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FACTORS AFFECTING THE UPTAKE OF VOLUNTARY HIV/AIDS COUNSELLING AND TESTING SERVICES IN THE WORKPLACE

Janet Susan Mundy

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

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ABSTRACT

Although there is some literature evidence of HIV/AIDS voluntary counselling and testing (VCT) research among high-risk groups, a review of the literature failed to identify research into the factors that support or undermine participation amongst workers in medium-sized enterprises. The purpose of this research was to fill this gap by identifying the factors affecting VCT uptake in such workplaces.

An anonymous questionnaire was developed, piloted and applied at a medium-sized manufacturing company, yielding 370 (74%) fully completed responses. Observation and quantitative study results supported analysis of best practice intervention findings obtained via literature review and a qualitative study with workplace VCT experts.

Perception of company support, proximity to people that have, or have died of HIV/AIDS, and VCT confidentiality were among factors found to have influenced uptake, but permanent employment status was the most significant factor associated with test participation.

This research further indicated that workplace HIV/AIDS interventions must ensure that post-VCT benefits are understood, are accessible to all staff and their families, involve active employee representation, and seek to reduce the social and political barriers to HIV/AIDS care and support access if they are to be successful.

DECLARATION

I, Janet Mundy declare that this research report is my own, unaided work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

_____

Janet Susan Mundy

March 2004

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
AIDC	Automotive Industry Development Council
ART	Anti-retroviral treatment
BMJ	British Medical Journal
COSATU	Congress of South African Trade Unions
ELISA	Enzyme-linked immunoassay test for HIV antibodies or antigens
HAART	Highly active anti-retroviral treatment (combination or triple drug therapy)
HI	Human Immunodeficiency
HIV	Human Immunodeficiency Virus
IEC	Information, communication and education intervention
KAPB	Knowledge, attitude, practice and behaviour
LE	Large enterprise/corporation
ME	Medium-sized enterprise
NGO	Non-governmental organisation
PLWHA	People living with HIV/AIDS
Q&A	Question and Answer
SA	Republic of South Africa
SABCOHA	South African Business Coalition on HIV/AIDS
SME	Small and medium-sized enterprises
STD	Sexually transmitted disease
STI	Sexually transmitted infection
UNAIDS	Joint United Nations Programme on HIV/AIDS
VCT	Voluntary counselling and testing

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1 INTRODUCTION

> *Not only is the HIV epidemic dynamic in terms of treatment options, prevention strategies and disease progression, but sexual behaviour, which remains the primary target of AIDS prevention efforts, is deeply embedded in individual desires, social and cultural relationships, and environmental and economic processes. This makes prevention of HIV, enormously complex involving a multiplicity of dimensions.*
> (UNAIDS, 1999: 5).

HIV/AIDS is one of the most pressing problems facing South African society at the start of the 21st century. The epidemic poses a myriad of threats to both its social and economic well-being, and must be addressed by all elements of society including business. This report details research into workplace HIV/AIDS interventions, identifying the complex interplay of factors affecting participation in HIV testing among workers in a medium-sized company.

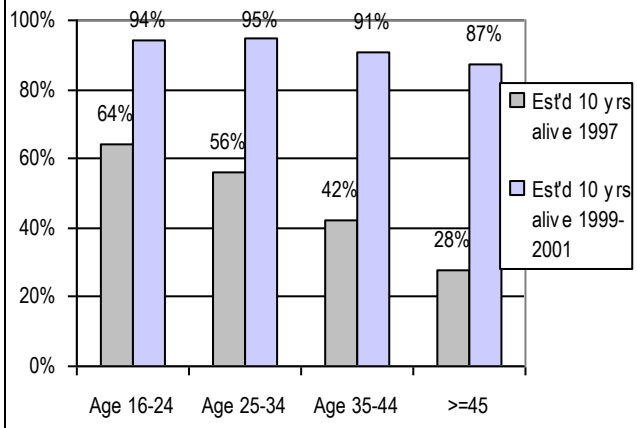
1.1 Purpose of the Study

The purpose of this study is to identify, analyse and interpret factors affecting the uptake of voluntary HIV/AIDS counselling and testing (VCT) in the workplace, in particular, within the medium-sized enterprise environment of business.

1.2 Context of the Study

AIDS (Acquired Immune Deficiency Syndrome) is caused by HIV (Human Immunodeficiency Virus), which destroys cells that control and support the human immune system (notably CD4 cells), slowly weakening the body's ability to fight off other (opportunistic) infections. There is no cure, and without treatment, individuals die on average nine years after infection (UNAIDS, 2002a). However with good nutrition, support, care, and access to antiretroviral treatment (ART), life expectancy can be extended significantly (WHO/ UNAIDS, 2001 and The Lancet, 2003) (Figure 1.1). The provision of ART, however, cannot be considered in isolation from a comprehensive AIDS strategy, including prevention of HI virus

Figure 1.1: Pre-(1997) & Post-ART(1999-2001) Survival Rates, Europe, USA, Canada and Australia



Source: Adapted from The Lancet, 2003

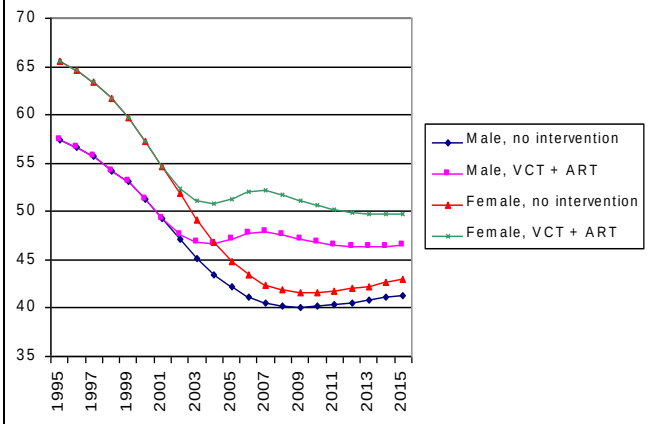
transmission, diagnosis (via HIV testing) of infection, treatment and avoidance of opportunistic infections, and parallel strategies confronting stigma and discrimination. All elements of society (including business) have a moral and economic imperative to participate in and promote such strategies (SABCOHA, 2004).

1.3 HIV/AIDS in South Africa

HIV/AIDS has become the leading cause of death in Sub-Saharan Africa (WHO, 1999), and South Africa (SA) has more HIV-positive citizens than any other country (The Economist, 2003a). Prevalence is estimated at between 4.5 million (HSRC, 2002) and 4.74 million (DOH, 2002) and is greatest in the 15-49 years age group (most sexually active), and women (for physiological reasons) (WHO/UNAIDS, 2002). This level of illness and death amongst people who would normally be in their most economically active years implies massive individual suffering and significant loss to all aspects of society. Savings rates, disposable income and domestic consumption can be expected to fall (Daly, 2000; Barnett & Whiteside, 2002; Dixon, McDonald & Roberts, 2002; Stipp, 2002 and Ahwireng-Obeng & Akussah, 2003).

The Actuarial Society of South Africa (ASSA, 2002) forecasts that without intervention, life expectancy could drop by 17 years for men and 24 years for women between 1995 and 2010 (Figure 1.2). This reduction in life expectancy could be limited to 11 years for men and 16 years for women if VCT and ART were to be made available to (and be accepted by) 90% of affected individuals by 2006.

Figure 1.2: Life expectancy for Males and Females



Source: ASSA, 2002

1.4 What is VCT?

Voluntary Counselling and Testing (VCT) "is the process where individuals *voluntarily* choose to find out their HIV status through testing for antibodies to the

HI virus…[A further] viral load test can be used to determine how much virus is in the body, while a CD4 test will indicate how much damage the virus has done to the body's immune system" (Dickinson, 2003a:63). The nature of the disease and continuing associated social stigma makes it important that counselling is provided in conjunction with testing. Pre-test counselling should ensure that the test is being conducted voluntarily, and communicate the possible personal, medical, social, psychological, legal and ethical implications of a positive test. Post-test counselling should help provide support and access to a continuum of HIV/AIDS care if HIV-positive, and seek to assist those testing HIV-negative to stay negative.

As the human body can become intolerant to ART, this therapy is normally reserved until the body's immune system is about to become too weak to resist life-threatening infections (the most commonly cited treatment protocol initiates ART when the CD4 cell count falls from the normal level of 800-1200 to below 200-350 (Wood, Hogg, Yipp, Harrigan, O'Shaughnessy & Montaner, 2003)). Until this point, intervention normally consists of counselling and support, life-style guidance aimed at managing the positive status to prolong life and wellness (including avoiding re-infection), and the treatment of opportunistic infections.

1.5 Legal and Ethical Implications of HIV Testing

Section 7 (2) of the 1998 Employment Equity Act prohibits HIV testing that is compulsory and intended to discriminate against employees (AIDS Law Project, 2003). No one can be compelled to take a HIV test at anytime pre- or during employment, unless the Labour Court has given the employer permission. The Act does not however prohibit anonymous unlinked HIV testing conducted for the purpose of a prevalence survey, or VCT (including workplace VCT). Nonetheless the stigma associated with testing as a tool of discrimination, together with ethical and confidentiality issues, make handling HIV/AIDS at work more complicated than other life threatening diseases (Welch, 1998).

1.6 The Problem

Research has identified many reasons why VCT is an important element of HIV/AIDS prevention and care programmes, and why developing nations should make VCT accessible to their populations (UNAIDS, 1998). The 1997 HIV/AIDS

Global Strategies Conference identified VCT as an important tool for communication and education, and the primary access point for other interventions (Rogers, 1997) including clinical and psychological care and support.

Much of the published research into factors affecting VCT uptake in Sub-Saharan Africa is 'exploratory' and has primarily focussed on high-risk groups, including sex workers, youth, pregnant women and men having sex with men (De Zoysa, Phillips, Kamenga, O'Reilly, Sweat & White, 1995; Temmerman, Ndinya-Achola & Piot, 1996; Baggaley, Kelly, Weinrich & Kayawe, 1998; Coates, Sangiwa, Balmer, Gregorich & Kamenga, 1998; Kayawe, 1998; loveLife, 2000; Maman, Mbwambo, Hogan, Kilonzo & Sweat, 2001; Pool, Nyanzi & Whitworth, 2001; UNAIDS 2001a; WHO/UNAIDS, 2001; Basset, 2002 and UNAIDS, 2002a).

Business enterprises have historically not perceived HIV/AIDS as a threat to operations. Few have acknowledged the potential threat to markets, and HIV/AIDS prevention and care has tended to be perceived as a medical rather than a business issue (Harrison, Smit & Myer, 2000; Barnett & Whiteside, 2002 and Campbell, 2003). Business has therefore been slow to respond to HIV/AIDS issues and to contribute to HIV/AIDS prevention (UNAIDS, 2001b; Ahwireng-Obeng & Akussah, 2003 and Dickinson, forthcoming). Whilst some headway has now been made in developing best practice amongst a few large corporations, SMEs have generally failed to follow this lead (UNAIDS, 2001b; Veysey, 2002 and SABCOHA, 2004). Even where the challenge of AIDS and the essential need for urgent business response has been recognised, SMEs tend to lack the experience to implement VCT interventions successfully (Fraser, Grant, Mwanza & Naidoo, 2002).

The continuing development of test technologies, falling cost of treatment, increasing availability of support services, and more positive governmental leadership (perceived to be key contributors to breaking down barriers to VCT), are now leading to the development of an infrastructure to support SMEs in the roll out of VCT in the workplace. Increasing media coverage of the role of business in HIV/AIDS prevention and care, and changes to corporate governance legislation further support the initiative. There is, however, a danger that the increased positive pressure on business to provide workplace VCT could lead companies to

invest in VCT service provision without due consideration of factors affecting uptake and as a result failing to achieve the potential benefits.

A review of all open access internet HIV/AIDS conference abstracts between 1998 and September 2003, and of HIV/AIDS related open access internet journal articles published between 1998 and September 2003 revealed limited peer-reviewed research into the factors that specifically affect employee participation in VCT. Only two papers were found on workforce attitudes toward VCT in South Africa (Dallimaore, Stewart, Pulerwitz, Esu-Williams & Mgilane, 2002 and Seitz, Staber & Jonczyk, 2002) with this research limited to large enterprise organisations. The researcher therefore concludes that there is an urgent need for research into factors affecting VCT uptake among the workforce of medium-sized (100-500 employees) manufacturing operations.

1.7 Delimitations and Limitations

The researcher carried out a preliminary investigation which showed that most companies were reluctant to allow research access to employees due to the sensitive and confidential nature of the subject. One medium-sized East Rand (now Ekurhuleni) component manufacturer, having completed the information and education phase of their HIV/AIDS prevention and care programme, did however agree to allow research access to observe their second stage (pre-VCT information, education and communication (IEC) intervention) implementation and to subsequently survey all staff immediately following the workplace VCT phase of the intervention.

The researcher has a personal relationship with a member of senior management at the company surveyed and therefore no staff interviews were conducted other than those with the members of the HIV/AIDS committee. The quantitative element of this research is limited to the opinions (as collected via self-administered anonymous questionnaire) of all employees of the company surveyed. This method was chosen for reasons of confidentiality, statistical validity, subject sensitivity and because of the necessarily personal/intrusive nature of some questions. The qualitative element of this research is limited to the opinions and perceptions of designers, implementers and support associations of workplace VCT programmes, principally within Gauteng, South Africa.

The intention of the research is to identify significant factors affecting participation in HIV testing among workforce populations in medium-sized companies. It may not, however, be possible to generalise such factors across all industries throughout South Africa. The inevitable consequence of the large number of potential influencing factors, the small numbers of participants in this study (in comparison to standard clinical trials), together with the need to maintain confidentiality of participants, hampers this and all other HIV/AIDS research, particularly with regard to longitudinal studies.

The ability to replicate the research will inevitably be affected negatively by the precept that "VCT is not a uniform intervention. VCT should be flexible and able to adapt to the needs of the population it serves. It is unlikely that one model will be suitable for all populations" (WHO/UNAIDS, 2001a:1).

Nevertheless, as identified above, the lack of available research guidance in this field, together with the urgency of the need to expand workplace VCT services, reduces the significance of these limitations.

1.8 Significance of the Study

The results of this study in identifying the significant factors affecting uptake will assist those seeking to maximise uptake of workplace VCT services, i.e. business stakeholders, VCT service providers, HIV/AIDS information and education service providers, and disease management practitioners, and to improve understanding of the challenges associated with the design and implementation of successful workplace VCT programmes.

The WHO/UNAIDS HIV/AIDS Technical Review (2001:1) stated:

> Documentation of experiences and lessons learned via successful VCT approaches is urgently required, and would be useful for assisting countries that are considering the introduction and expansion of VCT services, or increasing the coverage and range of services offered. Documentation of effectiveness will also facilitate the procurement of funds for the expansion of these services. This is particularly important in high prevalence countries where access to the general public is recommended.

1.9 Assumptions

The following assumptions were made in this study:

- That HIV/AIDS will continue to be the primary health threat to a productive workforce in South Africa, and that a cure for HIV/AIDS will not be available in the near future making the need for prevention, treatment and support programmes in the workplace a necessity.
- That employees will continue to have legal protection against compulsory testing, HIV/AIDS discrimination and breach of confidentiality in the workplace.
- That participants' views will be representative of the sectors they are drawn from and that they are sufficiently knowledgeable with respect to workplace VCT to contribute to the study.
- That although the experiences of VCT experts in implementing workplace programmes differ this will not affect or negate the overall validity of the study.

