawn and sent for an Elisa test to confirm the positive result. The employee is then encouraged to join the Company's HIV wellness programme in order to assist the employee in managing the progression of the disease.

The HIV wellness programme includes the treatment of HIV/AIDS-related problems (including the treatment of STIs), and antibiotics and other medication (such as throat lozenges, skin creams, pain medication etc.) are provided when necessary. These are prescribed by the OHNP or by the occupational health doctor who performs annual medical checkups on all employees.

All HIV-positive employees who join the wellness programme are given a basic nutritional supplement, usually either 'Mixture of Life' (MOL) – made up of a combination of 8 vitamins, 3 minerals and 3 specialised nutrients (including spirulina, and African potato) - or 'Sterolandia' (SL) - a whole food supplement made up of mixed vegetable and cereal sprouts in powder form and Sutherlandia Microphylla. The supplement given depends on what the OHNP at a particular factory decides to purchase and thus other supplement products have also been given, such as a general multivitamin or food-based supplements like 'SuperPap' (SP), 'E-pap', 'Maizoya' and 'PowerMeal'. If

ⁱ The Company's wellness programme includes HIV and AIDS management. For convenience, 'HIV/AIDS wellness programme' will be conflated to 'HIV wellness programme' but will imply the management of HIV and AIDS.

an employee's CD4 count falls below 200/ml or if they become symptomatic, they are referred for antiretroviral therapy, either through the Company's medical scheme or, if the employee does not belong to the medical scheme, through the public health care system. Those belonging to a medical scheme are referred confidentially to the 'Aid for AIDS'ⁱⁱ (AfA) programme for ART and HIV-related treatment. AfA also apparently places their patients on the multi-nutrient product 'Centrum'.

In terms of the 'positive living' elements of the HIV wellness programme, the OHNPs provide counselling and advice should the need arise. This contributes to emotional support as the OHNPs are often the only people who know that a particular person is HIV-positive.

The aim of this study was to consider the impact of the HIV wellness programme within the Company's factories. **Note:** the term 'impact' in the title of this study is understood to mean the 'benefit' or 'effect' of the wellness programme.

1.5.1. Research question

The main question asked was what benefit or effect does the Company's workplace wellness programme have on its HIV-positive employees in terms of their well-being?

ⁱⁱ Aid for AIDS is an independent disease management programme contracted into certain medical schemes which allows for the confidential treatment of HIV-positive scheme members without the knowledge of the employer, the medical scheme or the administrator.

1.5.2. Study Objectives

a) To describe the effect of the wellness programme as measured by differences in CD4 counts and percentages, weight, episodes of diarrhoea and sick leave taken between the beginning and end scores of the study time period.

b) To explore the perceptions and views of the OHNPs regarding the benefit of the wellness programme on the general sense of health and well-being of the HIV-positive employees.

1.5.3. Justification of the study

This research is of value because it assists in gaining information about how companies are dealing with HIV/AIDS in the workplace. It also gives insight into aspects affecting the well-being of HIV-positive employees as well as issues faced by OHNPs. It is hoped that the information gained will lead to improvements in this Company's programme where necessary, and also to further, more specific research in the area of HIV/AIDS and the workplace.

CHAPTER TWO

2. MATERIALS AND METHODS

In this chapter the study method and design are explained. A description of the research setting and the context is presented, followed by the sampling strategy, data collection procedure, data reliability and data analysis. Ethical aspects are also mentioned.

2.1. Study method and design

The study was a retrospective record review which evaluated a before-and-after intervention (i.e. the Company's HIV wellness programme). The design was quasi-experimental and mainly descriptive. Both qualitative and quantitative methods were used.

Two main methods of measurement were used to collect data: Firstly, employee records were accessed to gain quantitative data on CD4 counts and percentages, weight gain or loss, clinical signs and symptoms (such as episodes of diarrhoea), and absenteeism data.

Secondly, semi-structured interviews were performed with OHNPs to gain information about the effect of the wellness programme on the HIV-positive employees' state of health and well-being.

2.2. Study population and sample

The Company has approximately 80 factories across South Africa, employing about 11500 workers. Most of the Company's factories are in three main regions. There are 30 factories in the Gauteng region with about 5000 employees, 17 factories in the KwaZulu Natal (KZN) region with about 3000 employees, and 15 factories in the Western Cape region with about 3000 employees.

This study was conducted in the factories in the Gauteng region. Factories in the Western Cape and KZN regions were not included due to cost constraints. 14 OHNPs manage the occupational health clinics of the Gauteng factories. The sample is thus a *convenience* sample in that costs needed to be considered and the candidates were chosen on the basis of accessibility and availability and not randomly. It is also a *purposive* sample in that the Company's Gauteng OHNPs were presumed to be an average sample of the Company's OHNPs and that they are most knowledgeable regarding how the wellness programme functions within their factories. In considering all the factories in the country, there would be some similarities but also some differences between the three regions. Similarities would include the *types* of factories (e.g. paper, plastic or bottling factories) whereas differences would include aspects like employee demographics (i.e. more rural employees in KZN as opposed to Gauteng). However, the sample is small and thus not generalisable to other areas.

2.2.1. Occupational health nurses

Of the 14 OHNPs in Gauteng, eight were interviewed - six telephonically and two face-to-face. It was hoped to contact all 14 of them, but in the end only eight could be contacted. One sister was never available despite several attempts to contact her and another was a temporary sister who could not give detailed information. The remaining four sisters apparently did not have any employees on the HIV wellness programme. The criterion for OHNPs to be included in the sample was that they have HIV-positive employees who are participating in the wellness programme. The Company's national HIV/AIDS project leaderⁱⁱⁱ was also interviewed telephonically in order to obtain her opinions about the wellness programme.

Table 2.1.: OHNP sample information

Sample Framework	Sample (meet inclusion criterion)	Data obtained	Non-responses	Response rate
14 Gauteng OHNPs + Project leader = 15 OHNPs	10 Gauteng OHNPs + Project leader = 11 OHNPs	9 OHNPs	2 OHPNs	82%

2.2.2. HIV-positive employees

The eight OHNPs were informed about the study and that permission had been granted to perform the study from the Company's management as well as from the Wits Human Research Ethics Committee. All agreed to participate by being interviewed and by assisting the researcher to acquire data about the CD4 counts, CD4 percentages and clinical signs and symptoms of the employees who were part of the wellness programme

ⁱⁱⁱ She is also an OHNP and is a purposive inclusion into the study sample due to her relevance to the study.

and who were willing to have their records reviewed. The OHNPs obtained informed consent from employees and no data was conveyed to the researcher without the informed consent of the employees. Six out of the eight OHNPs said they preferred to convey the data in an electronic table format while two OHNPs preferred the researcher to visit their clinics to review the files there.

Employees had to fulfil the following inclusion criteria to be accepted in the study:

- HIV-positive workers in Gauteng who are part of the company's HIV/AIDS wellness programme and who have thus been through VCT,
- who had been on the wellness programme for a minimum of three months,
- who had thus taken a nutritional supplement for a minimum of three months,
- both male and female,
- of adult age i.e. older than 18,
- at any of the stages of HIV,
- who were not receiving ART during the study period, and
- females who were not pregnant or breastfeeding during the study period.

Not all employees agreed to have their records reviewed and, in the end, data was obtained from 56 employees from ten different factories (some OHNPs manage more than one factory's clinic). It was estimated that if all the Gauteng employees on the wellness programme had given consent and if all the data could be used there would have been between 70 and 80 employees in the sample. The study sample was thus made up of HIV-positive employees in Gauteng who fitted the inclusion criteria and who had taken a

nutritional supplement for at least three months between the end of 2003 and January 2006. Most employees studied had taken a nutritional supplement for at least six months. Of the 56 responses obtained, data for 15 employees from one particular factory were incomplete and thus could not be used. Furthermore, four employees started taking ART during the study period and were excluded from the study sample. Another employee had only been on the wellness programme for two months and was also excluded. The final sample was thus 36 employees.