2 LITERATURE REVIEW

This chapter presents the findings of the literature review. It provides a background summary to HIV/AIDS in SA, and the response of business to the pandemic. It also identifies the importance of VCT in HIV/AIDS prevention and care, and the role of the workplace in its provision. This leads into a review of factors that may potentially affect the uptake of VCT in the workplace. The area of research and research propositions are defined. Search methodology is detailed in Appendix C.

2.1 Background to HIV/AIDS in South Africa

The HIV/AIDS pandemic is one of the leading causes of death worldwide and the leading cause of death in Sub-Saharan Africa (WHO, 1999 and Stover, Walker, Garnett, Salomon, Stanecki & Ghys, 2002). South Africa (SA) has more HIV-positive citizens than any other country (The Economist, 2003a).

HIV/AIDS primarily affects the most economically active members of the population leading to a reduction in savings rates and disposable incomes, and a reduction in domestic consumption (Daly, 2000; Barnett & Whiteside, 2002; Dixon *et al*, 2002; Stipp, 2002 and Ahwireng-Obeng & Akussah, 2003). By 2010 it is estimated that South Africa's per capita GDP will be 8 percent lower and per capita consumption 12 percent lower than it would have been in the absence of HIV/AIDS (Arndt & Lewis, 2001).

The United Nations Development Report (2002) estimated an average life expectancy decline of 19 years (from 63 to 44) between 2000 and 2005 as a direct effect of the pandemic. This resulted in SA falling 19 places to 107th (of 135 countries) in the Human Development Index between 1990 and 2000, eroding the steady gains made since 1975.

Efforts made early in the growth of an epidemic have a much greater effect in reducing the total size of the epidemic than similar efforts made late during the course of its development (Stover *et al*, 2002). In 1990, around one percent of adults in both SA and Thailand were HIV-positive. "Tackling the problem head on, Thailand has managed to keep the rate roughly at the same level. By 2001, South Africa's…had sky-rocketed" (The Economist, 2003b:61). Nevertheless, a study simulating the effect of implementing a comprehensive prevention programme as

late as 2005 still estimates that 12.2 million new infections could be averted in Sub-Saharan Africa alone by 2010. A further delay of three years would reduce this number by 50% (Stover *et al*, 2002).

Many factors have been identified as contributing to the failure to halt the spread of the HI virus, including:

- The sexual nature of the transmission mode: Sexual behaviour is deeply embedded in individual desires, social and cultural relationships, and environmental and economic processes (UNAIDS, 1999; Barnett & Whiteside, 2002 and Campbell, 2003);
- Prolonged asymptomatic period: The HI virus can exist asymptomatically, but nevertheless in infectious mode for six to eight years or more (UNAIDS, 2002a and WHO/UNAIDS, 2002);
- Disease progression: The HI virus acts by destroying the immune system to the point where the body is unable to fight off other infections – thereby disguising cause of death (UNAIDS, 2002a and WHO/UNAIDS, 2002a);
- Lack of access to affordable treatment, particularly anti-retroviral treatment (ART): Until 2003 the cost of ART treatment was so high as to be out of reach of most South Africans, even those with medical insurance cover, thereby limiting access primarily to employees of the few companies that operated disease management schemes. Political negotiations leading to a wider availability of generic medicines has lowered the cost (estimated at around R900 per person per month in September 2003) (Business Day, 2003), but some medical insurances remain inadequate to fund even this level of provision or to treat the higher level of 'other infections' associated with a suppressed immune system (Baggaley *et al*, 1998; Tallis, 1997; WHO/UNAIDS, 2001 and Kelly, 2002). The long-delayed roll out of ART provision via public health services was not announced until November 2003. Whilst the Department of Health aimed to establish one ART administration site in every district by the end of 2004, it was anticipated that establishing one site in every local municipality would take until the end of 2009 (DOH, 2004);
- Stigma: The stigma associated with perception of HIV/AIDS as an untreatable, incurable disease has led to lack of disclosure and presentation for treatment

(UNAIDS, 1999; Maman *et al*, 2001; Barnett & Whiteside, 2002; Dallimaore *et al*, 2002; HSRC, 2002; Seitz *et al*, 2002 and Campbell, 2003);

- The timing of the spread of the disease: “Between 1990 and 1995, while the apartheid regime and the liberation movements were locked in intense negotiations that absorbed all their attention…[AIDS] struck a set of social conditions that caused it to spread with explosive ferocity” (Sparks, 2003:284);
- The low status of women and high rates of sexual violence against women in South African society (DOH, 2000);
- A lack of political resolve leading to a lack of guidance: Concerns over cost of treatment, perceived exploitation of need and toxicity, coupled with investigation of now largely discredited (but still widely reported) revisionist theories has caused confusion - “If you don’t believe that AIDS is infectious but merely a deficiency disease, you will not practise safe sex. And then the disease will spread exponentially” (Sparks, 2003:291).

2.2 Workplace Response to HIV/AIDS

Whilst there have been numerous warnings about the potential impact of HIV/AIDS on business operations and profits, most companies in developing countries have been slow to respond to the pandemic (UNAIDS, 2001b, Dickinson, forthcoming).

Labour organisations have also been slow to respond. It was not until 2000 that a Nedlac/Department of Labour alliance issued a *Code of Good Practice on Key Aspects of HIV/AIDS and Employment* (Nedlac, 2000), and as late as June 2001 before the International Labour Organization adopted a Code of Practice on HIV/AIDS in the workplace. These Codes of Practice, which deal with protection of worker’s rights and guidance on care and support, aim to help prevent the spread of HIV/AIDS and lessen its impact (UNAIDS, 2002a). They encourage employers to offer information, HIV/AIDS voluntary counselling and testing (VCT), and where possible, cheaper medication (UNAIDS, 2002b).

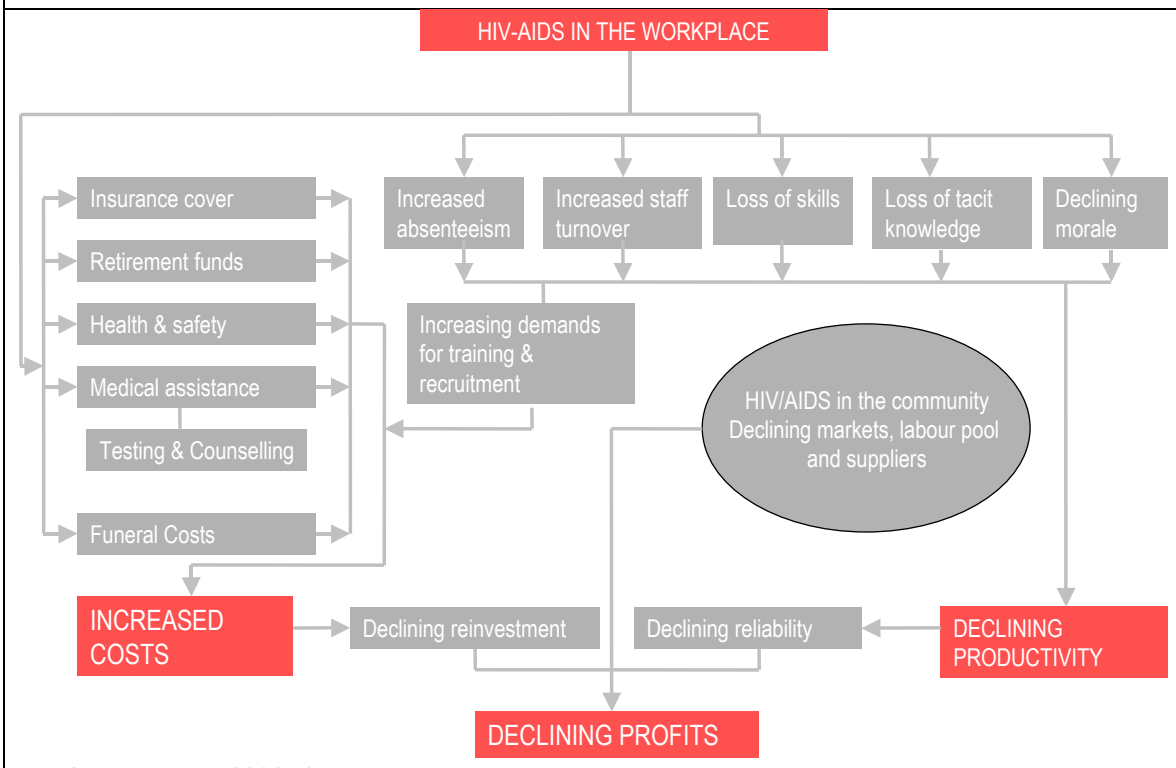
A UNAIDS study (2001b:114) of the business response to HIV/AIDS in developing countries concluded that only a small proportion of companies had implemented and sustained prevention programmes and that those that had, had not been strong advocates for similar efforts amongst their peers. The report states:

> In the early 1990s, most business managers felt that HIV/AIDS would pass them by or that they could cope by rapidly replacing workers who became ill or died…The vast majority avoided the issue altogether by insisting that the epidemic was a health, not a business problem. By the mid-1990s …[companies recognised] that the epidemic threatened the welfare of their employees and thus affected profits…[and] the quality of operations and general productivity were undermined by absenteeism and increases in staff turnover.

The report also noted that whilst "more work is necessary… to demonstrate the cost-effectiveness of prevention efforts…[peer education and condom distribution] programmes that were 50% effective, yielded benefits five times greater than costs" (UNAIDS, 2001b:117). It also identified the need for "NGOs, unions and government to build partnerships with the commercial private sector for HIV/AIDS prevention" (UNAIDS, 2001b:121).

The HIV/AIDS epidemic, and public response to it, has now reached a stage where no business can just hope it passes them by. Not only are markets affected, but also HIV/AIDS is increasingly affecting productivity and costs, resulting in declining profitability (Figure 2.1) (Roberts, Raus & Emery, 1996; Daly, 2000; Barnett & Whiteside, 2002; Dixon *et al*, 2002, Stipp, 2002; Ahwireng-Obeng & Akussah, 2003 and Dickinson, forthcoming).

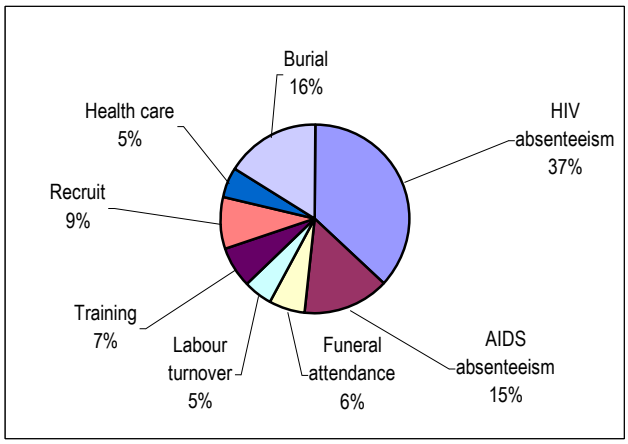
Figure 2.1: Impact of HIV/AIDS on a Company



Source: Daly, 2000: 15

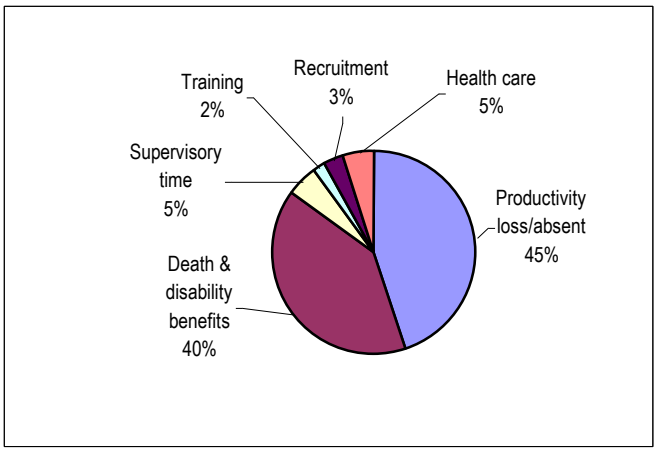
A study of African businesses in the early 1990s found that HIV- and AIDS-related absenteeism accounted for 52% of increased labour costs (Figure 2.2a) (Roberts *et al*, 1996). A more recent study by Daimler Chrysler SA assessed absenteeism and productivity losses at 45% and death and disability benefits at 40% of the total increased costs due to HIV/AIDS. This study estimated this annual increase at around R2 100 per employee in 2001 (Figure 2.2b) (Seitz *et al*, 2002).

Fig 2.2a: Distribution of Increased Labour Costs due to HIV/AIDS by Category, African Companies



Source: Roberts *et al,* 1996

Fig 2.2b: Distribution of Increased Labour Costs due to HIV/AIDS by Category, DCSA 2002



Source: Seitz *et al*, 2002

The well publicised and deeply damaging governmental delay in providing positive leadership shielded business' slow, erratic and partial response to HIV/AIDS (Dickinson, forthcoming). The fact that the South African Government is at last portraying a more "rational approach" (Kindra, 2002:5) "is likely the most important factor in achieving a better response to the epidemic" (Seitz *et al*, 2002).

Business can no longer hide behind governmental inaction. The King Report on Corporate Governance for South Africa 2002 identified four key areas relevant to corporate governance and HIV/AIDS: risk management, legal compliance, disclosure and social responsibility or sustainability (Stipp, 2002). Such governance pressure is expected to continue to increase. The cost of supporting HIV/AIDS sufferers is such, that government may seek to split the burden between households, businesses and government (Ford, Lewis & Bates, 2002). This will further drive business involvement.

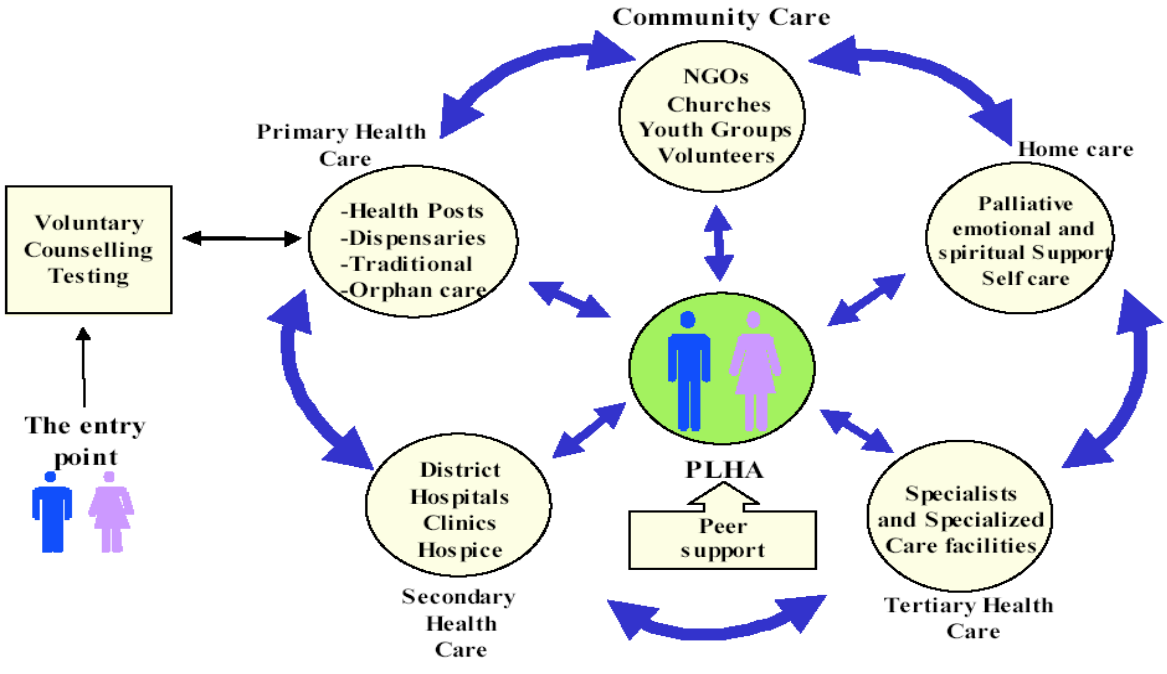
There is ample evidence to justify a comprehensive approach to managing HIV/AIDS in the workplace, including the provision of VCT. Benefits include reduced absenteeism and retraining costs, increased productivity and morale and less reliance on employee benefits (Daly, 2000; Barnett & Whiteside, 2002; Dixon

et al, 2002 and Stipp, 2002). These factors, together with growing media and NGO pressure, should drive businesses to better play their part. Yet small and medium-sized enterprises (SME) continue to lag behind large corporations with regard to HIV/AIDS prevention and care. A SABCOHA study (2004) noted that company size determined the extent to which employers have responded to the HIV/AIDS pandemic, with SMEs (less than 500 employees) trailing large corporations, particularly regarding risk assessment (7% vs. 52%), monitoring and reporting (17% vs. 48%), and support for infected employees (42% vs. 65%). The only category in which the gap was closing was in HIV/AIDS awareness/education (72% vs. 86%). The report concluded that few SMEs were aware of the need for VCT. A study of 120 SMEs in 2001-2002 showed the majority (90%) already regarded dealing with HIV/AIDS as their responsibility, but had limited understanding of what to do. The study concluded that SMEs needed help in developing an appropriate workplace response focusing on behavioural change, coupled with on-the-ground support from both public and private sectors (Fraser *et al*, 2002).

2.3 The Importance of VCT Within Prevention and Care Programmes

The Global Strategies Conference (Rogers, 1997) identified VCT as the primary access point to clinical care and psychological support (Figure 2.3).

Figure 2.3: VCT – The Entry Point to the HIV/AIDS Continuum of Care



Source: WHO/UNAIDS, (2000).

To enable access to the HIV/AIDS care continuum however, personal and societal barriers to VCT uptake must first be addressed. Research has identified many reasons why VCT can be an important element of HIV/AIDS prevention and care provided interventions are devised in a way that address such barriers successfully (Rogers, 1997; UNAIDS, 1998; Greenwald, 2001, Henderson, 2002 and HSRC, 2002). The effects of information and education initiatives can be transitory - eroded over time by contradictory information and pressures. By contrast, knowledge that leads to action, such as VCT participation, promotes risk reduction through increasing perception of risk, self-efficacy and personal skills, and through reinforcing social norms of responsibility. De Zoysa *et al* (1995:15) state:

> Ethically, people have a right to know their serostatus in order to protect themselves and others. And knowing their own serostatus and the options can motivate people to change higher risk behaviours. In addition, [VCT] may have an important social impact through people knowing their serostatus sharing it with others and laying the groundwork for changes in social norms.

A randomised control trial of VCT across Kenya, Tanzania and Trinidad has shown that VCT can induce behavioural change, particularly with regard to prevalence of unprotected sex by women with non-primary partners (Coates *et al*, 1998). A UNAIDS summary of VCT also concluded that it improved acceptance and coping strategies, easing anxiety about HIV infection, increased condom use, and reduced STI and HIV transmission (Kayawe, 1998). A study in Tanzania also showed that individuals who were subject to VCT interventions showed significantly reduced risk behaviour than those receiving only health information. This finding was also supported by reduced incidence of sexually transmitted infection (STI) in this group, providing evidence of actual (not just reported) behavioural change (UNAIDS, 2001a).

2.4 The Role of Business in VCT Provision

While much has been done by NGOs to target HIV/AIDS prevention and VCT among high-risk groups such as young people and sex workers, much is still to be done to promote access to HIV/AIDS prevention (including VCT), and to provide support for those already infected. Businesses are ideally placed to provide effective HIV/AIDS interventions. Most workplaces offer a stable environment that could be conducive to the effective ongoing provision of information, education,

and skills development, as well as providing an opportunity to incorporate community and societal change, supporting enabling, and addressing restraining community factors affecting the ability of the individual to maintain control of their health. It is therefore essential to the economic health of the country (as well as a moral imperative) that business plays a leading role in HIV/AIDS prevention and care, and this must extend beyond large corporations to SMEs (SABCOHA, 2004) if the timely approach envisaged by Stover *et al* (2002) is to stand any chance of saving those millions of lives.

Workplace VCT programmes are acknowledged to be particularly important in high-prevalence areas or industries (most notably amongst migrant labourers, especially in the mining, transport and leisure industries (UNAIDS, 2001b)). Workplace VCT programme initiatives tend to have been developed in these industries by large corporations, "who generally find it easy to set up HIV/AIDS programmes once they have decided to commit sufficient resources" (UNAIDS, 2002b: 110). Even so, interventions have tended to be determined by "the ease with which programme aspects could be implemented (rather than their effectiveness)" (Dickinson, 2003b) and only 58% of the top 50 SA companies surveyed in 2002-3 fully included VCT in their policy statement on HIV/AIDS, with a further 19% reporting partial inclusion (Dickinson & Innes, forthcoming).

Some companies have initiated anonymous prevalence surveys in the workplace. Whilst such interventions assist in risk management and assessing the feasibility of providing ART treatment (UNAIDS, 2002b), they do not generate the benefits associated with individuals knowing their status and being able to act on it.

2.5 Factors Potentially Affecting VCT Uptake

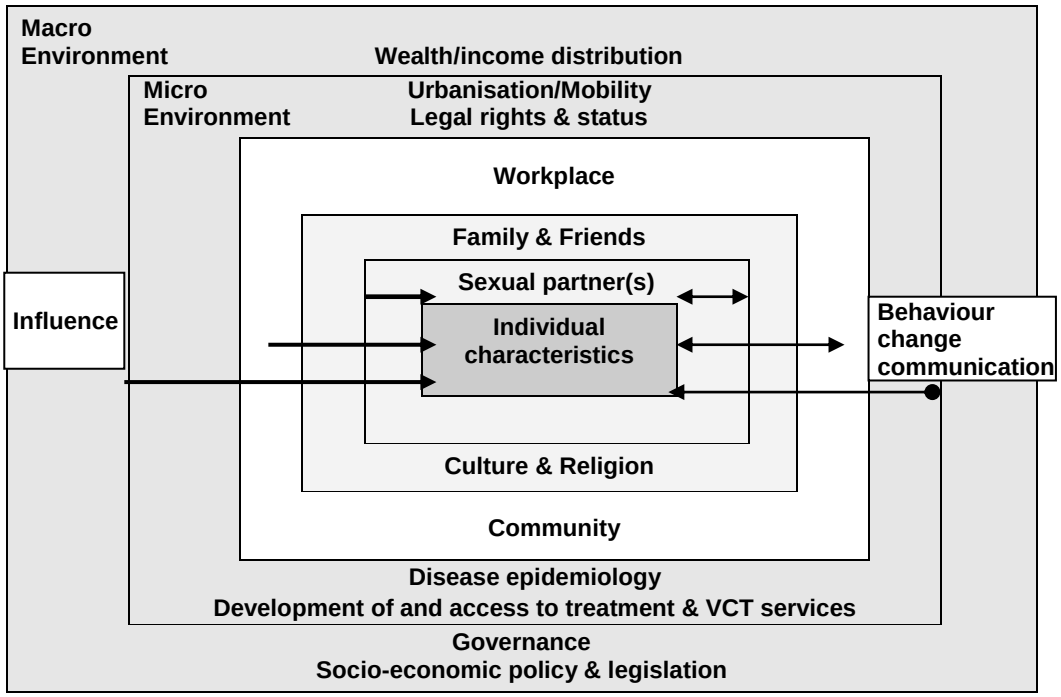
Studies investigating the characteristics of successful HIV/AIDS interventions (primarily amongst high-risk populations) have identified key elements associated with behavioural change resulting in risk reduction. These elements can be grouped in three primary categories; demographics, beliefs and external influences (although recognising that these categories overlap and certainly influence each other as shown in Figure 2.4).

Demographics include innate characteristics such as age, gender and race, and individual socio-economic characteristics such as educational attainment, employment status and income.

Beliefs are behavioural characteristics and are subject to external influences. They include culture, religion and belief in the medical model of HIV/AIDS.

External influences are the broader socio-political and economic factors such as government policy and legislation, and workplace policy and practices.

Figure 2.4: Context of VCT – Potential Influencing Factors



Source: Adapted from Barnett & Whiteside, 2003:78

2.5.1 Demographic factors affecting HIV test participation

1. Age and education

Age and educational attainment factors have been found to influence risk reduction behaviours including VCT participation (Fylkesnes, Haworth, Rosenvord & Mushimwa-Kwapa, 1999; Gillies, 1999 and HSRC, 2002). A nationwide study of sexually active South Africans in 2002 found that adults aged 25-49 and those who were highly educated were most likely to have undertaken VCT (HSRC, 2002).

2. Gender

High-risk group studies have been predominantly conducted amongst single-sex groups (pregnant women, men who have sex with men). The effect of gender on VCT uptake is therefore unclear.

3. Race

Given South Africa's apartheid past, it is "essential that HIV/AIDS programmes are not perceived in any way as an instrument of racial discrimination or moral depreciation" (Seitz *et al*, 2002:10). Perhaps for this reason, few studies include race - or indeed, other sensitive questions regarding the influence of religion, culture or locality. Those that have differentiated responses according to racial and cultural differences have found that these can affect participation in VCT.

The Carltonville mining community HIV/AIDS prevention study noted that reluctance to provide blood samples was highest (almost 100%) amongst Shangaan-speaking peoples (CSIR, 2000). Reluctance to provide blood samples is likely to affect VCT uptake. The HSRC study (2002) also identified differences in HIV prevalence among adults (15-49 years) by race.

4. Socio-economic status

Socio-economic status (linked with access to support and care services) has been found to be associated with participation in VCT (Baggaley *et al*, 1998; Fylkesnes *et al,* 1999; Gillies, 1999 and HSRC, 2002).

2.5.2 Belief factors affecting HIV test participation

1. Knowledge, attitudes, practices and behaviours

Research has shown that increasing an individual's knowledge of HIV and AIDS provides reinforcement and support for sustaining risk reduction. Personal knowledge, attitudes, practices and behaviours (KAPB) may therefore be associated with HIV test participation (UNAIDS, 2003).

2. Cultural influences

"For individual level [HIV/AIDS] interventions to be successful, context-specific information and skills are critical" (UNAIDS, 1999:17). Interventions must assist in developing negotiation and decision-making skills, address gender imbalances, and locate HIV/AIDS prevention in the context of people's lives (Harrison *et al,* 2000). VCT has been identified as an important element of that process, but only as an element of a comprehensive approach to HIV/AIDS prevention and care, and in order to be successful, all such interventions must respect and reflect the rights, responsibilities and needs of the individual, the socio-cultural and political contexts of people's lives, as well as the stage of the epidemic (UNAIDS, 1999).

The health care of any culture includes patterns of belief about the causes of illness, and patterns governing choice and evaluation. Workplace interventions must seek to incorporate enabling - and reduce restraining - community contexts within which people negotiate their social and sexual lives and identities (Harrison *et al*, 2000; Barnett & Whiteside, 2002 and Campbell, 2003). For example, traditional healers are the first contact between communities and health care delivery systems for the majority of South Africans, and by including them in IEC, workplace interventions could gain reinforcing support for their intervention whilst enable them to protect themselves and their clients (Chipfakacha, 1997).

3. Proximity to HIV/AIDS and perceived risk

Proximity (knowing someone who has or has had HIV/AIDS), and high perceived risk have been found to be associated with increased VCT uptake (Maman, *et al*, 2001).

4. Presence of influencing sexual partner(s)

The ability to discuss risk factors and HIV/AIDS with partners has been found to be associated with increased VCT uptake (Maman, *et al*, 2001). Negative attitudes by sexual partners, and a fear of rejection if tested positive, have been identified as barriers to VCT, particularly amongst women in long-term relationships (Temmerman *et al*, 1996; Baggaley *et al*, 1998 and Maman *et al*, 2001).

2.5.3 External factors affecting HIV test participation

1. Social stigma and discrimination

Many factors have combined to create a level of “stigma and terror that surrounds the disease in the public imagination, [that] people live in fear of rejection by their communities and formal health services“ (Campbell, 2003:5). Stigma and fear have created major barriers for all aspects of HIV/AIDS prevention and care. Seitz *et al* (2002) note that despite an estimated HIV-positive population of over 400 at Daimler Chrysler SA, and 137 employees utilising independent disease management services, “not a single employee has admitted to being HIV-positive” (Seitz *et al,* 2002:9). Similarly, despite an estimated HIV-positive population of 2000 at ‘Deco’ (a primarily mining organisation of 25 000 employees) only 200 were registered on the company funded HIV/AIDS disease management

programme and only one or two employees had disclosed their HIV-positive status within the workplace (Dickinson, 2003b).

A study by the Centre for Actuarial Research (2003) reported that only 5% of medical aid beneficiaries (an estimated 22 500 of 450 000 infected) were making use of workplace HIV/AIDS wellness management programmes, suggesting that confidentiality fears extend way beyond fear of confirmation of serostatus. The process of accessing medical insurance may exacerbate this; because most schemes are family based there may be confidentiality concerns regarding accessibility of test and treatment data by other family members. Employees may also perceive workplace based medical insurance data to be accessible by their employers.

Stigma exists at every level of society, including within the workplace, and VCT services are likely to be under-utilised wherever the perceived benefits of confirmation of status are outweighed by perceived threats (Baggaley *et al*, 1998 and Kelly, 2002). The HSRC study identified the continuing social stigma of HIV/AIDS, and concerns relating to disclosure to partners, family members and communities, as a critical barrier to VCT and recommends further research in this area (HSRC, 2002). Dickinson, (2003b:39) notes that workplaces can provide a protective microcosm supporting "openness and disclosure of individuals' HIV status… [only] if concrete steps to support this are implemented in tandem to programmes that simply encourage this as a 'good thing'", and concludes that workplace policy and programmes can only shift behaviour effectively through "continuous debate and discussion within employee groups…[through] mobilisation of grassroots structures…that engage fellow employees using their own languages, understandings and group identities" (Dickinson 2003b: 46).