Table 2.2.: HIV-positive employee sample information

Sample Framework	Sample	Data obtained	Response Rate
Gauteng HIV+ employees on wellness programme (70-80 employees)	56 HIV+ employees on wellness programme	36 employees	64%

2.3. Measurement

2.3.1. Quantitative measurement

The data reviewed was data collected between the end of 2003 and January 2006. Most employees had been on the wellness programme for at least six months to a year.

The following measurement methods were included:

a) CD4 counts and percentages: CD4 counts and CD4 percentages (i.e. the percentage of lymphocytes that are CD4 cells) are taken when an employee enters the HIV wellness programme. The tests are meant to be repeated every 4 months or whenever possible. This did not appear to be a given due to differences in procedures at the various factories.

Thus the first CD4 count and percentage taken when entering the programme and the last (i.e. most recent) CD4 count and percentage that were available on record were analysed.

b) A Wellness Management Form: The OHNPs are meant to administer a Wellness Management Form to employees during their first visit when joining the wellness programme. The form is ideally repeated monthly at follow-up visits. However, the record keeping systems varied between factories and the Wellness Management Form was not used at all the factories. Nonetheless, the indicators that were of interest in this study (e.g. weight measurements and episodes of diarrhoea) were mostly available, although not in a consistent format nor in regular time intervals.

c) Weight measurements: Weight measurements are performed at least once a year during annual checkups by the occupational health doctor. This information was also accessed from the employees' record files and analysed.

d) Records of absenteeism: Some employees' files indicated days taken for sick leave, however this data was not consistently available due to a change in the absenteeism record-keeping system within the Company making it difficult to collect and analyse absenteeism data.

Thus, quantitative measurement occurred in the following ways:

- Differences in the CD4 counts and percentages of the employees investigated between the beginning- and end-scores of the study time period.

- Differences in weight measurements of employees investigated between the beginning- and end-scores of the study time period.
- Differences in episodes of diarrhoea reported by the employees to the OHNPs investigated between the beginning and the end of the study.
- Number of sick days taken by the employees.

2.3.2. Qualitative measurement

Qualitative data were acquired by means of face-to-face or telephonic semi-structured interviews with the OHNPs (see Appendix A). Information obtained from the OHNPs included how the HIV wellness programme runs at their particular factory, what the employees on the programme are saying about how they feel, what the OHNPs' perceptions about the wellness programme are, along with their opinions regarding nutritional supplementation. Interviews were conducted in either English or Afrikaans depending on the preference of the OHNPs.

2.4. Analysis

2.4.1. Quantitative analysis

Analysis of data was primarily descriptive in nature although some inferential statistics were used. Data was summarised by using frequencies and percentages for categorical variables and means and standard deviations for the continuous variables for the characteristics under study. Testing for significant differences was employed to the changes in the mean scores over the observation period. For continuous measurements,

tests like the student's paired t-test and Wilcoxon's matched paired signed ranks test were employed. For discrete measurements, McNemar's test was used. The level of significance was 0.05.

2.4.2. Qualitative analysis

The interviews, except for three, were taped and transcribed verbatim to assist analysis. Where interviews were not able to be taped, detailed notes were made. Thematic analysis of qualitative data was carried out.²⁵ Data was read and re-read as a means of familiarisation with the data. Key issues, concepts and themes were identified based on issues and questions derived from the aims and objectives of the study as well as issues raised by the respondents themselves.²⁵ Identification and indexing of themes and categories were performed by using techniques such as colour-coding. Data was then further rearranged to find associations and provide explanations of the findings.²⁵

Wilcock's definitions of well-being¹⁵ (see Fig 1.1. on page 7) were applied to assist in finding associations to the concept of well-being in the interview texts. The researcher listed words that are often associated with well-being or the lack thereof and these words were correlated with the themes that had emerged from the results. This categorisation of well-being forms the basis of the discussion of the benefits of the wellness programme i.e. how does the wellness programme benefit HIV-positive employees in terms of physical, mental and social well-being?

Table 2.3.: Word associations relating to well-being

Positive Word Associations: Well-being		
Physical well-being <ul style="list-style-type: none"> • Health • Energy • Healthy behaviour 	Mental well-being <ul style="list-style-type: none"> • Happiness • Trust • Coping • Hope • Balance • Peace • Control • Contentment • Confidence • Fulfilment 	Social well-being <ul style="list-style-type: none"> • (Social) support • Marital state • Employment • Harmony • Belonging • Freedom
Negative Word Associations: Well-being		
Lack of Physical well-being <ul style="list-style-type: none"> • Fatigue • Unhealthy behaviour • Signs and symptoms of disease 	Lack of Mental well-being <ul style="list-style-type: none"> • Shock • Denial • Anger • Stress • Not coping • Distrust • Suspicion • Fear • Anxiety • Hopelessness 	Lack of Social well-being <ul style="list-style-type: none"> • Stigmatisation • Alienation • Deprivation • Rudeness • Marital problems • Employment stress

The following were present to ensure the trustworthiness²⁶ of the qualitative data:

- *Triangulation*: Triangulation of methods provided information on the relationship between clinical signs and symptoms (from file records) and perceived benefit of the wellness programme (from interviews with the OHNPs). Thus, different data collection techniques were used in the same study and thus a checking of consistency of findings generated by the different data collection methods.

- *Referential adequacy*: Various materials were available to document the findings. These included audio recordings, written notes, researcher journals, and employee clinical record files.

- *Data reconstruction and synthesis products:* Themes were developed, findings and conclusions were generated, and a final report was written.
- *Peer debriefing:* A colleague at the University of Pretoria, who was outside the context of the study, agreed to review perceptions, insights and analyses made by the researcher in order to question the researcher's working hypotheses during the process.
- *Purposive sampling:* Participants (although few) gave a range of information to the researcher.

2.5. Ethical considerations

The original study protocol was submitted to the Wits Faculty of Health Sciences' Ethics Committee for Research on Human Subjects on 7 October 2004. Ethics approval was granted in December 2004 (see Appendix B). Some changes had to be made in the execution of the study due to factors beyond the researcher's control. The amended protocol was submitted in May 2006 and Post-graduate Committee approval for the amendments was obtained in October 2006.

The following ethical issues were considered:

- Permission to conduct the study was granted by the Company at a meeting with the Africa Human Resources manager.
- The Company always obtains informed consent for HIV testing from employees who undergo VCT.
- Informed consent was obtained from employees by the OHNPs for the researcher to have access, either directly or indirectly, to data from employees' medical records.

- Confidentiality was ensured by allocating a number to participating employees. No names were recorded.
- In the case of the two factory visits, only the researcher viewed the original records and records were not removed from the premises.
- Informed consent was obtained from the OHNPs before interviewing them.

In this chapter the study methodology has been described along with the ethical considerations. The next two chapters present the results obtained from the research.

CHAPTER THREE

3. QUANTITATIVE RESULTS

This chapter presents the quantitative results of the study. Relevant results are represented in tables. The main aim of the study was to investigate whether HIV-positive employees benefited in terms of their well-being from an HIV workplace wellness programme.

The quantitative analysis focused primarily on physical aspects of well-being i.e. the physical effects of the nutritional supplements used in the wellness programme, while the qualitative analysis provided broader information regarding how the employees benefit from the wellness programme in general.

3.1. Quantitative Analysis

A total of 36 employees had data that could be analysed. However, data was not always complete for all the categories analysed. This is because the OHNPs from the various factories do not necessarily collect the same type of data in a similar way. Thus the sample size varied even further for the different indicators measured.