2. <u>VCT services</u>

a) *Perceived quality, professionalism and confidentiality*

"Quality of counselling is a key variable in predicting the impact of the intervention" (UNAIDS, 1999:17). "Poor quality VCT services have been to be found to be a considerable problem in South Africa" (Viljoen, 1998:1), resulting in a high number of participants not returning for their test result. Formally-trained nursing counsellors have been found to generate a higher level of trust, confidence and belief in the test result than trained lay-counsellors (Ginwalla, Grant, Day, Dlova,

Macintyre & Baggaley, 2002). As long as the stigma surrounding HIV/AIDS persists the perceived and actual level of confidentiality associated with services supporting HIV/AIDS treatment and care are likely be a critical factor affecting the uptake of VCT services.

b) *Test technology*

"Individuals prefer [HIV/AIDS] tests that are highly accurate, timely, non-invasive and anonymous" (Phillips, 2003:10). A Ugandan evaluation of 'rapid' HIV tests showed that return rates (the percentage of participants returning to collect their result) increased by 20% when the delay was reduced to one day (French, 1997).

3. External influences within the workplace

a) *Supportive work environment*

As many employees who are encouraged to test fear discrimination, employers must go to great lengths to establish an environment in which employees perceive the benefit of knowing their serostatus early in the progression of the disease. The enormity of this task should not be underestimated, particularly given the acknowledged failure of traditional 'top-down' and clinical-medical interventions to halt the spread of the epidemic (Harrison *et al,* 2000; Barnett & Whiteside 2002 and Campbell, 2003), and given the historically adversarial nature of labour relations in South Africa.

A study in Zimbabwe concluded that knowing a colleague had been tested (ie. the development of a supportive workplace environment including erosion of stigma to such a level that participation in VCT could be disclosed) was a key factor in encouraging HIV test participation for 150 of 203 (74%) workers surveyed (Dauya, Manghini, Matambo, Mason, Chandiwana & Butterworth, 2004).

A workplace survey of Eskom workers in KwaZulu-Natal identified fear of stigma, (particularly from co-workers), that would result in social isolation as potentially key contributors to under-utilisation of workplace VCT services. The researchers concluded that workplace HIV/AIDS policies must be designed to eliminate discrimination, and address social isolation in the workplace in order to reduce stigma and develop a more conducive environment for disclosure and the promotion of service utilisation (Dallimaore *et al*, 2002).

b) *Stakeholder involvement*

Support organisations such as SABCOHA, The Global Business Coalition's 'business fights aids' initiative, the World Economic Forum's Global Health Initiative, and the Automotive Industry Development Council (AIDC), stress the importance of 'bottom-up' and stakeholder-inclusive approaches (in addition to the usual 'top-down' commitment required for all major projects).

They recommend the inclusion of representatives from all stakeholder groups in any HIV/AIDS initiative as a critical success component in both the development of the necessary trust and confidence, and in the erosion of stigma. Seitz *et al* (2002:7) noted the task force at Daimler Chrysler SA (DCSA) (a large corporation with 4,440 employees) comprised:

> almost 20 individuals, representing all constituents of the company, namely trade union, staff committee, medical services, management and [support NGO]. Given its size, the establishment and maintenance of the committee represents a major organizational effort…[As it starts to include] community and advocacy aspects of the project, the steering structures appear to call for a more encompassing or a more differentiated approach, in order to include also external constituents.

Seitz *et al* (2002), in noting the importance of union involvement, add that the union "appears to be closer to DCSA than to the national government with respect to the HIV/AIDS issue. But … there is always the risk that the co-operation …becomes overwhelmed by conflicts over other issues" (Seitz et al, 2002: 9).

Campbell's (2003) study of a well-funded HIV/AIDS prevention initiative in the 'Summertown' mining community also noted the difficulty of maintaining stakeholder commitment, despite 'bottom-up' initiatives and the high profile nature of the project, stating (152):

> Every stakeholder group had been involved …and each had made a commitment to participation in the collaborative process…However, rather than working together to develop new frameworks of understanding and action, they simply continued to implement the approaches they had used before.

Campbell particularly criticised the role of 'external experts' and 'outsiders' in eroding local stakeholder ownership and participation, and concluded that this outside interference, coupled with the fact that the "trade union played even less of a role in the project than the mining houses" (Campbell, 2003: 155) resulted directly in failure. Employee representation and union support would therefore

appear to be a critical factor in reducing stigma and concerns relating to confidentiality in increasing support for workplace VCT. COSATU (Congress of South African Trade Unions) has expressed general support for workplace VCT (COSATU, 2003), but as noted above, union involvement and support must be managed positively and inclusively in an effort to divorce VCT initiatives from conflicts over other issues for support to be effective at a local level.

2.6 Area of Research

Although there is some literature evidence of factors affecting VCT uptake amongst the general population (and especially amongst high risk groups), a review of HIV/AIDS journals and abstracts of HIV/AIDS conferences between January 1998 and September 2003 accessible via open internet search, failed to identify any post-VCT research which investigated the factors that had supported, undermined, or reinforced resistance to VCT participation specifically amongst workers in medium-sized enterprises.

There may be many reasons why people choose not to participate in workplace VCT (even if it is provided confidentially and without cost). For example it may be because they dispute the medical model of the disease; or because they fear confirmation of HIV-positive status for any number of reasons including fear of discrimination, stigma, isolation, treatment and associated cost. Non-participation excludes individuals from informed decision-making, and denies those that are infected the benefit of early access to the continuum of care. The lack of research hampers the development of effective workplace HIV/AIDS prevention and care programmes involving VCT.

The literature review provides an insight into the factors that have been found to affect VCT uptake that might also affect workplace VCT uptake. It identifies factors affecting HIV/AIDS workplace programmes that might also specifically affect workplace VCT uptake. This study investigates and analyses why employees choose to participate or not to participate in HIV testing and workplace VCT programmes in order to assist in the design of future workplace VCT programmes to maximise participation.

2.7 Propositions

The proposition arising from the literature review is that there are a number of inter-related key factors that may significantly affect the uptake of HIV testing by workplace employees:

Sub-proposition 1

Participation in HIV testing is influenced by personal demographic factors including age, race, gender, educational attainment and socio-economic status.

Sub-proposition 2

Participation in HIV testing is influenced by belief factors including knowledge, attitudes, and practices, cultural influences, and proximity to (knowing someone who has, or has had) HIV/AIDS.

Sub-proposition 3

Participation in HIV testing is influenced by external influences including socio-political context, perceived stigma and discrimination associated with HIV/AIDS and VCT, and workplace policies and practices.

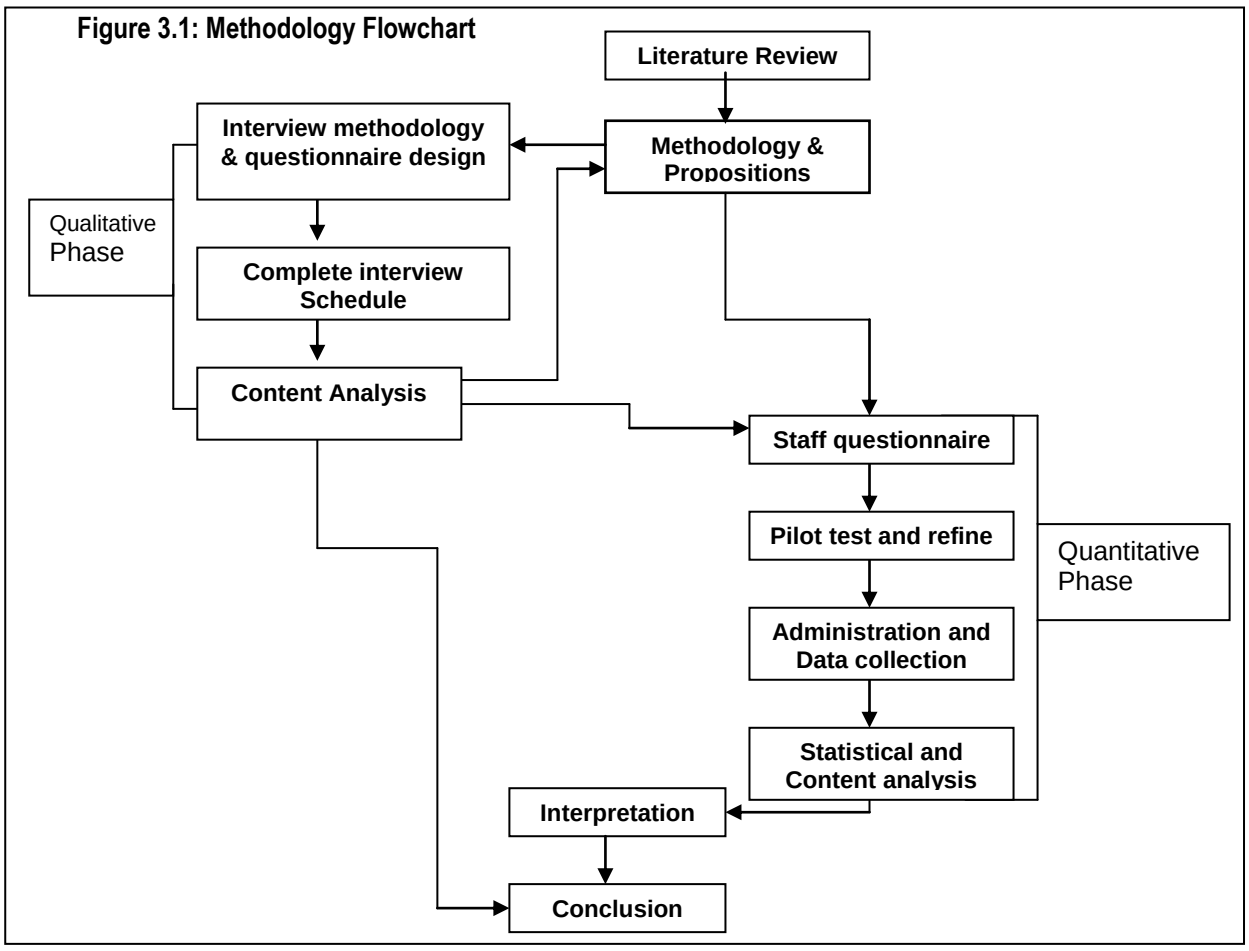
3 RESEARCH METHODOLOGY

This chapter describes the methodology used in the research. It describes the population, sample selection, interview and content analysis process used to formulate the questionnaire, the survey population, data collection and methods of data analysis applied.

3.1 Method

The study employed mixed research methodologies. The primary method was a quantitative (descriptive, statistical, and content) analysis of data collected through an anonymous self-administered questionnaire to solicit information on personnel demographics, personal beliefs and intervention influences regarding HIV testing in a specific workplace population. The survey-based measuring instrument (Appendix A) developed for this purpose was based on the literature review, existing knowledge, attitude, practice and behaviour surveys, and the results from a qualitative (content) analysis of select semi-structured in-depth interviews. A depiction of the methodology process is depicted in Figure 3.1.

Figure 3.1: Methodology Flowchart



3.2 The Qualitative Study

The purpose of the qualitative study was to confirm the evidence of the literature review and to identify any additional factors gleaned from best practice VCT implementations at large enterprises. From the literature review, the interviews were structured to include expert opinions on factors associated with:

- Bringing about effective implementation of knowledge, attitude, belief and behaviour (KAPB) change;
- Developing negotiation and decision-making skills, and female empowerment;
- Incorporating enabling - and reducing restraining - community contexts addressing the socio-cultural and political contexts of employees lives;
- Addressing social stigma in the workplace and community;
- Overcoming barriers to disclosure and acknowledgement of the existence of PLWHA and AIDS death, and perceived personal risk;
- Addressing VCT logistics barriers including confidentiality issues.

The process of identifying and interviewing workplace VCT experts and analysing the data collected is outlined in this section.

3.2.1 The qualitative study research population

The population comprised all VCT programme service providers, and programme designers and implementers within large companies regarded by the health industry as having implemented ‘best practice’ VCT programmes in the workplace in South Africa, together with academics and experts in South Africa who are involved in the study of VCT.

3.2.2 Qualitative study sample size and selection

A sample of experts from the Gauteng area was used for this phase of the study (Table 3.1). The researcher aimed to extract a cross-section of opinions regarding workplace VCT from current practitioners. Large enterprise best practice VCT implementers were identified from the SABCOHA website (SABCOHA, 2003). The experts interviewed were selected on the basis of access and availability. The sample was therefore convenient in nature. The researcher drew participants for the study from known VCT implementers, practitioners and consultants from the following organisations:

Table 3.1: Expert Group

Organisation	Representative	Description
AIDC	Dr M. Mahlatsi	Government funded business support
BMW	Dr N. Mayet	Large enterprise best practice VCT implementer
Ford	Mr J. Strydom	Large enterprise best practice VCT implementer
Healthy Workplace Management	Ms T. Enslin	HIV/AIDS prevention business consultant
HIV Management Services	Mr A. Apostolellis	VCT practitioners
Lifeworks	Mr S. Jelley	Disease management services
Right to Care	Ms L. Köstlich	Disease management services
Tsa-Botsogo	Dr M. Makhalemele	Community development and PLWHA support organisation
Unilever	Mr H. Bokomo	Large enterprise best practice VCT implementer

3.2.3 The expert interviews

The series of interviews with workplace VCT experts was conducted between August and October 2003 (see schedule at Appendix D). Supplementing the formal interview structure documented below, the researcher was also invited to attend the first day of a two-day seminar entitled Evaluating Workplace VCT hosted by Right to Care. This seminar brought together experts from Right to Care, Alexander Forbes Health Management Solutions, and Wits Health Consortium (Infectious Diseases Clinical Trials Unit). Recent workplace VCT case studies were discussed, and based on their outcome, criteria and barriers perceived to have influenced VCT uptake were defined and weighted. This provided a valuable additional opportunity to validate the findings of the literature review and qualitative study in discussion with the experts listed in Table 3.2.

Table 3.2: Expert Discussion Group

Representative	Organisation	Description
Dr F. Conradie	Right to Care	HIV management services
Mr A. Engelbracht	Alexander Forbes	Medical Insurance Provider
Dr I. Sanne	Right to Care	HIV management services
Mr F. Strydom	Alexander Forbes	Medical Insurance Provider

3.2.4 The semi-structured interview

Qualitative research is particularly suited to achieving an in-depth understanding of a topic, and a semi-structured interview technique is often called for (Trochim, 2002). The advantages of qualitative, small sample, interview-based research to

generate information on complex social dynamics are well documented in social science literature (Miles & Huberman, 1994). Specific advantages are:

- The researcher controls questions asked (Pirow, 1990; Cresswell, 1994);
- Its flexibility allows the researcher to prompt as necessary (Pirow, 1990), and "shift focus as new data comes to light" (Leedy & Ormrod, 2001:158);
- The researcher can take note of non-verbal behaviour (Pirow, 1990);
- Interviewees can provide "historical information" (Cresswell, 1994: 150);
- It provides access to information that is difficult to obtain through other research methods (O'Sullivan, Rice & Saunders, 1994);
- It provides opportunity for immediate clarification of ambiguous answers (O'Sullivan *et al*, 1994).

There are, however, disadvantages:

- Data may be misinterpreted by the researcher (O'Sullivan *et al,* 1994);
- The researcher's presence inevitably affects content and flow of events, reflecting notions of "researcher as instrument" (Leedy & Ormrod, 2001:162);
- People are not all equally articulate, communicative or perceptive (Creswell, 1994, 150).