3.1.1. Background characteristics

3.1.1.1. Average time of participation in the wellness programme

The average (mean) amount of time that the employees were part of the wellness programme was 11.4 months, with the longest period of time being 24 months and the

shortest being 4 months. The majority of employees were on the programme for between 10 and 12 months.

The following table summarises the background characteristics of the employees:

Table 3.1.: Summary of descriptive data

Total sample n = 36	Number of employees	Percentage
SEX		
Male	18	50%
Female	7	19.4%
Unknown	11	30.6%
Total	36	100%
AGE		
20-29 years	1	2.8%
30-39 years	4	11%
40-49 years	5	13.9%
50-59 years	6	16.7%
Unknown	20	55.6%
Total	36	100%
MEDICAL AID SCHEMES		
Yes	5	13.9%
No	31	86.1%
Total	36	100%

3.1.1.2. Sex

Males represented 50% and females 19.4% of the sample (see Table 3.1). This makes sense as, according to the project leader, more men are employed by the company than women. The ratio of male to female employees is 18:7. Only data for 25 out of the 36 employees was available for the sex variable.

3.1.1.3. Age

Only 16 employees on the wellness programme had age-related data that could be analysed (see Table 3.1). Of these employees the average (mean) age was 44 years and eight months. The youngest member on the programme was 23 years and the oldest member was 56 years of age.

3.1.1.4. Medical Aid schemes

Out of the 36 employees in the sample, only 5 (13.9%) were on a medical aid scheme (and were thus referred to the AfA programme) (see Table 3.1). The other 86.1% of the sample were not on a medical aid and make use of the public system for other health needs that are not covered by the occupational health clinic (such as ART if needed). The ratio of those on a medical aid as opposed to those not on a medical aid is 1:6.

3.1.1.5. Supplement products

As mentioned, the OHNPs do not all use the same supplement products. They tend to use whichever supplement they feel best fits into their budget and opinion about supplementing. Out of the sample of 36 employees, the majority took 'Mixture of Life' (MOL) (19% on its own and the rest in combination with a multivitamin – 14% with the AfA-provided 'Centrum' and 22% with a cheap multivitamin). 25% took 'SuperPap' (SP), and 14% took 'Sterolandia' (SL). 'Sterolandia' was also taken in combination with food-based products such as 'E-pap' (6%) (see Table 3.2).

Table 3.2.: Breakdown of the types of supplement products taken

Total sample = 36	Number of employees	Percentage	
Supplements n = 36			
MOL	7	19%	Total MOL = 55%
MOL_C	5	14%	
MOL_MVIT	8	22%	
SL	5	14%	Total SL = 20%
EPAP_SL	2	6%	
SP	9	25%	Total SP = 25%

KEY:

MOL = Mixture of Life; **C** = Centrum; **MVIT** = General Multivitamin (no name given); **SL** = Sterolandia; **EPAP** = E-Pap; **SP** = SuperPap

3.1.2. CD4 counts and percentages

34 employees out of 36 had CD4 count data that could be analysed and 33 employees out of 36 had useable CD4 percentage data. The changes in CD4 counts and percentages from before to after the intervention are not statistically significant according to the student’s paired t-test (p=0.3662 and p=0.1169 respectively) (Table 3.3). These results were confirmed with the non-parametric Wilcoxon matched pairs signed rank test (p=0.1239 and p=0.1831 respectively). Both confidence intervals included one and thus neither of them are statistically significant.

Table 3.3.: Comparisons of CD4 counts and percentages before and after intervention

Variable	N	Mean (SD) Before	Mean (SD) After	Change in Mean(SD) and 95% CI	P-value Paired t-test	P-value Wilcoxon’s
CD4 count	34	412.6 (167.2)	388.64 (210.52)	23.94 (152.37) (-29.2;77.1)	0.3662	0.1239
CD4%	33	21.30 (7.17)	20.00 (6.29)	1.30 (4.64) (-0.34;2.95)	0.1169	0.1831

3.1.3. Weight changes

34 employees had weight data that could be analysed. In the student's paired t-test the change in weight from before to after the intervention is statistically significant ($p=0.0381$). The more conservative non-parametric Wilcoxon's matched pairs signed rank test shows that the change demonstrates a weak statistical significance ($p=0.0629$). The results show that, on average, employees gained 1.5 kilograms over the research period (See Table 3.4).

Table 3.4.: Comparisons of weight before and after intervention

Variable	N	Mean (SD) Before	Mean (SD) After	Change in Mean(SD) and 95% CI	P-value Paired t- test	P-value Wilcoxon's
Weight	34	70.19 (15.9)	71.72 (17.9)	1.5 (4.13) (0.89;2.9)	0.0381	0.0629

3.1.4. Episodes of diarrhoea

30 employees had useable data. When doing the McNemar's test for symmetry (Table 3.5), the diarrhoea status for 83% of employees (25 out of 30) remained unchanged. Among those that changed, 3 out of 5 (60%) changed for the better (in other words had fewer episodes of diarrhoea). The remaining 2 out of 5 thus had more episodes of diarrhoea. The Chi² test was 0.20. The change in diarrhoea status was, however, not significant ($p=0.6547$).

Table 3.5.: Symmetry results for changes in episodes of diarrhoea

		Episodes of diarrhoea after intervention		
		NO	YES	TOTAL
Episodes of diarrhoea before intervention	NO	24	2	26
	YES	3	1	4
	TOTAL	27	3	30

3.1.5. Absenteeism

When summarising the absenteeism data, only 27 employees had useable data. The average (mean) number of days taken as sick leave by HIV-positive employees in a year was 9 days (with a standard deviation of 15.75). However, due to the absenteeism data collection procedures being very different at the various factories, the absenteeism data was inconsistent and could thus not be analysed.

CHAPTER 4

4. QUALITATIVE RESULTS

4.1. Qualitative Analysis

Qualitative data were collected by means of telephonic and personal semi-structured interviews with eight occupational health nursing practitioners (OHNPs) and with the Company's national HIV project leader. These interviews were transcribed verbatim. The wellness programme was discussed primarily in these interviews including how the HIV wellness programme runs at their particular factory, what the employees on the programme are saying about how they feel, what the OHNPs' perceptions about the wellness programme are, along with their opinions regarding nutritional supplementation. Inevitably during the discussions other relevant information emerged such as issues surrounding VCT, peer education, the provision of ART and the public health care system. These aspects will also be presented briefly. Thematic analysis was performed to extract the relevant data from the information received.

4.2 Discussion of emerging themes

4.2.1. The wellness programme and HIV-positive employees

The qualitative data generated themes relating to fear of losing one's job and denial of the reality of HIV/AIDS, stigma and discrimination in the workplace and in the community at large, trust of the system and acceptance of the condition, the acceptability of nutritional supplements and the general benefits of the wellness programme.

Information gained all contributes to a better understanding of the effectiveness and benefit of the wellness programme in the light of pertinent issues affecting employees and OHNPs.

4.2.1.1. Theme 1: Fear and denial

An important issue reported by the OHNPs was that employees in general don't trust the VCT and wellness programme system and are afraid that they will lose their jobs if they join the programme. "There are negative perceptions amongst employees about the wellness programme. They believe that they will lose their jobs if they are identified as HIV-positive". The OHNPs reported that many (even as many as half) of the employees who test HIV-positive during VCT do not join the wellness programme. "Those who test positive disappear for some reason". Apart from the fear of losing one's job, this 'disappearance' is more than likely because of the denial that employees could go into when newly diagnosed as HIV-positive. Some OHNPs expressed feelings of frustration and despondency because of this. "There are those who are in denial regardless of what they've been taught or told...and when you're still having couple of deaths...to me that's very negative...when there's everything available for them".

Even employees who do join the wellness programme appear to experience uncertainty as to whether they will be able to maintain their jobs. One OHNP reported that she often needed to re-assure and counsel employees on the wellness programme that they won't lose their jobs because of their HIV status and that only if they become medically unfit to work will they be handled as would any other disabled or medically unfit person.