Semi-structured interviews are usually based around a few core questions (Leedy & Ormrod, 2001). In this study, the questions selected supported the objective of extracting useful information regarding the core themes relating to the rationale behind VCT programme development, and the factors deemed critical to implementation.

Interviews were based around the following core questions:

- What is the nature of the interviewee's business and specific approach towards HIV/AIDS prevention and care interventions in the workplace?
- What were the goals of programmes adopted?
- What targets, measurements and evaluations had been adopted?
- What components of HIV/AIDS programmes had been identified as necessary in order for workplace VCT programmes to be effective?

A prompt list was prepared as a guide if any of these elements identified during the literature review were omitted at this stage. This list covered KAPB, negotiation and decision-making skills, community context, stigma and discrimination, disclosure, risk, proximity and VCT logistics. Demographic factors such as

employees' age cannot be affected by HIV/AIDS interventions, and addressing race and gender imbalances are societal goals under separate direction, therefore these issues were not addressed in this qualitative study process.

The results of the content analysis were compared with theory extracted from the literature review, providing internal validity checks to the conceptual model used to develop the questionnaire used in the quantitative study.

3.2.5 Qualitative study data collection

Prospective expert interviewees were contacted by telephone. A brief outline of the purpose of the study and methodology was discussed. The candidate was offered an electronic copy or summary of the final research report as an incentive to participate in the research. If the candidate was willing, an appointment was made to conduct the interview. Respondents were assured that responses of a sensitive nature would remain anonymous. All interviews with experts were conducted in person at the respondent's premises (to increase equivalence). Notes were taken during the interview. A two-column note process was used, with actual words recorded on the right and impressions formed on the left. All information volunteered by participants was used for analysis.

The objective of the interview process was to develop a practical understanding of workplace VCT best practice to:

- Determine the behavioural, belief-based and other influencing factors affecting participation in HIV testing;
- Determine the practices influencing such factors;
- Test understanding distilled from the literature review of what type of corporate, peer, social, counsellor/educator/practitioner and other behaviours support, or create barriers to participation in VCT programmes.

3.2.6 Data analysis

Notes taken during the interviews were subject to content analysis for evidence of patterns and trends. This data was coded in accordance with the personal characteristics, motivational factors and barriers to HIV test participation identified through the literature review, and grouped for interpretation, comparison and reporting. Care was taken to undertake this analysis in as complete and unbiased a way as possible, recognising that a limitation of content analysis is that the

definition of themes into distinguishable characteristics is subjective, and interpretation of a point made by an interviewee or respondent may in some instances be subjective (Williamson, Karp & Dalphin 1977).

The results were reviewed against the research propositions for evidence of support or contradiction of existing theory identified in the literature review. The questionnaire design was then devised to incorporate the findings of the literature review and qualitative study.

3.3 The Quantitative Study

The quantitative study was the primary element of this research methodology. A questionnaire was developed as the instrument of analysis. The data gathered was subject to statistical and content analysis to identify underlying influences on participation in HIV testing. The resultant analysis, supplemented by information gathered in the qualitative stage, was used to confirm, reject or expand theoretical propositions developed via the literature review and expert interviews.

3.3.1 The research population and agreement to the study

The research population comprised all staff at a medium-sized manufacturing company on the East Rand (now Ekurhuleni), which undertook an on-site VCT intervention in late September through October 2003. In order to maintain the confidentiality of questionnaire respondent information provided, the pseudonym CMSA (Component Manufacturer of South Africa) has been used in this report and analysis of findings.

The researcher attended an on-site meeting of the CMSA HIV/AIDS committee on July 23rd 2003. The managing director chaired the meeting. Also present were the human resources director, the occupational health officer, the skills development officer and two of the three union shop stewards. It was agreed that the researcher could attend subsequent meetings and observe the training and VCT interventions. The intervention background and detail are described in Chapter 5.

3.3.2 Factors affecting choice of research instrument

The researcher conducted a preliminary investigation before commencing the research. This identified a planned series of pre-VCT information and education interventions at CMSA, which were to be followed by the provision of third party on-

site VCT services. The researcher has a personal relationship with a member of CMSA senior management and therefore no staff interviews were conducted other than those with the members of the HIV/AIDS committee and a self-administered anonymous questionnaire method was chosen as the research instrument.

3.3.3 Sample size and questionnaire design

The research methodology aimed to maximise the number of usable completed returns. Allowing a 5% statistical margin of error on a population of 497 (total number of permanent and brokered employees), the minimum number of completed returns required was 217 (43%) (Saunders, Lewis & Thornhill, 2000). Allowing a 3% margin of error on a population of 497, the minimum number of completed returns required was 340 (68%). A survey response rate of 50% is considered adequate, 60% good and 75% very good (Babbie, 1990).

CMSA operates a continuous production process in most areas. Whilst management were prepared to accept some lost production to accommodate completion of the survey during work time, measures had to be taken to minimise disruption and accommodate shift patterns. This meant that the survey had to be administered over three working days. These actions were intended to maximise the number of returns.

It was accepted that the limited time available to complete the survey placed restrictions on length and format and the questionnaire was designed accordingly. Questions were structured to test potential personnel demographics, beliefs and influences affecting VCT uptake, as identified during the process of literature review (Chapter 2), qualitative research findings (Chapter 4), and analysis of company payroll data (Section 5.1.3). Feedback from the pilot study (below) was also incorporated.

The questionnaire was double-sided, with English on one side and isiZulu on the other (see Appendix A). The isiZulu version was generated through a process of translation from English to isiZulu by one fluent speaker of the isiZulu language, and then back-translated from isiZulu by a second fluent speaker. The second stage output was then checked to ensure there had been no significant change in meaning on any question or instruction. The selection of English and isiZulu covered the top two language preferences (English 73% and Isizulu 13%, total

86%) of respondents to an earlier survey. Four other languages (catering for the other 14% of primary preferences) were excluded for logistics reasons, although it was accepted that this was not ideal.

The questionnaire was pilot tested twice by groups of 10 respondents - primarily peer educators within the company who had participated in the September industrial theatre and PLWHA talk interventions and therefore understood the context of the questions. These groups were selected to be as close to a representative population as possible. The pilot process aimed to minimise possibility of errors arising from ambiguity, misinterpretation and misunderstanding (Fink, 1995), and to ascertain whether the language used was clear and concise. It was also submitted to a group of experts to help establish content validity and internal consistency prior to administration (Mitchell, 1996).

The first pilot group objected strongly to the inclusion of a race question in the demographics section. This question was deleted from the second pilot. When asked, the second pilot group unanimously agreed with its exclusion, suggesting that its inclusion could result in loss of goodwill to the extent that respondents might not proceed with the rest of the survey. As only the HSRC national study of HIV/AIDS prevalence (HSRC, 2002) had generated and analysed data on race together with VCT participation (other studies have also omitted race demographics questions), the researcher chose to exclude the race question to maximise the number of fully completed (usable) returns. As a result it was not possible to compare the CMSA workforce and HSRC study national data by race.

Questionnaire font and format followed those of prior CMSA surveys to maximise familiarity and ease of completion. The format also followed the recommended maximum length of six to eight A4 pages for within-organisation self-administered questionnaires (Saunders *et al*, 2000).

3.3.4 Questionnaire administration

An envelope containing a blank questionnaire and a gift pencil was distributed to all 448 permanent and brokered staff attending the CMSA site between Friday October 31st and Monday November 3rd 2003. The extended period accommodated shift patterns. The gift pencil was included as a token of

appreciation as well as to ensure that all respondents had a writing instrument to hand at the time of questionnaire completion.

On receipt, respondents were requested to complete the questionnaire, place it in the sealable envelope provided, and deposit it in the collection box placed in each main work area (the boxes were sealed except for a small post slot). Those that declined to participate were requested to seal the blank questionnaire in its envelope and place that in the collection box. The boxes were collected by the occupational health officer and the skills development officer and handed over to the researcher.

3.3.5 Data analysis

Comments given in isiZulu were translated into English, and all comments and multiple-choice responses from the 370 fully completed questionnaires were captured onto an Excel spreadsheet (Appendix B). Checks were made to ensure 370 responses had been entered against each question, and then the spreadsheet entries were checked against a random (using Excel random number generator) selection of 20% of the questionnaires. Any entry that was identified as unusual during analysis was also checked. The frequency tables in sections 3 and 4 of the questionnaire were exported to a NCSS (Number Cruncher Statistical System) spreadsheet and correspondence analysis used to transform ordinal data into interval data. The raw data was then re-scaled to facilitate further statistical analysis including the calculation of means, standard deviations, and multi-variant analyses (Bendixen & Sandler, 1995). The following scores were allocated to measures of agreement:

Table 3.3: Rescaled Agreement Likert Scale

Unscaled	Verbal Scale	Rescaled
1	Strongly disagree	1.00
2	Disagree	1.53
3	Neutral	2.68
4	Agree	2.85
5	Strongly agree	5.00

The following scores were allocated to measures of influence:

Table 3.4: Rescaled Influence Likert Scale

Unscaled	Verbal Scale	Rescaled
1	No influence	1.00
2	Little influence	1.76
3	Some influence	2.73
4	Strong influence	4.02
5	Very strong influence	5.00

Student's t-tests (at 0.1%, 1% and 5% significance) were used to compare population sub-group beliefs and influences. Two-sample Tests of Proportions (at 0.1%, 1% and 5% significance) and Pearson's Correlation tests were used to measure the significance of differences between population sub-groups. Descriptive statistical and content analysis techniques were also used. This supported the drawing of inferences regarding factors affecting VCT uptake for comparison to those arising from the literature review and qualitative study. Findings and interpretation of the results of this process are detailed in Chapter 6.

3.4 Reliability, Validity and Credibility

3.4.1 Internal validity

Internal research validity is "the extent to which its design and the data that it yields allow the researcher to draw accurate conclusions about cause-and-effect and other relationships within the data" (Leedy & Ormrod, 2001:103). It is important as it attempts to, "minimise alternative explanations for the results obtained" (Leedy & Ormrod, 2001:107). Qualitative research must also be credible from the perspective of the participant in the research (Trochim, 2002). Within the qualitative phase of the research exercise, confirmation by with the experts involved that the conclusions are accurate and reflect their views confirmed internal validity.

3.4.2 External validity

Leedy & Ormrod (2001) define external validity as the extent to which results apply to situations beyond the research study. In a qualitative study, the interpretation of the data will to some extent be influenced by the researcher's biases and values. Varying perspectives were therefore sought from multiple sources. A qualitative study should seek to reveal, probe and record all such perspectives. The selection of experts interviewed for the qualitative study was convenient in nature and the sample small in number. It would not be possible to generalise the opinions and views of these subjects across the population in its entirety. However, the researcher sought diversity of expert opinion during this phase of the study in order to challenge the theoretical threads identified through the literature review. In this research, the external validity criterion was therefore that the findings were credible to the expert interviewees.

External validity of the quantitative research instrument and its results should require the use of a random and representative sample. Access to populations participating in VCT interventions is difficult by its nature, and high return rates are essential to reduce participation bias. Although convenient by nature, the choice of company used in the quantitative study afforded every individual in the workplace equal opportunity to participate, and the efforts made to maximise the number of usable returns did result in a statistically significant response rate in excess of the preferred completion target (see section 3.3.3).

3.4.3 Content and construct validity

Content validity of the quantitative research instrument (questionnaire) is essential. To achieve this, the research instrument (developed from the literature review) was subject to input and refinement in the qualitative phase of the study. Construct validity was sought through the use of a pilot study (Leedy & Ormrod, 2001).

3.5 Post-application and Analysis Review of the Questionnaire Design

The following changes to the questionnaire are advised if used in further research:

Section 2, Q2.1–2.5: The term 'Don't know' is not neutral and as a result this data could not be scaled. The term should be changed to 'Neutral'.

Section 3, Q3.8–3.9: These questions were ambiguous. They should be moved to the prior section and the questions rephrased as statements, as follows:

Q3.8 The workplace test service was convenient Strongly disagree Disagree Neutral Agree Strongly Agree

Q3.9 The workplace test service was confidential Strongly disagree Disagree Neutral Agree Strongly Agree

Section 5, Q5.2 and Q5.5: delete

Section 6, Q6.1 change to:

Q6.1 Did you get tested for any of the following reasons? (Please indicate how many times you have tested in each category)

❑ Pregnancy (pre-natal) test_____ ❑ Insurance/bond requirement_____ ❑ Other_____

Add

New question: Have you taken a HIV test in the last 12-18 months?

❑ Yes ❑ No

4 ANALYSIS OF RESULTS - QUALITATIVE STUDY

This chapter reports on the in-depth interviews with experts in the field of workplace VCT implementation as described in Chapter 3 (with schedule detail at Appendix D). The key objective of successful workplace voluntary counselling and testing (VCT) interventions is to create a supportive environment in which employees perceive the benefit of knowledge of their serostatus to outweigh perceived threats. These interviews identified principles common to successful VCT interventions in the context of that objective, and recognising the fundamental requirement to address stigma and discrimination within, and impacting on, the organisation. The findings are presented in the following order:

- Preparation for best practice workplace pre-VCT;
- Workplace VCT implementation and logistics;
- CMSA VCT intervention conformance to best practice findings.

4.1 Preparation for Best Practice Workplace Pre-VCT

All interviewees observed that large enterprises were best able to resource wellness management and community-based interventions, and that scalable models applicable to medium-sized companies had yet to be developed when these interviews took place. Nevertheless, the large enterprises surveyed were planning for suppliers and contractors to follow their lead (with Ford lending support for the government-funded body developing information, education and communication (IEC) interventions for the automotive industry).

All interviewees emphasised that an effective workplace VCT programme can only be an element of a much wider intervention - “There’s a danger of companies jumping into VCT unprepared. Support structures must be in place with benefits made very clear, to overcome the fear and stigma of HIV, and prepare a receptive culture” (J. Strydom, interview). Therefore, before embarking on a workplace VCT initiative, companies must have firmly established their HIV/AIDS strategic intent. At a minimum this HIV/AIDS strategic intent must support the following elements:

- An understanding of the baseline position;
- Establishment of pre-VCT intervention strategies supported by all stakeholders;
- Promotion of HIV/AIDS policy and pre-VCT policy initiatives;

- Implementation of information, education and communication initiatives;
- Development of a post-VCT care and wellness management strategy, including strategic consideration of the involvement of external communities.

These elements are detailed below. All findings were majority/consensus views unless otherwise indicated.

4.1.1 Understanding the baseline position

Companies must obtain a measure of the baseline demographics, personal beliefs and perceived influences (including baseline measures of stigma and discrimination) in their organisation in order to target interventions effectively and measure progress. BMW used such a technique, not only for this purpose, but in developing and supporting the company strategy. Dr Mayet (interview) noted:

> "We asked staff what they wanted us to do and then did it. That way, when any group tried to derail the intervention we could point to the survey results and say "but that's not what 75% of employees want" and when the occupational staff went out onto the shop-floor to encourage VCT uptake they could remind staff that 75% had said they would test, so if they were one of that 75% it was time for them to keep their side of the bargain."