This fear of loosing their jobs causes immense stress among HIV-positive employees. At one factory, the OHNP very clearly linked the presence of stress to a decrease in the physical well-being of the HIV-positive employees. For a few months there was uncertainty about the possibility of retrenchments, causing stress for the employees at that factory. The OHNP said she noticed that in that time it seemed as if the employees on the wellness programme felt unwell more often, and presented with more fever blisters and more episodes of diarrhoea. The influence of stress in the management of HIV in the workplace should not be underestimated.

4.2.1.2. Theme 2: Stigma and discrimination

Over-and-above fears of loosing their work, HIV-positive employees also have to deal with personal stress as “often there are problems at home – the spouse doesn’t want to test, the spouse is negative, the spouse doesn’t know...”. An OHNP mentioned that some employees have got to the point of accepting their HIV-positive status but have not yet got to the point of disclosing it to their families due to fear of the consequences. The OHNPs often play the role of counsellor in supporting these employees. “The biggest difference one can make is in their mental approach to it, you know, that’s where I use EAP [Employee Assistance Programme] and we talk to them a lot...I think a mental acceptance sort of makes them better anyway”. Another OHNP mentioned that she believes that the spiritual aspects of dealing with HIV/AIDS should also be recognised. She tried to start a support group with the wellness programme members at her factory

but it proved to be difficult as it had to be off the factory premises and after hours because of confidentiality issues.

It was also reported that there are some employees at a particular factory who have disclosed their HIV-positive status. Everyone, including management, knows they are HIV-positive and they have been used quite effectively to encourage other employees to be tested and to disclose their HIV status as part of 'positive living' and to fight the stigma associated with HIV/AIDS. It was said that they "go around spreading the gospel" about positive living and they also fulfil a support role to other HIV-positive people who have not disclosed their status and who need support. "I think all the HIV-positives go to speak to them without anybody else knowing". One OHNP mentioned that she "wish[es] [the] guys can speak up so that everybody can know what's going on...". HIV-positive employees who have willingly disclosed their status can be very useful in helping to address the stigma of HIV/AIDS that prevents employees from being tested and actively managing their condition.

However, willingness to disclose is not necessarily a given. At most factories no-one except the OHNP knows who the HIV-positive employees are. One OHNP said that "management fishes" to try to find out, though. It appears that where HIV-positive employees do know about each other they respect each other's privacy and are even supportive of each other. "There are those employees who know each other and support each other".

Thus, while the OHNPs play an important role in providing emotional support to HIV-positive employees, it should be noted that HIV-positive employees are potentially the biggest support system to each other.

Regarding how to overcome the pervasive issue of stigmatisation, the project leader said that she would very much like people's perception of HIV/AIDS to change, particularly how people who are HIV-negative perceive those who are HIV-positive. She said she hoped people could look past the disease and related illnesses at the person. She maintains that other "acceptable" diseases such as high blood pressure could also be caused by "bad behaviour" such as "excessive drinking, smoking and sexual promiscuity and the resulting stress". People do not discriminate against these people but they do stigmatise people who have HIV (despite how they got it). She said that the whole issue of stigmatisation and discrimination is "sick". When asked how this negative perception can be changed, the project leader suggested that more credible and high profile people who have HIV/AIDS should come forward and disclose their HIV status and thus show that HIV-positive people need not be discriminated against.

4.2.1.3. Theme 3: Trust and acceptance

When analysing the wellness programme as a whole, the main theme that emerged was the issue of **trust**, in other words whether or not the employees trust the system and trust the OHNPs. As discussed, the lack of trust in the system is very clearly due to the underlying issues of fear of losing one's job, denial of the reality of HIV/AIDS and stigmatisation that HIV-positive employees have to face.

According to the OHNPs, the biggest strength of the wellness programme is the platform of trust that has been created. Initially employees tended to be hesitant to be tested and to join the wellness programme because of fear of discrimination or fear of being fired or retrenched more easily. According to the project leader the programme had to show its “credibility” and it has indeed done so and proved that it is “absolutely confidential”. Those who have joined the programme have seen that the confidentiality protocol is adhered to and can trust that “information has not leaked out”. Of those who have not been through VCT, some seem to know of people who have gone for testing and have joined the wellness programme and “they haven’t been fired, they are being treated and are well and at work”.

Thus, due to the confidentiality that has been strictly adhered to along with most of the OHNPs’ ability to establish and maintain a good rapport with the employees on the wellness programme, these employees feel they can trust the VCT and wellness programme system and the OHNPs and thereby they experience support. “I have a trust relationship with them...it really helps them because they feel someone cares about them”. “They feel free to talk about family problems”. This, in turn, contributes to employees accepting their condition and they are thus more likely to actively and positively manage it.

4.2.1.4. Theme 4: Acceptability of nutritional supplements

The use of nutritional supplements is a main aspect of the wellness programme and it is thus necessary to explore how the supplements are perceived to affect the employees' sense of health and well-being.

i) OHNPs' perceptions of employee opinions

According to the OHNPs, the employees seem to be mostly positive about the use of supplements within the wellness programme. One OHNP said "They don't want to do without them". The OHNPs say that the fact that the employees on the programme come back monthly and ask for their supplements shows that the employees feel the supplements are beneficial. "The way they demand them speaks of their value". "They come for the 'magic pills'".

The project leader mentioned that it is as if "[the employees] believe that they must have [the supplements] and if they don't get it (sic) they are not healthy...They say it makes them feel much better". According to the OHNPs, employees have reported to be feeling better physically when they take the supplements. "Employees say they sleep better and have more energy if they take the supplements...their immune system is improved...they are protected against chemicals". There is also a perception that they not only cope better physically but also in terms of working productively as well as interacting socially. "They just say they feel better and they're eating well and you can tell their CD4 count is going up and they're just generally coping at work and socially".

According to the OHNPs there are different opinions among the employees regarding the specific supplement products used. These appear to be based on personal experiences and preferences and seem to determine compliance. “Some say Mixture of Life is wonderful, others say Sterolandia, others say SuperPap”. Some employees prefer Mixture of Life to a multivitamin as “they believe in it more because it is an immune-booster”. At one factory where SuperPap was being used, the OHNP said that the employees were doing well on it and that they were disappointed when it was stopped due to the Company’s cost-saving policy. “The patient who was the thinnest appreciated it and used it the most and he put on some extra weight”. At another factory, however, the OHNP said that the employees decided that they don’t need SuperPap as they didn’t like its taste or colour.

This information is interesting to note in that it shows that careful consideration should be made of various factors such as efficacy and ease of use along with employee perceptions when considering what nutritional supplement use within a wellness programme.

ii) OHNPs’ opinions

The project leader said she is satisfied with the use of supplements as their primary approach in managing HIV/AIDS. The OHNPs’ own opinions about the supplements varied regarding which supplement is the better one to use although most of the OHNPs agreed that the use of the supplements in the programme is necessary. “Supplements are an essential ingredient of the wellness programme because ever since we started them on wellness we don’t have any more deaths”.

Supplements are also seen as necessary where OHNPs observe how employees are negatively affected by poverty. “Many of these people really live in squatter shacks and poor circumstances and they don’t eat balanced diets, so for them it is absolutely essential”.

It was interesting to note that certain supplements were given in combination with others. This is due to the OHNPs’ categorisation of the supplements. ‘Mixture of Life’ and ‘Sterolandia’ are seen as “immune-boosters” and thus different to multi-vitamin products. Food-based products like ‘SuperPap’ are considered to be different to the tablet/pill-based multi-vitamin products and are seen to be beneficial in that there is a ‘food’ element to the product (i.e. kilojoules are also consumed). In terms of continuing the use of supplements (excluding those containing African Potato^{iv}, like MOL) while employees are on ART, the project leader said she believes it is a good idea. People with HIV/AIDS are “immune-compromised and their systems are depleted” and thus supplements are a good idea even while taking ART.

In terms of opinions regarding the efficacy of the nutritional supplements, three OHNPs did question whether the supplements actually had an effect or whether the perceived benefit was as a result of a placebo effect. “Would I recommend the use of supplements? Oh most definitely. You know, I think a lot of it is psychological too. You know, it’s like a placebo...it’s a mental thing as well.”. Another OHNP said she was giving supplements purely because it’s company policy. She did not believe that they make a difference and

^{iv} African Potato interferes with the working of ART and thus employees are taken off MOL if they start with ART.

that “a bit of education and recommending that people eat a balanced diet, you know, and cutting down on alcohol consumption and to not smoke and these kinds of things” is sufficient.

Thus the majority of OHNPs believe that supplements are beneficial to the employees, albeit physically and/or mentally. Their opinions varied, though, regarding which particular supplement product is most effective.

Theme 5: Benefits of the wellness programme

Employees benefit from being able to access intervention conveniently at the workplace.

“The biggest benefit is that they’re on site; that they know that the clinic is confidential and that they feel free to come and...discuss things”. Another benefit is that those who are HIV-positive and don’t know it yet are detected early on. They are thus able to benefit from the wellness programme intervention from the early stages of the disease. The project leader maintains that where people have usually been tested when they’re on their “death bed”, now people are coming early because they trust the system. “They are tested, they test positive...they are treated, they are put on treatment early, they go on, they live their lives, they work, they provide for their family...”

Furthermore, due to the good trust relationship and through counselling, employees are more compliant in their use of supplements and treatment, thus optimising the effect of the supplements and treatment within the programme. This, in turn, is perceived to positively affect aspects such as absenteeism, “...patients get colds etc. but don’t seem to

have taken abnormal sick leave”. Added to this, the project leader mentioned that those with AIDS who would’ve been sick at home had there not been an intervention are well enough to be back at work.

Thus, apart from the trust relationship resulting in HIV-positive employees being well-supported, there is also more likely to be increased acceptance of the condition along with better management of it which, in turn, helps to keep employees at work and able to work.

The following aspects were raised during the interviews with the OHNPs and are discussed briefly as they contribute to an understanding of the Company’s HIV/AIDS management programme as a whole.

4.2.2. The comprehensive workplace HIV/AIDS intervention approach

4.2.2.1. Theme 6: Issues regarding VCT

VCT is usually the first step in the process of joining the wellness programme (i.e. employees first have to go through VCT and test positive before they join the wellness programme). If VCT and peer education are effective, HIV-positive employees are more likely to join the wellness programme and it is thus of interest to briefly consider.

VCT uptake in the factories studied was an average (mean) of 86% (see Table 4.1). The VCT and HIV prevalence data for each factory was conveyed by the respective OHNP, but not all the OHNPs knew this information for their particular factory. As mentioned

previously, the Company’s national VCT uptake is 77% and in Gauteng it is 76% (according to the project leader). The overall HIV prevalence within the Company was not known at the time of the study as figures had not yet been released to shareholders and was thus still confidential. The project leader mentioned, though, that prevalence was low. HIV prevalence in the factories studied was an average of 6% (see Table 4.1). It needs to be taken into account, however, that there was not 100% VCT uptake. Also, many employees are tested but do not return for their results and thus there is a gap in the statistic. The Company’s average is thus likely not to be reliable and this could also be indicative of the Company not having performed a thorough risk assessment.

Table 4.1.: VCT uptake and HIV prevalence in the factories studied

OHNP	VCT uptake	HIV prevalence	Employees on wellness programme
Nurse 1	Not available	Not available	Not available
Nurse 2	87%	7%	12
Nurse 3	100%	5%	22
Nurse 4	86%	6%	7
Nurse 5 (Factory 1)	Not available	Not available	8
Nurse 5 (Factory 2)	98%	Not available	Not given
Nurse 6 (Factory 1)	85%	7%	Not given
Nurse 6 (Factory 2)	50%	Not available	Not given
Nurse 7	Not available	5%	14
Nurse 8	96%	Not available	7
			Available total = 70 employees
TOTAL AVERAGE	86%	6%	12

The OHNPs explained that they have all had at least one VCT campaign since 2004. The overall VCT uptake varied at the different factories, some having a very good uptake and

thus not repeating the VCT campaign and others having to repeat it as the uptake was low. Some OHNPs used incentives (such as free t-shirts and meals) to draw employees to the campaign although some said they were criticised for this. Interestingly, where management and the trade union leaders were involved in the VCT drives, they appeared to be more successful.

Another reason for low uptake could be the reality of shift work at the factories and thus VCT campaigns can be difficult to implement. A main reason, however, for low VCT uptake appeared to be a perceived lack of trust of the system. Employees are hesitant to be tested as they fear that an HIV-positive result will put them “on top of list to be gotten rid of”.

In terms of progress regarding VCT, the project manager reported that where initially VCT uptake was low, it seems that more recent VCT drives have had better uptake, which she feels shows that more employees believe it’s “safe” (in terms of confidentiality) to be tested and that there are “more benefits to VCT” than negative aspects.

Some factories seem to have more contract workers than others. At a factory where the contract workers were also tested during their VCT campaign, it was reported that there was a high prevalence of HIV-positive results amongst the contract workers, even as high as 30%. These contract workers are usually not allowed to join the wellness programme and are referred to the public system for further treatment. At another factory, only about

2% of the contract workers actually came forward to be tested and thus results regarding contract workers vary quite a bit between factories.

4.2.2.2. Theme 7: Peer Education - is it working?

Peer Education occurs on an ongoing basis within the various factories and is seen to go hand-in-hand with VCT and the wellness programme. The Company runs two mandatory peer education programmes. The first is the 'initial' programme, which consists of 48 lessons, once a week for 15 minutes. Once the 'initial' programme has been completed a 'maintenance' programme is presented, once a month for 30 minutes. The 'maintenance' programme is designed to be more advanced and participatory. At most factories studied employees work in teams and work two day shifts, two night shifts and get four days off. Peer education usually takes place 10 minutes before team meetings, once a week. Employees are given 'Soul City' booklets called 'Live Positively' in their home language as part of the peer education. Peer educators are employees who volunteer to be peer educators and need to be HIV-negative as the HIV screening tests are demonstrated on them during VCT.

Peer education has generally been described by the OHNPs as successful within the Company. However, it was mentioned that at times employees don't pay attention and do not take peer education seriously. One OHNP said that the 'maintenance' programme is not working at her factory and she felt it would be more effective to get the HIV-positive employees at her factory who have disclosed their status to address the workforce about positive living. "...The next idea was that we get these three [employees] that are positive

and totally open about it come and say to the workforce ‘look we’re HIV-positive’ – the one guy had a CD4 count of 3, he’s back been productive and he’s enjoying life – ‘and that even if you are positive there is still your pension to work for that you can enjoy’”.

4.2.2.3. Theme 8: Anti-retroviral Therapy (ART)

When asked why the Company does not provide ART as a primary approach of treatment in their wellness programme, the project leader stated that the main reason is cost. If ART is considered then “it is not just the pills but all that goes with them”. With that she meant more pathology tests – “CD4 counts, viral load tests, liver function tests, kidney function tests”. There are also more costs in terms of the clinician involved in prescribing the medication. The employee’s spouse would also need to be treated and thus she maintains that things get complicated and costly. Just to put all the infrastructure in place will cost a “whole lot of money”. The provision of ART by the Company to non-medical aid employees is thus a complicated issue requiring further investigation.

It was interesting to note that there were various levels of compliance reported among the employees in the wellness programme who had starting taking ART (either through their medical scheme or through the public system). One patient was not complying with ART and he complained that ART makes him impotent. The OHNP tried various techniques to convince the patient to take the ART but had no success as he maintained that the “side-effects are not acceptable to him”. Another OHNP mentioned that her patients on ART are “100 percent compliant”. One employee “...is so compliant that it’s scary...When you’re 90 percent dead then you don’t want to be dead”.