4.1.2 Establishing pre-VCT intervention strategies supported by all stakeholders

Companies should develop strategies to reduce the impact of HIV/AIDS in the workplace (including information, education and communication, stigma reduction, health and safety measures, and accessible condom provision to prevent the spread of HIV), ensuring a non-discriminatory workplace environment, and agreeing levels of (and budgeting for) the provision of equitable employment benefits and support for employees infected or affected by HIV/AIDS. Company policies must at a minimum comply with current legislative guidelines, but should also meet Nedlac/Department of Labour guidelines published in the *Code of Good Practice on Key Aspects of HIV/AIDS and Employment* (Nedlac, 2000).

All interviewees stressed that while visible senior management leadership was critical to the success of any intervention, successful HIV/AIDS interventions supporting workplace VCT also required visible support and commitment from employee stakeholder representatives, to help address issues of stigma and attain the necessarily high level of trust and confidence required. Several experts cited cases of low employee participation in VCT interventions where management

leadership and employee representation participation was not clearly visible, and strong participation where they were. Regular meetings of a ‘stakeholder HIV/AIDS action committee’ (to maintain consensus and support for the initiative) with a nominated committee co-ordinator (dedicated to keep the project on track) were recommended.

All experts stressed the negative effect of workplace conflict on workplace VCT uptake. Mr Bokomo attributed ongoing retrenchment conflict as a key cause of the recorded knowledge of serostatus remaining below 15% among the Unilever SA workforce despite adequate resource provision over more than a year, and active marketing of a wellness management scheme that included the provision of ART for the prior six months (H. Bokomo, interview).

4.1.3 Promoting the HIV/AIDS policy and pre-VCT policy initiatives

It was recommended that companies publish a one-page policy document outlining agreed strategy. This should be signed by the most senior member of staff (i.e. owner, chief executive) and employee stakeholder representatives (union representatives and other representative staff bodies) to emphasise consensus support and agreement. It is not enough to display the policy document in public areas. Efforts must be made to ensure that employees understand the content, and that it is reviewed, updated and re-promoted regularly.

4.1.4 Implementing information, education and communication (IEC) initiatives

Information, education and communication initiatives should be undertaken on a regular basis in multiple formats (discussion and presentation as well as the provision of written materials in languages used at home) and over a long enough period for trust and confidence to be established, and stigma, discrimination and perceptions of support addressed, prior to introducing VCT.

Initiatives should start with management and stakeholder leaders and must first address stigma and discrimination at this level before involving all employees. Attendance at all IEC interventions should be compulsory, with visible participation of all levels throughout the company to avoid perceptions of discrimination. Once the medical model of HIV and AIDS and risk reduction is understood, participative formats (rather than lecturing) were regarded as most effective in achieving the

understanding that HIV/AIDS management requires individuals to take responsibility for their own health and to be empowered to do so. The consensus recommendation was that training/education groups should be limited to 30 for effective question and answer sessions, and sessions should be held in work time, and be mixed by race and gender.

Whilst well regarded generally as a communication medium, the use of industrial theatre was questioned by some because its use in large group formats can make it an ineffective forum for initiating discussion. It was therefore recommended that if industrial theatre is used for large groups (a cost effective option), it should be followed closely by peer-educator and ideally PLWHA (people living with HIV/AIDS) talks facilitating discussions, and question and answer (Q&A) sessions.

4.1.5 Developing post-VCT care and wellness management strategy, and involvement of external communities

Participation in HIV testing has far-reaching consequences and participants must perceive that the benefits of knowledge of their own serostatus outweigh the potential threats associated with a positive test result. Before encouraging employees to test, companies must have thought through the consequences of the initiative in order to establish effective wellness strategies and communicate such benefits effectively. Answers should have been prepared proactively for all 'what happens next' questions arising from test participation (e.g. how to stay HIV-negative, how and where to get care and support if HIV-positive, disclosure issues, what actions to take if discriminatory attitudes are perceived, etc).

Little empirical evidence was found during the literature review to support wider community involvement in workplace interventions. Few large enterprises have implemented HIV/AIDS interventions to this extent and, as such, the added benefit associated with the additional cost and effort required is unclear. However experts interviewed recommended community involvement and suggested that strategy regarding community involvement in workplace VCT should address:

- Whether to provide on-site or use third party counselling and wellness management services beyond that associated with the test. At minimum this must cover referral to governmental and NGO services;

- The extent of company support to the immediate community. This ranges from none (not best practice), through extension of company support services to immediate family, extended families, and ex-employees (after retrenchment or retirement);
- The extent of strategic partnerships between the company and community based organisations such as NGOs, community/religious leaders, community healthcare and traditional healers. All experts from the large enterprises had pursued interventions increasing staff contact with PLWHAs in the community (in recognition of proximity to HIV/AIDS as a potential influencing factor). The development of in-house PLWHA representatives was considered a difficult issue to be undertaken only with extreme caution (e.g. considering the consequence of discrimination emerging to the disadvantage of disclosing employees, or PLWHA staff being perceived to have benefited from their HIV-positive status, and how to proceed if the PLWHA representative was a poor ambassador).

4.1.6 Ensuring stigma, discrimination and KAPB issues have been addressed effectively

Once the interventions detailed above have been implemented, subsequent tests of employee perceptions of stigma and discrimination, company and community support should be undertaken to measure their effectiveness and ensure readiness to embark on the VCT initiative. Attitudes of co-workers and supervisors toward the VCT intervention were believed to affect participation – particularly if employees could be observed making use of the service and if participants had to make prior arrangement for work absence to utilise the service. “No-one is going to ask their supervisor for time away from a line to take a test if they fear an unsupportive response” (L. Köstlich, interview).

4.1.7 Examples of best practice VCT

1. BMW SA

Wellness management practices implemented by BMW were a model of best practice in large enterprises. Their occupational health team spent twelve months preparing for VCT, learning to provide high quality counselling, testing, and wellness management support: “We resisted pressure to start VCT until everything

was in place" (N. Mayet, interview). The wellness management strategy included confidential on-site treatment, ART provision (extended to immediate family members), treatment for other infections, provision of rehabilitation fitness facilities and compulsory (non-discriminatory) attendance on training courses of all staff fit for desk-work (whether incapacitated by AIDS or any other cause). This was cost-justified on the basis of maintenance of high employee productivity (N. Mayet, interview). While included in prevention initiatives, brokered and contract staff, were however excluded from wellness management (including ART) provision, and extended family treatment was limited. These were potential shortcomings, particularly with regard to community involvement. BMW had however developed links to local healthcare professionals, NGOs, faith-based organisations, educational institutions and traditional healers as an element of developing community trust and confidence in their wellness management services.

2. Sasol

Sasol's HIV/AIDS Response Programme (SHARP) was launched in 2002 and dramatically improved the company's response to HIV/AIDS after a slow and fragmented start (Dickinson, 2003b). The first phase of SHARP dealt with a prevention and wellness programme, including ART provision for staff and their families without medical aid (L. Köstlich, interview and Seaward, 2003).

Unions participated in the design of the pilot intervention, undertook a survey of employees prior to the planned intervention, identifying concerns, and subsequently playing an active role in addressing those concerns. They motivated workers to support the VCT initiative and helped implement the VCT intervention. The union also credited active and visible management involvement in the success of SHARP over prior interventions. The pilot VCT intervention at Twisdraai-East mine comprised a one-day programme for workers including counselling on health and safety aspects of dealing with HIV/AIDS. Multiple counselling and testing rooms were established around the central counselling venue. Union staff identified when rooms were available. Staff were free to enter and leave the training area so that no one knew whether they were going for a HIV test or a comfort break. This intervention resulted in 80% VCT uptake on one day.

In any given adult population there may be a cohort that perceives their risk of contracting the HI virus as so low as not to warrant testing – a 'No risk, no test'

group. Any element of non-participation, however, adds to the stigma associated with testing for those that do participate. The Sasol intervention not only proves the benefit of positive open communication between unions and management (L. Köstlich, interview and Seaward, 2003), but also proves that if sufficient momentum is created, the stigma associated with opting in to VCT can switch to positive peer-pressure to opt in and stigma against failing to support peers by opting out, driving even the 'No risk, no test" group to participate.

The Twisdraai-East one-day VCT intervention was followed by eight further VCT sessions over a two-month period. This succeeded in driving participation up to 90%. Prior knowledge of the option to participate later if not on the day of the counselling was regarded as key to this level of success (L. Köstlich, interview).

4.2 Logistics Issues in the Provision of On-site VCT

In addressing the detailed resourcing and logistics of testing, the majority of interviewees recommended that workplace VCT take place on-site to ensure its coordination with pre-VCT interventions, and to ensure quality control and confidentiality. A number of interviewees did, however, recommend the addition of an off-site option at multiple sites (to provide perceived independent/confidential options whilst ensuring workforce cultural mix was accommodated). This was regarded as of largely symbolic value as "no-one ever uses it but it reinforces confidentiality" (S. Jelley, interview).

Other logistics issues affecting the success of on-site VCT interventions were:

a) *Will it be resourced by in-house or third party counsellors and test staff? How can counselling be provided in the language staff use at home?*

Most interviewees noted that it could take an extended time to establish trust and confidence in any newly expanded occupational health team and therefore recommended the use of third-party VCT expert services. These could be more readily identified as independent of the company, thereby preserving confidentiality. Dr Mahlatsi also identified the possible cost benefits of utilising government funded intervention support (if available within an industry).

Dr Mayet however emphasised the value of in-house occupational health teams to provide continuity of support. It was recognised that language was key, and that

medium-sized companies might struggle to support a large enough staff to resource this service, but an additional benefit of expanding resources was the early treatment of other infections “It’s more cost effective for us to deal with those quickly during a work break, keeping the worker productive, than for staff to delay until they have to take time-off to go to their doctor off-site and risk an infection taking hold resulting in long-term absence” (N. Mayet, interview).

b) *How will VCT appointments be arranged and test records kept whilst maintaining confidentiality? Where will counselling and test facilities be located, and how will participant confidentiality be maintained before and after the test?*

Dr Mayet stressed the importance of preserving staff confidentiality, describing the union involvement in approving medical record systems, and detailing the redesign of the occupational health centre treatment rooms and waiting areas so that “staff that come here could equally be having their blood pressure or blood sugar tested and no-one else would know” (N. Mayet, interview).

c) *The type of testing used?*

Common options were ELISA (Enzyme linked Immunoassay) test with a three-day wait for results, or rapid (same day) test with ELISA confirmation if the rapid test indicates the presence of the HI virus, or other test method such as saliva test. The majority of interviewees favoured the use of rapid testing with ELISA confirmation.

d) *Timing of the pre-intervention and VCT initiatives - should VCT be accessible during or immediately following the pre-intervention initiative?*

The majority of interviewees recommended that VCT services be available on the day of and immediately following the pre-VCT intervention. Some also emphasised the need to repeat VCT interventions over an extended time to allow staff to come to terms with taking responsibility for their health.

e) *Will staff return to work after receiving the test result or be allowed to go home? If the latter, how to minimise productivity losses? How to accommodate shift-working patterns? Can the programme be extended over time to accommodate working pattern changes and to allow staff to come to terms with the need to know their serostatus?*

Accommodation of shift working patterns was acknowledged to be difficult and to ask as a barrier to participation. Ms Köstlich outlined a successful intervention

where all participants changed to a non-working day shift one day during the intervention. Some experts warned against incentivisation (e.g. allowing staff to leave early following VCT participation) or entering test participants in prize draws, as these had a record of encouraging staff to test but not to collect their results (particularly if using ELISA with delayed results).

If VCT is provided as an off-site option:

f) *How will VCT quality be controlled?*

g) *How will test costs be reimbursed? (if via medical insurance provision, companies should be aware that this could be a barrier to participation),*

h) *Will employees be allowed to test in company time? If so would this be unacceptable incentivisation, and if not, would this and the inconvenience of getting to the off-site location be a barrier to participation?*

4.3 Summary and CMSA Conformance to 'Best Practice'

The qualitative study best practice consensus findings are summarised in Table 4.1. The analysis of CMSA questionnaire results and observation of their intervention supported a judgement of conformance to best practice. This finding, together with method of assessment is noted. This table was used to generate a summary of key areas of conformance, recommendations for best practice implementation (Table 7.4), and an analysis of key areas of non- or limited-conformance and recommendations (Table 7.5). These tables are presented in Chapter 7 (Key Findings, Conclusion and Best Practice Recommendations).

Table 4.1: Qualitative Study Findings of Factors Affecting VCT Uptake vs. CMSA Intervention

Factor	Conform To Qualitative Findings?	Test Method: Observed Conformance & Assessment or Questionnaire Rating of VCT Influence
1. Strategy and implementation:		
Understanding the baseline position		
Baseline KAPB study and strategy	Yes	Observation - key
Establishing pre-VCT intervention strategies:		
Strong management support	Yes	Questionnaire – Strong
Strong employee stakeholder support	No	Questionnaire – Some
Strong peer-educator involvement	Limited	Questionnaire – Some
Published and publicised policy document	Yes	Observation - key
Implementing IEC initiatives:		
IEC campaign over prolonged period	Yes	Observation – key
Acceptance of the medical model of HIV/AIDS	Yes	Questionnaire - 89% acceptance
Additional mgnt legal/non-discrimination training	Yes	Observation - key
Compulsory IEC attendance, mixed grps max 30	Yes	Observation – key
PLWHA involvement	Yes	Questionnaire - Strong
Developing post-VCT care and wellness strategy:		
Staff access to ART treatment Other wellness	Perm Yes	Questionnaire- Perm yes/don't know, Brok'd no
management support via NGO	Yes	Observation – provision key, method unclear
Other wellness management provided in-house	Limited	Observation – provision key, method unclear
Perceived benefit in testing (can prolong life)	Yes	Questionnaire - 91% acceptance
Ensuring intervention effectiveness:		
Company/Supervisory support/non-discrimination	Perm Yes	Questionnaire - Perm-Strong, Brok'd-Some
Co-worker support/non-discrimination Perceived	Limited	Questionnaire – Some
VCT confidentiality	Perm Yes	Questionnaire - Perm agree, Brok'd limited
2. VCT Implementation Logistics:		
3rd party service, home counselling language	Yes	Observation – unclear, no in-house comparison
Confidential appointment and record-keeping	Yes	Observation – key
Disguised test/test room not associated with VCT	No	Questionnaire – Demand: some
Rapid test with ELISA confirmation	Yes	Observation – unclear
End of shift post-test counselling-leave after result	Yes	Observation – unclear. Area of difficulty
VCT co-ordinated with pre-intervention initiatives	Limited	Observation – effect diminishes over time
Extend VCT over time	No	Questionnaire – Demand: strong
3. Potential Future Intervention Influence		
Access to ART treatment for families	Perm Yes	Questionnaire – Demand: strong
Include partners and families in IEC	After VCT	Questionnaire – Demand: strong
Provide IEC in languages other than English	Yes	Questionnaire – Demand: strong
Duplicate intervention off-site	No	Questionnaire – Demand: some
Involve local community leaders	No	Questionnaire – Demand: some
Involve traditional healers	No	Questionnaire – Demand: some

5 INTERVENTION BACKGROUND AND DETAIL

This chapter describes the company surveyed ('CMSA'), outlines the VCT intervention planning and implementation processes, and describes observed employee response.

5.1 Company and VCT Intervention Background

5.1.1 CMSA background

CMSA is a medium-sized component manufacturer owned by a European multi-national technology group. The South African subsidiary was founded on the East Rand (now Ekurhuleni) after World War II. The business changed significantly with the introduction of high technology product transfers from Europe. The two waves of new product introductions brought about one period of rapid expansion after 1995, and a second around 2001/2.