4.2.3. Other related issues regarding the wellness programme

4.2.3.1. Theme 9: Barriers in the public health care system

The public health care system can be seen as an essential partner with the workplace in dealing with HIV/AIDS. If the public system is letting people down, then this directly affects how HIV/AIDS is managed within the workplace.

HIV-positive employees who do not belong to the Company's medical scheme^y (usually the lower level workers or contract workers) are referred to the public system if they need ART. According to the project leader, there have been reports of bad treatment by the public system nursing sisters at the ART roll-out clinics. "Bad treatment" includes the sisters being rude to the patients and also not adequately explaining to the patient how to take the anti-retroviral medication. Thus the employees come back to the OHNPs with "bags full of pills and no clue how to take them". Also, some employees have gone to a clinic and have been shown away month after month. One OHNP said that "...the government system, it's very depressing...It's not a very good system, you know" as patients have had to wait months before being started on treatment (even up to eight months) "with CD4 counts already being below 200".

The project leader even confronted a nursing sister at the Natalspruit Hospital about the bad service that the Company's employees were being subjected to and the sister at the hospital apparently said that they "do not waste their medication on people who are in,

^y Those who do belong to a medical scheme are referred to AfA for ART

any case, going to die soon”. The project leader was clearly very angry about this attitude. She said it was “shocking” as people are given false hope, “...they sit in a queue the whole day with no food and water only to be shown away...You don’t treat people that way”.

These reports of the public system highlight concerning barriers, as the employees who are referred to the public hospital don’t go back after negative experiences and thus do not get the necessary treatment.

4.2.3.2. Theme 10: The role of trade unions

The project leader mentioned that the trade unions play an important role in the success of the wellness programme. She emphasised that the trade unions are regarded as an important stakeholder in HIV/AIDS management in the Company and before the wellness programme was implemented a consultation meeting was held with the trade union leaders to achieve “buy in” from them. They are used instrumentally in influencing workers positively that HIV/AIDS management is a good thing and must be done. They are considered the “watchdog” from a legal and ethical perspective in that they check that all the legal procedures and protocols are followed correctly. If there is a problem, employees usually go to their trade unions first and thus a good relationship between management and the unions is imperative. Where initially the unions were sceptical about the wellness programme, now there is “100 percent cooperation” as the trust-relationship has been well established. In fact, they have even come to the project leader out of concern for workers that seem ill but that don’t want to go for testing. Nonetheless, some

shop stewards have apparently refused to participate in the wellness programme which negatively affects employee participation in the programme. One shop steward tried the system but, in the end, preferred to go to a private doctor as the OHNP perceived that he “didn’t want to loose any respect or regard from colleagues”.

4.2.3.3. Theme 11: OHNPs’ frustrations with the wellness programme

The OHNPs say they feel overworked. They spend a lot of their time dealing with HIV/AIDS over-and-above their other occupational health work. They thus feel burdened with the extra workload and are frustrated because they do not always get recognition for it. One OHNP said that she felt she had little support for the wellness programme from the management at her factory, which was frustrating for her.

Another OHNP expressed concern regarding the budget cuts recently experienced. She does not feel she is able to give the employees the best supplement products and she is concerned that the budget allocated to her will not be able to sustain the programme if more employees join. “And there’s nothing you can do. And they’re looking at you, you know, because you started this whole thing and now they’re not getting any help and they start panicking, you know”.

According to the project leader, some of the frustrations in terms of the efficacy of the wellness programme include management changes in factories. If a manager leaves a factory they have not always informed the new manager of the wellness programme and HIV/AIDS management in that particular factory. Thus, continuity (and progress) in

terms of implementation is hampered. Also, new workers are not always informed of the HIV/AIDS policy and programme, which is problematic.

i) Suggestions for improvement of the wellness programme

When asked what improvements the OHNPs would like to see, they made the following suggestions:

- OHNPs mentioned that they would like to be able to perform regular viral load tests (twice or thrice a year) on the employees taking the supplements in order to track the course of the disease progression. This would enable them to measure the effect of the supplements more concretely and could provide valuable information in managing HIV/AIDS. Viral load tests are not performed due to the costs of the test.
- One of the OHNPs suggested that supplements that have been proven to be effective and have been well-researched be included in the programme, thus “giving the patients something that is of value”. This would be beneficial in terms of general dietary improvements, which is necessary because “...if you live in a squatter camp, you can’t afford fruit and veggies...”.
- The provision of ART should be part of the wellness programme as the “government system” has let people needing ART down.

- It was suggested to have “more [HIV-]positive people come visit and spread [the message] that AIDS is a controllable illness and lots of people have got it and you don’t have to be ashamed”.
- The project leader would like to see that a medical doctor is involved in the wellness programme on a more regular basis. The doctor should preferably be an HIV “clinician” (in other words, an HIV specialist). In her opinion, a General Practitioner (GP) is not necessarily equipped to deal with the complexities of HIV/AIDS (just as a GP is not always equipped to deal with complexities within any specialist field). A specialist clinician will also be beneficial for those on ART within the programme that might need extra help.

This chapter has presented the qualitative results of the study performed. While few of the results are empirical, most of the findings are thought provoking, informative and useful in evaluating the Company’s HIV wellness programme. Whilst the results require further finite research, they will be discussed in the light of current literature in the following chapter along with conclusions and recommendations.

CHAPTER FIVE

5. DISCUSSION

The aim of this study was to assess the effect of the HIV wellness programme within the Company's factories. The main objective of the study was to investigate whether HIV-positive employees benefited from the HIV workplace wellness programme.

5.1. Limitations of the study

There were a number of limitations in this study. The sample size was small as only factories in Gauteng were included in the study. Data collection was difficult as there was no uniform company data collection system and the factories studied had not necessarily collected and documented similar types of data. Data was thus inconsistent and this made analysis difficult. Incomplete and missing data decreased the sample size further.

In terms of the nutritional supplements used in the wellness programme, the complicated nature of nutritional supplementation makes it difficult to study. Ideally, regular blood tests (including viral load tests) could be performed to monitor efficacy. Furthermore, the fact that the various OHNPs provide different types of supplement products to employees at their respective factories also prevents comparative analysis.

Thus, for these reasons the indicators used in this study fail to show any significant effect of the wellness programme.

Regarding the qualitative aspects of the study, it would have been valid if HIV-positive employees could have been interviewed directly to explore what they feel about the wellness programme along with what they believe to be important to them in terms of well-being.

5.2. Discussion of the major findings of the study

CD4 counts [(p=0.3662) (CI -29.2 ; 77.1)] and percentages [(p=0.1169), (CI -0.34 ; 2.95)], episodes of diarrhoea over time and absenteeism data particularly proved to be not statistically significant. However, changes in weight over time [(p=0.0381), (CI 0.89 ; 2.9)] were weakly statistically significant. The participants in the wellness programme gained an average of 1.5kg over the study period. While this weight gain does not necessarily make much of a difference to their overall wellness, the fact that the participants did not lose weight (as is usually the case with those suffering from HIV/AIDS) during the study period could be seen as a positive factor of the wellness programme.

The qualitative data regarding the OHNP's opinions about the HIV wellness programme showed that the programme has perceived benefits for those involved. Information was also obtained regarding possibilities for improvement to the programme as well as other related information.

Even though this study considers the Company's HIV wellness programme, it is of interest to briefly look at some of the other aspects of the suggested overall strategy mentioned in the Code of Good Practice on Key Aspects of HIV/AIDS and Employment (see pg 3), as all these elements are linked and exist along a continuum of prevention and care activities. Results of the study will be discussed according to these aspects, which include:

- an understanding and assessment of the impact of HIV/AIDS on the workplace; and
- long and short term measures to deal with and reduce this impact, including:
 - A prevention programme;
 - A wellness programme; and
 - Management strategies to deal with the direct and indirect costs of HIV/AIDS.