5.1.2 Demographics of the CMSA workforce

Workforce recruitment tended to mirror this history resulting in three distinct groups:

- A contingent of older, male, long-service employees recruited into the traditional low skill, low-technology business after the 1950s,
- A much larger contingent of younger staff of both sexes, recruited after 1995;
- A third, predominantly young (under 29), single cohort recruited after 2001/2.

At the time of this survey, the majority of the latter group were employed in semi-skilled/blue-collar functions, and were contracted via a labour broker to add a third production shift. Employment contracts for these 'brokered' staff were with the labour broker and not CMSA.

It was a contract of employment for all CMSA 'permanent' staff to be members of a medical aid scheme, and CMSA had negotiated with the two medical aid schemes offered to increase ART, opportunistic infection, and medical boarding cover for the member of staff, and cover for his/her spouse and dependent children. Permanent staff that were members of either contracted scheme (97%) therefore had access to ART. Brokered staff were not subject to the medical insurance requirement, and 96% had not contracted into a medical aid scheme, and as such did not have access to ART.

Within the permanent staff group, few recruited before 1995 had received education to matriculation level. Staff recruited after 1995 however, worked in higher skill, high technology product areas, and the majority had attained education levels beyond matriculation. The demographic profile of CMSA personnel when the questionnaire was administered (taken from payroll data) is outlined in Table 5.1.

Table 5.1: Personnel Demographics October 2003

		Permanent Staff			Brokered Staff		
Personnel on-site – 497 (100%)		394 (79%)			103 (21%)		
Demographics		**No.**	**% of total**	**(Perm only %)**	**No.**	**% of total**	**(Brok'd only %)**
Age	16 – 29	162	33%	(41%)	85	17%	(83%)
	30 – 39	148	30%	(38%)	18	4%	(17%)
	40 +	84	17%	(21%)			
Race	African	261	53%	(66%)	103	21%	(100%)
	White	110	22%	(28%)			
	Coloured	5	1%	(1%)			
	Indian	18	4%	(5%)			
Monthly take-home pay (net of deductions)	Less than R3000	25	5%	(6%)	103	21%	(100%)
	R3000 - R5999	118	24%	(32%)			
	R6000 – R8999	84	17%	(21%)			
	R9000 – R11999	73	15%	(19%)			
	R12, 000+	94	19%	(24%)			

5.1.3 Derivation of questionnaire demographic questions

Demographic questions in the survey were formulated from the data shown in Table 5.1, with the exclusion of race as detailed in section 3.3.3. Net take-home pay was adopted as a measure of socio-economic status in preference to gross pay because overtime and shift-allowances might have made that more difficult for respondents to recall. Questions regarding occupation, education and number of dependents were added to validate socio-economic status. Gender was included to research the association between gender and VCT in the workplace and validate responses to 'Have you ever tested for reason of a pregnancy (pre-natal) test?'

Note: for ease of reporting, pre-natal and insurance bond testing have been grouped together as 'external request' tests. Whilst neither are strictly non-voluntary, insurance/bond test is a common requirement for access to credit, and studies in Botswana and the UK have shown that only one woman in ten opts out when requested to test during pregnancy (Simpson, Johnstone, Goldberg, Gormley & Hart, 1999 and CSIS, 2004). Employment status was included because of its close correlation with access to medical insurance and access to credit, both of which might have an effect on test participation.

5.2 Background to the CMSA's HIV/AIDS Interventions

The initial HIV/AIDS information, education and communication intervention was prompted by concerns of the increasing costs of insured risk benefits and the potential future impact of the epidemic on profitability (CMSA Managing Director, interview). The HIV/AIDS interventions were initiated by local management and not directed from international headquarters.

Actuarial consultants were engaged to estimate HIV/AIDS prevalence, utilising a proprietary model based on the ASSA (Actuarial Society of South Africa) model of HIV prevalence. A KAPB (Knowledge, Attitude, Practices and Behaviours) survey was also undertaken amongst both permanent and brokered staff.

The consultants presented the findings of the prevalence and KAPB studies in March 2002. CMSA was assessed to have a moderate HIV/AIDS risk profile, with 14% (57) of permanent employees estimated to be HIV-positive in 2002. This was forecast (without intervention) to rise to 21% (85) by 2010 (17% of male and 33% of female employees). Estimates of the additional costs to the business of future healthcare and retirement funding and risk benefit provision were provided, together with estimates of the potential impact of HIV/AIDS on productivity and manpower planning (NMG-Levy, 2002).

Four hundred (80%) of staff participated in the KAPB survey. Key findings were:

- 48% of staff had been tested for HIV at some point;
- Although the majority of staff had a good understanding of HIV and AIDS, 17% knew little or nothing;
- There was some degree of misunderstanding regarding the disease, particularly with respect to transmission modes;
- 47% of staff felt they were 'likely' or 'somewhat likely" to already be infected by HIV, indicating a high level of concern;
- Of those that felt it was very likely that they were HIV-positive, 65% had not been for a HIV test;
- Only 49% of staff felt sure that HIV-related illnesses could be treated;
- While 56% of staff stated that they would be comfortable working alongside a HIV-positive person, only 24% thought that co-workers would be supportive if they were HIV-positive.

The report concluded that although the level of knowledge and percentage of staff that already knew their serostatus was higher than benchmark comparisons, “effective workplace education and training could be cost-justified” (NMG-Levy, 2002:25). A knowledge-based programme was recommended, aimed at risk reduction, overcoming barriers to prevention and treatment (particularly with regard to workplace stigma), increasing the perceived benefits of knowing one’s serostatus, and promoting voluntary counselling and testing. The primary intervention goal was “to encourage staff who were HIV-negative to stay that way, whilst trying to keep those that were HIV-positive productive for as long as possible” (CMSA Managing Director, interview). Participation in HIV testing was deemed critical to enable individuals to take personal responsibility for their health. The intervention aimed “to encourage all staff to know their status” (CMSA Managing Director, interview). Given the relatively small number of staff with little knowledge, and low turnover of permanent staff, particular care was counselled in devising future interventions for to avoid ‘AIDS fatigue’ (NMG-Levy, 2002).

The action programme arising from the report focussed on information, education and communication, to address potential stigma, and increasing and publicising the benefits for staff and their dependents of knowing their serostatus.

CMSA’s life threatening diseases policy was revised to specifically address HIV/AIDS issues such as non-discrimination, testing, confidentiality, disclosure, employee benefits and reasonable accommodation (provision of alternative duties to maximise the productivity of affected employees). The policy document is displayed on all CMSA notice boards and every member of staff received a copy.

All permanent and brokered staff attended two compulsory half-day training sessions on the nature of the disease, transmission modes and progression, STIs, risk-behaviour reduction and negotiation skills, and anti-stigma/discrimination policies. Before launching the staff-training programme, management received training covering HIV/AIDS management skills, and the legal framework in which the disease would be managed (it was deemed essential that potential discrimination among management be addressed before tackling other issues). A volunteer peer-educator group was established and training provided.

Medical insurance contracts (including terms of medical boarding) were re-negotiated to increase HIV/AIDS-related illness cover as the standard cover

offered was identified as inadequate for basic needs. It was also felt that staff undertaking a HIV test should be confident that they and their families had sufficient cover for medical costs (including ART) if tested positive and that that cover would continue to be adequate if incapacited to the extent of requiring long-term medical boarding support. This change was communicated in writing to each employee, as well as being included in staff briefings. Medical aid providers, who meet with every member of staff annually, also highlighted the expanded cover.

Distribution points for free condoms and mass-education literature were increased and a general awareness (poster) campaign was launched.

As part of the IEC intervention, every employee received details of how to access VCT services (private, public and on-site occupational health services) and permanent staff were given details on how to reclaim private VCT costs via the medical aid schemes. This information was also prominently displayed via CMSA notice boards. During the pre-VCT intervention this 'testing awareness' campaign was repeated with the addition of details of the planned intervention, background data on the third-party VCT service provider, their counsellors and test processes, direct appointment booking details and on-site intervention dates.

Management also identified that the wellness management message (including diet and nutrition advice) was not supported by their 'pie and chips'-style contract catering facility. A new 24-hour canteen facility was built, providing heavily-subsidised meals, with menus specifically targeting wellness management. The opening of this facility was used as a further opportunity to disseminate HIV/AIDS awareness and wellness information by means of management presentations to all staff and a further mass-education campaign (CMSA Managing Director, interview).

A further KAPB study followed the initial training and awareness interventions in May 2003. This second KAPB survey identified that despite improvements in knowledge, the percentage of the workforce that had been tested had not changed significantly. Whilst statistically representative, only 308 staff (62%) completed the second KAPB survey. Whilst this may have resulted from differing application logistics, management were concerned that AIDS fatigue might also be reducing participation and therefore might also impact on the effectiveness of on-going interventions.

Management decided to undertake a further intervention initiative, employing the medium of industrial theatre as a fresh approach to mass-education. This was to be aimed specifically at "increasing the percentage of staff that knew their HIV status and who could therefore make the necessary life-style changes to remain HIV-negative or prolong life if [HIV] positive", (CMSA Managing Director, interview). This initiative also trialled the provision of third-party VCT services on-site.

5.2.1 VCT intervention planning

An industrial theatre production entitled "*Live on, Live long*" was chosen as most appropriate in addressing workplace VCT issues. It was also decided that presentations by people living with HIV/AIDS (PLWHA) be included in the pre-VCT intervention as it was felt that this would increase the effectiveness of the industrial theatre in transmitting the "know your status" message and in overcoming barriers to testing (particularly stigma). The union representatives recommended that the PLWHA speakers be well known and appear fit "so that staff don't disbelieve that they are HIV-positive because they look too well, or get the message that only people that look ill have the disease" (Research notes, July 23, 2003).

The pre-VCT intervention (theatre presentation and PLWHA talks) was scheduled over a six-week period (three sessions per day) as shown in Table 5.2. This accommodated third-party service provider availability, a trial of the theatre/play intervention (which was repeated in week two to address logistics issues) and employee shift patterns.

Table 5.2: Intervention timetable

Week commencing	Sept 15 2003	Sept 22 2003	Sept 29 2003	Oct 6 2003	Oct 13 2003	Oct 20 2003	Oct 27 2003
Theatre/play IEC	M T W T F	M T W T F	M T W T F	M T W T F	M T W T F	M T W T F	M T W T F
On-site VCT	M T W T F	M T W T F	M T W T F	M T W T F	M T W T F	M T W T F	M T W T F

Key = Intervention dates

Six trial theatre/PLWHA talk interventions took place in September 2003. Twelve further sessions took place over four days in October 2003. It was only possible to arrange for the on-site VCT service to take place on the same day or immediately following the theatre/talk days on three occasions, and there was a delay of over a month between the first theatre/talk interventions and the first on-site VCT availability. This probably resulted in some staff that would have otherwise participated in on-site VCT choosing to use off-site services (see Chapter 6).

5.2.2 Withdrawal of union support for the initiative

In August 2003 there was a short but acrimonious industrial dispute at the CMSA site. The primary focus of the three-day dispute was the permanent employment of brokered staff. As part of the settlement reached between the company and regional union headquarters, it was agreed that 20 of the 123 brokered staff would transfer to permanent status on October 1st 2003. The majority of the remaining (previously non-unionised) brokered staff joined the union.

Even after reaching agreement, local union members adopted a policy of non co-operation in the workplace, including boycotting training. In an escalation of the dispute, the chief shop steward applied to be made a full-time union representative. To press this claim, the shop stewards withdrew from the HIV/AIDS intervention planning process on the basis that the chief shop steward "could not have time to ensure HIV/AIDS interventions were in the members best interest whilst keeping production responsibilities" (Chief shop-steward, personal communication, 16th September 2003).

In order to address the union boycott of the pre-intervention theatre/PLHWA sessions (and also potential indifference amongst those that regarded HIV/AIDS as not affecting them), staff were notified that as the sessions were during working hours, attendance was compulsory and non-attendance would be deemed a disciplinary offence.

Union support for the intervention was not re-instated until October 24th 2003 (the day of the final theatre/talk intervention). As a result of the dispute action, the planned participation of the shop stewards in planning and supporting the intervention and implementation did not take place. It is probable that the absence of union participation, and particularly the withdrawal of the planned intervention promotion and endorsement of the third-party VCT service provider confidentiality, negatively affected participation particularly amongst the brokered staff.

5.2.3 Format of the theatre/talk interventions

The researcher observed all pre-intervention theatre/talk sessions. Having observed poorly implemented industrial theatre presentations at two other sites (where the location supported visibility and audibility for only a fraction of the audience and did not facilitate 'question and answer' (Q&A) participation), the

researcher did not identify any shortcomings in the use of the CMSA training location.

A peer-educator introduced each theatre/talk session on the first five days and a shop steward introduced the sessions on the final day. Introductions were followed by the *Live on-Live long* play which reinforced many of the subjects covered in the prior information, education and communication interventions, including the nature of the disease, its transmission modes and progression, that it can affect anyone (regardless of demographics), condom use, re-infection risks, employee rights, discrimination, stigma and the benefits of knowing one's status. The language of the play was predominantly English and isiZulu, with other African languages interspersed to reinforce critical points or for humour.

PWLHA talks preceding the play reinforced the non-discriminatory nature of the disease and emphasised the benefits of knowing one's status. At least one male and one female PLWHA presented at every session. There were two principal speakers - a white man who had tested HIV-positive nearly 20 years earlier, had recently undergone ART treatment and had been able to return to full-employment, and a black woman who had tested HIV-positive 13 years earlier and had not yet required ART.

The talks covered personal histories and wellness strategies, the benefits of knowing one's status, the importance of understanding medical aid provision and company policy, and the legal rights of HIV-positive employees. They provided advice on how to access care and support for HIV-positive individuals and their families, including available NGO services. On the days that the third-party VCT service provider was on site, one of their counsellors also spoke. She placed strong emphasis on the independence and confidentiality of their service, guaranteed that test results would not be disclosed to CMSA management or occupational health staff (only the total number of tests taken in order to charge for the service), and detailed the procedures for booking and utilising the VCT service (rapid test with ELISA confirmation and results provided on the day of testing), and for obtaining results and post-test services. When the counsellors were not available, the principal male PLWHA provided this information. There was an open Q&A session at the end of each theatre/talk presentation. Staff were invited to use

their home language to ask questions and answers were given in that language with a summary in English as appropriate.

Literature regarding NGO wellness management services and positive health advice (Orr, 2001) was made available (in the predominant four of six languages in use on site) throughout the intervention.

5.2.4 On-site VCT intervention logistics

A third-party service provider was engaged for the on-site VCT service. CMSA's HIV/AIDS committee put a great deal of consideration into VCT logistics to maximise confidentiality, minimise stigma and prejudice, and maximise accessibility while minimising productivity losses. Two double-room 'portacabins' were hired and placed in the entrance car park for the use of the two counsellors and test technician. In October, the two counsellors were introduced to staff at the theatre/talk sessions and in the workplace. All staff also received a leaflet introducing the service and counsellors, identifying which language each counsellor spoke (all official SA languages were covered) and inviting them to contact the counsellors directly on their personal cell phones to make appointments. Employees that worked outside 'office hours' (the company operated three production shifts over 24 hours) were requested to make test appointments only when on morning shift. The VCT counsellors were asked to ensure that staff were able to receive pre-counselling, testing and post-test counselling on the day they requested an appointment, but timed so that results were received towards the end of a day or shift (so that staff could leave site immediately after receiving their test results). The added complication of addressing shift-working patterns was observed to reduce VCT accessibility.