5.2.1. Understanding and assessment of the impact of HIV/AIDS on the workplace

It was assumed that the Company has some idea of the impact of HIV/AIDS in the workplace. Although not investigated, the researcher gathered from discussions with the project leader that some measurement of the impact of HIV/AIDS had been performed from absenteeism and medical boarding data (despite there not being a uniform data collection system in place). VCT statistics were unreliable as HIV prevalence is shown to be about 6% despite initial estimates being between 30-50%. Added to this, the Company's HIV prevalence is low when compared to the latest South African demographic data which shows that the prevalence of HIV/AIDS amongst adults (20-64

years of age) is 19.2%.²⁷ Correlating to this, the World Economic Forum conducted an Executive Opinion Survey during 2006 with 1653 sub-Saharan African firms and according to this survey South Africa has HIV infection rates of above 20% amongst employees.²⁸

When asked why the Company has implemented an HIV wellness programme, the project leader said that they had some cases where employees had died of AIDS-related causes and they wanted “insurance for the future to make sure they don’t lose more people”. She mentioned, however, that the Company has not really felt the impact of HIV/AIDS in a serious way at all. She is of the opinion, though, that had the Company not done anything in terms of the management of HIV/AIDS, then they probably would have experienced a more severe impact. It is important to note that many companies have policies in place but have not assessed risk adequately²⁸ and thus cannot respond adequately to the situation despite their genuine concern. Thus adequate and accurate assessment and understanding of the impact of HIV/AIDS in a company is of utmost importance.

5.2.2. Some long and short term measures to deal with the impact of HIV/AIDS

This discussion includes prevention strategies, the wellness programme itself and other management strategies in dealing with HIV/AIDS in the workplace.

5.2.2.1. Prevention programme

The Company has implemented key prevention activities, such as peer education and VCT. The effectiveness of the Company's peer education system was not studied but there were suggestions in the interviews that aspects of the peer education programme were not effective.

Literature suggests making use of 'opinion leaders' in peer education programmes as opposed to 'traditional' peer educators who are usually volunteers.²⁹ Opinion leaders are visible, popular and well-liked members of social networks and are strategically selected for popularity, community respect and influence.²⁹

VCT campaigns have been shown to be only partially effective in ensuring that every employee knows their status.³⁰ Some progressive companies in South Africa have begun to implement *compulsory counselling and voluntary testing* which ensures that every employee is aware of the basics of HIV/AIDS, understands what the test result means, and knows their medical and lifestyle options whether they test positive or negative.³⁰ While VCT uptake was high in the factories studied (average 86%), this is not a given nationally and thus compulsory counselling and voluntary testing might be a worthwhile strategy to explore.

5.2.2.2. Wellness programme

To determine the effect or benefit of the wellness programme on the health and well-being of the HIV-positive employees, the concept 'well-being' was broken down into its

components: *physical*, *mental* and *social* well-being (as discussed in sections 1.3 and 2.4.2.). The themes presented in Chapter 4 will be discussed here according to these components.

For those employees on the wellness programme the trust relationship they have with the OHNPs appeared to be most valuable and most beneficial. Because of this trust relationship, employees experience a sense of support and are more likely to accept their condition. This contributes to a sense of *mental* well-being. Early intervention and thus better management of the condition also occur and there is better compliance to treatment and disease management protocols. Along with this there was a general sentiment that there were benefits in the use of nutritional supplements. Employees reported feeling healthier (e.g. having more energy when using nutritional supplements) and this contributed to a sense of *physical* well-being. A big challenge, though, is to overcome mistrust amongst the general employee population who have not joined the wellness programme and to deal with the ever-present issues relating to the fear of losing their job if found to be HIV-positive as well as denial of the condition. This fear and denial perpetuates the reality of discrimination and stigmatisation, which inevitably negatively affects the *social* well-being of HIV-positive employees.

b) Physical well-being

i) Physical well-being and nutritional supplementation

The promotion of healthy living to people who test positive at the point of early diagnosis has ensured good health outcomes later and contributed to prolonged life expectancy.³⁰

Nutritional supplementation can be seen as part of this health promotion strategy. While this study did not prove empirically that nutritional supplementation made any measurable difference to the employees studied, a perceived benefit was noted.

Good nutrition can be said to consist of two aspects: food and supplementation. In terms of food, people require food security (i.e. reliable access to food) and enough healthy and well-balanced food. However, as much as food in itself can make a massive difference to the quality of life of a person living with HIV/AIDS, this is not enough. Research has shown that the nutritional needs of an HIV-positive person are much more than normal¹⁷ and thus supplementation enters the scenario.

This approach could delay the regression of an HIV-positive person²³, thus delaying the fall in CD4 counts, and thereby delaying the need for ART. Nutritional status and the progression of HIV are strongly interrelated and when ART is necessary, nutrition (in terms of food and supplementation) can be very beneficial in enhancing the efficacy of ART.³¹

Orr and Patient state that ART, as an essential treatment intervention, needs to be placed within the appropriate and necessary social and medical context.³² ART is directed at the extreme end of the HIV illness spectrum (i.e. AIDS – low CD4 count, in the presence of life-threatening opportunistic infections, and a high viral load). Prior to this phase, though, there is an average of 8 years of HIV infection.³² Specific nutritional compounds (e.g. selenium and vitamin A) have been found to be effective in extending this period,

thus delaying the onset of AIDS.³² Nutritional interventions have incorrectly been viewed as *alternatives* for ART treatment, when they are in fact most often directed at the pre-AIDS (and thus pre-ART) stage of HIV infection.³² The debate around the right treatment becomes more reasonable when viewing nutritional supplementation and ART as ‘both-and’ approaches within a continuum of care as opposed to an ‘either-or’ approaches.

ii) Physical well-being and the provision of ART

Regarding the provision of ART, the Company makes use of both the private and public sectors. For those on a medical aid scheme, Aid for AIDS (AfA) appears to be working well. For those not on a medical scheme, the public sector seems to have let them down. Reasons for this could be many, but the most reported problem lay with the public healthcare nurses. Nurses working with people living with HIV/AIDS (PLWHA) have been reported to experience increased levels of stress (due to increased workloads, increased emotional demands, low wages, and fear of accidental HIV transmission, for example) which could manifest in anger and frustration towards patients.³³ It has been recommended in literature that nurses in the public sector receive adequate and regular training and education regarding the biomedical aspects of HIV/AIDS as well as the emotional and psychological needs of PLWHA.³³ In the meantime, the debate continues as to whether companies should be paying for the provision of ART to employees who cannot afford medical scheme benefits while the public healthcare system becomes increasingly overstretched as it deals with growing numbers of AIDS patients and the loss of health care personnel.¹⁰

c) Mental and social well-being

i) Issues of trust, stigmatisation and disclosure

PLWHA face many physical challenges which affect their functioning. Signs and symptoms include fatigue, muscle weakness, neuropathy and decreased sensation, bowel and bladder incontinence, persistent cough, weight loss, decreased range of motion and coordination, limited endurance, cardiac problems and vision loss.³⁴ These impairments lead to challenges in maintaining employment. Along with the physical concerns, PLWHA face cognitive, emotional and social difficulties³⁴ that impact negatively on meaningful participation in all areas of life and particularly work activities. Due to the correlation between a person's ability to perform daily activities with their experience of life satisfaction and general health, an imbalance in work and productive activities may lead to depression, perceived loss of self-control, financial difficulties, social stigma, poor health, reduced independence, and reduced satisfaction with one's quality of life.³⁴

As has been mentioned, the trust relationship occurring between OHNPs and employees on the wellness programme has been a major benefit of the wellness programme and has enabled employees to deal with many of the above-mentioned stressors. However, stigmatisation and discrimination remain certain barriers to any response to HIV/AIDS in the workplace and often prevent employees from joining a disease management programme to begin with.³⁵ This could be ascribed to the complexity and sensitivity of dealing with the HIV/AIDS link to sexuality along with a sense of mistrust that tends to pervade society in terms of this issue.³⁶ While we understand to some degree how complex issues such as mistrust and denial can perpetuate stigmatisation and

discrimination, there are still few, if any, clear and concrete answers as to how we can overcome them.

Other beneficial strategies to address mental and social well-being in the wellness programme could, once again, be the use of employees who have disclosed their HIV status in 'positive living' promotion programmes. This notion fits in well with the Code of Good Practice which states that “mechanisms should be created to encourage openness, acceptance and support for those employers and employees who voluntarily disclose their HIV status within the workplace”.⁸ One way to achieve this is through the development of support groups⁸ for PLWHA, which has been difficult to implement in the Company thus far. Up until this point the employees have mostly preferred to remain anonymous and thus support is on an individual basis between the employee and the OHNP. HIV-positive employees who have openly disclosed their status could be useful in the establishment of support groups.³⁷ However, there would need to be a willingness of the other HIV-positive employees to disclose, albeit only to the other HIV-positive employees in the support group. This would depend from person to person and factory to factory.

ii) Community involvement as a means to affect social well-being

In discussions with the OHNPs, it came up that many of the employees on the wellness programme live in poverty and that this negatively affects these employees' ability to optimally manage their condition (e.g. being malnourished, stress about loss of income, the public health care system letting them down etc.). In terms of affecting change in the

broader context, companies are encouraged to contribute to broader community-based responses as a necessary part of mounting a comprehensive response to the HIV/AIDS epidemic.¹⁰ Thus an *intersectoral approach* of working in partnership with public, private, NGO and community organisations should be part of an HIV/AIDS management strategy. A number of the Company's factories nation-wide have evidence of community-based projects (e.g. recycling projects, renovation of school buildings, etc.) but these projects appear to be driven by the factory managers and thus the extent of community involvement and partnerships vary. Projects are also not necessarily HIV/AIDS-related.

5.2.2.3. Other management strategies

The following management strategy is highlighted in order to better manage HIV/AIDS in the workplace.

a) Monitoring and evaluation

Monitoring and evaluation have a significant role to play in any HIV/AIDS workplace intervention as they assist in determining whether the programme is appropriate, cost effective, useful and meets objectives.¹⁰ It became clear once the data collection began that different record-keeping systems are at place at the various factories studied and this makes it difficult to collect uniform data. This has been reported to be a problem in many other businesses too and apparently few businesses in South Africa keep accurate absenteeism data although a number of companies are putting systems in place.³⁸ In reality, though, data collection remains a slow and painful process and often there are delays in terms of HIV-related data collection because of more pressing priorities for

bosses and companies.³⁸ Nonetheless, systematic information gathering is crucial for a company's ability to plan for and mitigate the effects of HIV.³⁸ In terms of which indicators should be used for monitoring and evaluation, it would make sense to use measures such as CD4 counts and percentages as well as changes in weight over time. This study, though, did not have generalisable results when these indicators were measured due to a small sample size and inconsistent data collection methods by OHNPs and thus it is difficult to say which indicators are the strongest measures of how well an intervention programme is performing.

This chapter discussed the results of the study according to aspects of the suggested overall strategy mentioned in the Code of Good Practice on Key Aspects of HIV/AIDS and Employment. The wellness programme in particular was discussed according to how it was found to benefit HIV-positive employees in terms of physical, mental and social well-being.

CHAPTER 6

6. CONCLUSIONS AND RECOMMENDATIONS

The outcomes of the study, although not empirical or conclusive, do suggest that a holistic approach to the management of HIV/AIDS in the workplace is optimal and that further research in this area is needed. Based on the discussion presented in this document, the following recommendations are made.

In terms of the Company understanding the impact of HIV/AIDS in the workplace it is recommended that the Company continually updates appropriate strategies which include risk profiles and assessment of the direct and indirect costs of HIV/AIDS in order to better understand, assess and respond to the impact of HIV/AIDS in their workplace and sector.^{10,28} More efficient data collection systems should be put in place where uniform data can be collected systematically and thus measurement of the impact/effect/benefit of HIV/AIDS management efforts can be better monitored and evaluated. More effective measurement tools could also be considered, for example viral load testing. Cost versus benefit would need to be considered though.

Research with a larger sample size is necessary to determine which indicators are best to show programme effectiveness. Qualitative aspects, such as feedback from the OHNPs and the HIV-positive employees, should also be included. Ultimately, data should be collected uniformly and diligently at the various factories and it is thus strongly

recommended that an information gathering system be implemented as a matter of urgency within all the Company's factories as an integral part of their strategy in managing HIV/AIDS in the Company.

Strategies to improve VCT could be considered, such as compulsory counselling and voluntary testing. The peer education system should be evaluated to determine whether or not it is working. The more effective use of HIV-positive employees who have disclosed their status as positive-living role models should be explored in peer education programmes and in wellness programmes at all the factories nationwide. This could help to overcome the inherent mistrust that many employees display towards the system and they could provide important support to other HIV-positive employees. Along with this, the existing confidentiality protocol should continue to be strictly adhered to as this promotes the beneficial trust relationship between OHNPs and employees.

In the wellness programme, optimal supplements should be used which have the best effect. These should be well-researched. A question raised was is there a difference in the *type* of nutritional supplement used in an HIV wellness programme i.e. will a supplement product with more vitamins and minerals at higher dosages have a better effect than a supplement with fewer nutrients at lower dosages? It is strongly recommended that an HIV/AIDS nutrition expert be involved in advising what nutritional supplements should be used in the wellness programme. Supplementation is a science in itself and the caveat is that supplementation should be approached carefully and scientifically according to very specific clinical protocols, as would any other physiological intervention. Decisions

regarding which supplements to include in programmes should not be left to occupational health doctors' or OHNPs' discretion.

HIV/AIDS management in the workplace should be seen as an integration of prevention, health promotion, and treatment approaches thus providing support to HIV-positive employees along a continuum of care. It is also helpful to consider how a workplace intervention benefits the physical, mental and social well-being of the employees.

HIV/AIDS management programmes should thus ideally be multi-disciplinary in nature.

The following health professionals could be involved over and above the OHNP and occupational health doctor: occupational therapists (education, counselling, occupational group therapy, job analysis and job adaptations, energy saving principles, functional capacity evaluations, home visits, etc.); social workers (counselling, support groups, access to social grants, etc.); and nutritionists (expert nutritional advice considering nutritional supplementation and food security issues related to poverty).

Companies should investigate how they can get involved in community partnerships in the areas where their employees live in order to contribute to addressing issues related to poverty and HIV. Companies can research what the priorities are in terms of community partnerships and corporate social investment with regard to affecting change in the context of HIV/AIDS? A suggestion for community-based projects could be, for example, to focus on partnering with relevant NGOs and community-based projects to start community vegetable gardens which could assist in the issue of food security.

The public healthcare system is not always effective. This affects the efficacy of roll-out of ART and HIV-related services. Research should be done to investigate causes for ineffectiveness and suggestions should be made to improve services. Furthermore, the provision of ART by the Company to those workers not on medical aid should be considered.

This study is regarded as a first step in describing a particular scenario and further research needs to be performed on the questions arising from this scenario.

All things considered, the big issue in terms of the impact or benefit of any workplace HIV/AIDS management system is if the employees are at work, are able to work effectively, are productive and are thus providing an income for those who are dependent on that income. If this can be achieved and, very importantly if this can be measured, then effective HIV/AIDS management in the workplace can be realised.

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