5.2.5 Observed response to industrial theatre and PLWHA talks

The compulsory attendance policy resulted in 98% attendance (balance of 2% excused due to long-term absence). Around 30 staff attended each session. All sessions deliberately had a mix of gender, age and race, and a mix of permanent and brokered staff and white and blue-collar workers. The HIV/AIDS committee regarded this as essential to ensuring that the intervention was not perceived as discriminatory (Research notes, July 18, 2003).

The researcher did not identify any negative consequences arising from compulsory attendance. Attendees smiled or laughed at the humorous elements of the play and joined in the audience participation elements of the play and talks. The majority of Q&A sessions lasted the full scheduled hour after the theatre/talks with strong staff participation. Almost all questions were directed at the people living with HIV/AIDS. In every Q&A session employees asked for further information on nutrition, supplements and wellness management, and, in most sessions questions were asked on confidentiality, ART and other infection treatment costs, risk reduction and condom use and re-infection risk. Other themes, such as why some populations had been reported to have high resistance to HIV, the validity of news reports that HIV could be a "Western plot to wipe out black Africa" (The Sowetan, 2003:12) and the validity of prevalence statistics, tended to be common across all sessions held on one day, suggesting some pre-session discussion between attendees.

5.3 Setting Participation Targets for Workplace VCT Interventions

The HSRC study on HIV/AIDS prevalence reported low awareness and uptake of VCT services - only 18.9% of survey participants aged over 15 had ever undergone VCT (Simbayi, Shisana, Chaveau & Ramlagan, 2003). Yet even this finding was substantially above VCT participation rates found in studies in other Sub-Sahara African countries - 6.5% in Zambia (Fylkesnes *et al*, 1999) and 8% in Zimbabwe (Baggaley, 2001). The HSRC study showed that personal motivation for VCT was lacking, given that more than half of all participants had tested solely for reasons of external request (see Sections 5.1.3 and 7.2). ASSA projections assume only 8.5% of the population will participate in VCT in any given year, raising the question of at what level participation in workplace schemes should be deemed 'successful'.

Some large corporations have developed particularly successful programmes. Over 80% of permanent BMW SA employees for example, knew their serostatus by September 2003, 20 months after initiating on-site VCT (N. Mayet, interview). This model is however based around a large on-site occupational health service and has been acknowledged as unsuitable for rollout to SMEs (N. Mayet, interview). Sasol has even achieved 90% VCT participation over an eight week

period during a pilot VCT intervention (L. Köstlich, interview). Although these cases prove that high uptake is possible, they appear to have been exceptional and may not therefore be an achievable target for SME workplace VCT programmes. Few SMEs can expect to achieve the level of socio-economic or cultural influence that BMW has demonstrated whilst governmental policy and attitude not only fail to support such initiatives, but also through continued perceived indecision and lack of positive leadership, undermine them. Daimler-Chrysler SA (DCSA) began workplace VCT six months after BMW in July 2001 but had only a 40% uptake by the end of 2002 (Seizt *et al*, 2002). While Unilever SA is also regarded as a best practice VCT implementer, their Gauteng operation only achieved their target of greater than 10% ten months into their promotional campaign (H. Bokomo, interview).

Expectations for on-site VCT participation should be realistic. CMSA management regarded the intervention to have been justified “if only one person prolonged their life by accessing early treatment and care, or by taking action to remain HIV-negative” (CMSA Managing Director, interview).

6 QUANTITATIVE STUDY - ANALYSIS OF RESULTS

The responses to the quantitative research tool are presented and analysed in this chapter. Questionnaire response rates and data analysis processes are detailed, followed by an analysis of findings arising from the quantitative study. The order of presentation of the analysis of findings is based on the themes presented in the questionnaire, as follows:

- Questionnaire response rates (Section 6.1);
- Comparison of the demographic profiles of CMSA employees versus the questionnaire respondent sub-group (Section 6.2);
- Measures of statistical significance (Section 6.3);
- Respondents' demographic profiles (Section 6.4);
- Personal beliefs with regard to factors that may influence the decision to test (Section 6.5);
- Perceptions of HIV/AIDS stigma and support in the workplace and community (Section 6.6);
- Assessment of the past, and potential future influence of elements of workplace HIV/AIDS interventions in VCT uptake (Section 6.7);
- Participation and non-participation in HIV testing in this workplace population (Section 6.8).

6.1 Questionnaire Response Rates

Table 6.1: Questionnaire Response Rates

Questionnaire data	No.	Analysis	%
Employee population	497	Administered/returned	100%
Number administered	448	Administered/population	90%
Number returned	448	Returned/population	90%
Number fully completed	370	Usable/population	74%

The return rate of 448 administered questionnaires was 100% (Table 6.1). This was expected given the relatively high level of supervision in the administration process (see Chapter 3). Forty-nine employees (10%) were absent from site at the time the questionnaire was administered. Of the 448 questionnaires administered, 370 (83%) were fully completed (i.e. one response to each multiple-choice question, with only optional comments incomplete). The usable return rate was therefore 74% of the total CMSA employee population. In accordance with Babbie's (1990) rating scale this response was good/very good (see section 3.3.3).

6.2 Comparison of the Demographic Profiles of CMSA Employees versus the Questionnaire Respondent Sub-group

Table 6.2 summarises the demographics of those who returned usable responses to the questionnaire, comparing age, job status and salary group between respondents and total workforce as defined by October 2003 payroll. Pearson correlation test confirmed that there was a close correlation (99.2%, very strong) between the respondent population and the employee population. Any level of non-participation results in a potential for bias (e.g. arising if a significant percentage of the non-participant data were skewed toward one demographic group or set of beliefs and influences). It is therefore important to try to ascertain the direction of potential bias.

Table 6.2: Response Representation

Category	Employee data No. of staff (Oct 2003 payroll)		Respondent data Fully completed (Survey Oct/Nov 03)		Usable response % of total	Expected (74%) - Usable
Total number in group	497	100%	370	100%	74%	-
Employment status						
Permanent staff	394	79%	278	75%	70%	(4%)
Brokered staff	103	21%	92	25%	89%	15%
Age group						
16-29	247	50%	188	51%	76%	2%
30-39	167	34%	118	32%	71%	(3%)
40+	84	17%	64	17%	76%	2%
Average monthly take-home pay (after tax, bond, loan repay't, etc)						
Less than R3000	126	25%	109	29%	87%	13%
R3000 – R5999.99	121	24%	83	22%	69%	(6%)
R6000 – R8999.99	85	17%	64	17%	75%	1%
R9000 – R11999.99	72	14%	46	12%	64%	(10%)
More than R12000	94	19%	68	14%	72%	(2%)

Of the 49 (10%) not on-site during the application of the survey, four were absent due to illness, and 45 on vacation, working off-site, or attending off-site training courses. This latter group were all technical or white-collar staff. Of the 77 (15%) unusable responses, 51 were blank. Those refusing to participate could have done so because they had strong negative opinions of the intervention or were indifferent toward it. The remaining 26 responses were spoiled (more than one box completed for a multiple choice question) or incomplete, possibly because the

respondents ran out of time, suffered ‘questionnaire fatigue’, or did not trust the survey process sufficiently to disclose all requested information.

While demographics, beliefs, attitudes and perceived risks among non-participants could not be determined conclusively (as a result of anonymity constraints on the process), analysis of the demographics of respondents against the total population (Table 6.2) indicates close correlation by age group, and no statistically significant differences between the respondent group and the total CMSA employee population (utilising Two Sample Test of Proportions at 5% significance). Despite industrial action immediately prior to the administration of the survey, the highest usable return rate was among brokered and blue-collar staff. This may be because this group was least likely to have been working off-site during the administration of the questionnaire and/or that they were more motivated to respond. The disparity between population and respondent percentages was greatest in the ‘net pay R9000+’ groups. This could suggest indifference amongst this more affluent group but individuals in this group were also the most likely to be working off-site.

In summary, correlation between the respondent group and the total CMSA employee population was very strong. There was no indication of significant non-participation by any particular demographic sub-group.

6.3 Measures of Significance

Two-sample tests of proportions at 0.1%, 1% and 5% significance were used in the analysis of demographic factors, and measures of proximity to HIV/AIDS and belief in the medical model of HIV/AIDS (Q1.1 to 2.10). Two-tailed Student’s t distribution tests at 0.1%, 1% and 5% significance were used in the analysis of perceptions of stigma and confidentiality, and perceived influence of past and possible future interventions (Q3.1 to 4.9). All tests of significance are reported at 5% unless otherwise stated.

Cluster analysis confirmed the findings achieved through using two-sample tests of proportions and Student’s t tests but as it did not add to these findings the reporting of these results has been omitted from this report.

6.4 Personnel Demographics

Questions in this section were used in conjunction with responses to questions on HIV test history and future intentions on testing (questionnaire reference Q5.0 to Q6.3) to determine the demographics of HIV test participation.

Initial analysis identified that while the personnel demographics of the permanent staff group tended toward population norms for SA adults, brokered personnel demographics (other than gender) tended to be skewed; 87% held blue-collar occupations, 80% were aged 16-29 group, 85% were unmarried, 92% in the lowest take-home pay group, and 96% did not have medical insurance. As this skew was so pronounced that it could distort other analyses, all analyses were performed three times – once for all respondents, and again for permanent staff and then brokered staff. Where the results of the permanent or brokered groups vary significantly from that for all respondents, this is reported.

6.4.1 Demographics of questionnaire respondents

Permanent versus brokered employment status

Permanent staff accounted for the majority (75%) of respondents.

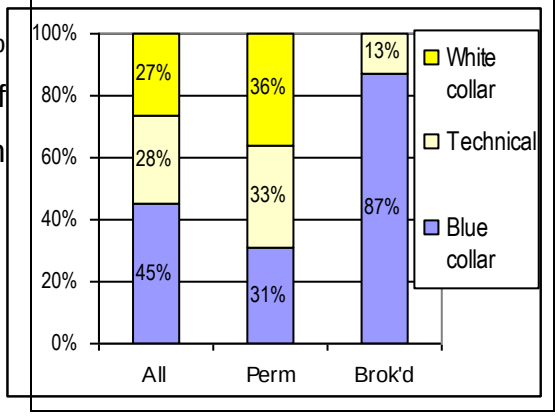
Gender

Male staff accounted for the majority of all respondents (65%). The proportion of male respondents fell to 58% in the brokered staff group, but this variation was not statistically significant.

Occupation

As shown in Figure 6.1, blue-collar occupations accounted for the majority 45% of all respondents. Brokered staff respondents were overwhelmingly (87%) in blue-collar occupations.

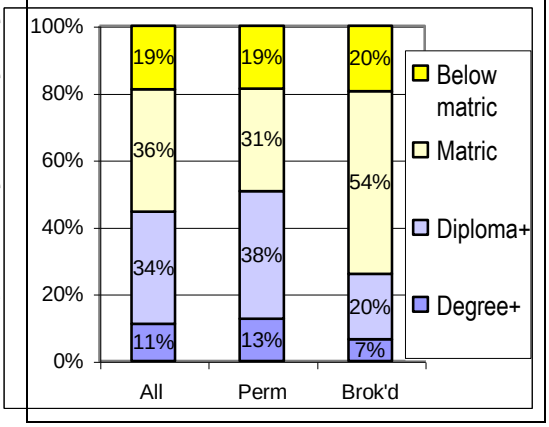
Figure 6.1: Occupation



Highest educational qualification

Staff educated to matriculation and above accounted for 81% of all respondents (Figure 6.2), with no significant difference between permanent and brokered staff groups. The percentage of staff educated beyond matriculation was however higher in the permanent group (51% vs. 27%).

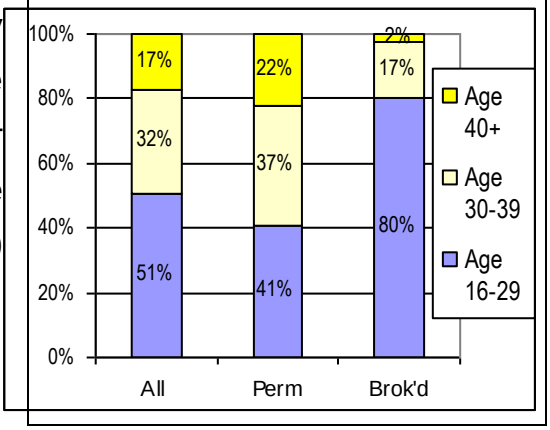
Figure 6.2: Education



Age group

Staff under-29 accounted for the majority (51%) of all respondents, rising to 80% in the brokered staff group (Figure 6.3). For analysis, the two groups aged over-40 were combined, as there were less than 30 responses in the over-49 group.

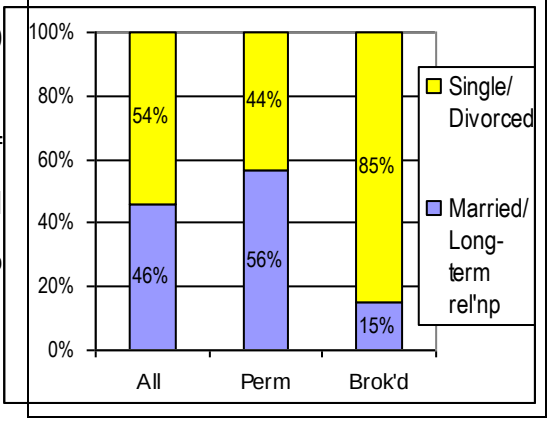
Figure 6.3: Age Group



Marital status

The divorced/widowed and single groups were combined, as there were less than 30 responses in the divorced/widowed group. The combined single/divorced/widowed staff group was the largest (54%) among all respondents. This percentage rose to 85% among brokered staff (Figure 6.4).

Figure 6.4: Marital Status

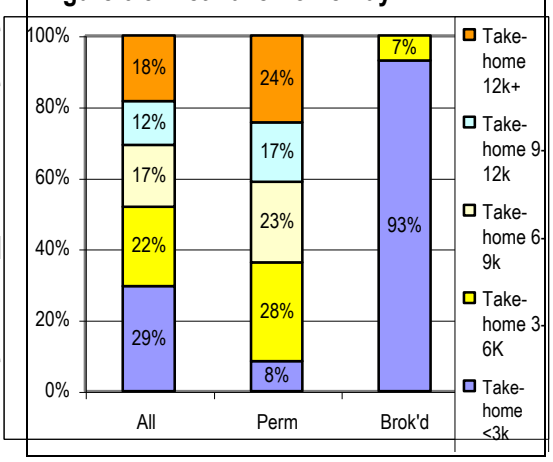


Net monthly take-home pay

Numbers of respondents in each income band were fairly evenly spread across the five bands for all respondents (Figure 6.5).

Although staff with net pay less than R3000/month accounted for 29% of all respondents, almost all (92%) were brokered staff (Figure 6.5). The demographics of the

Figure 6.5: Net Take-home Pay

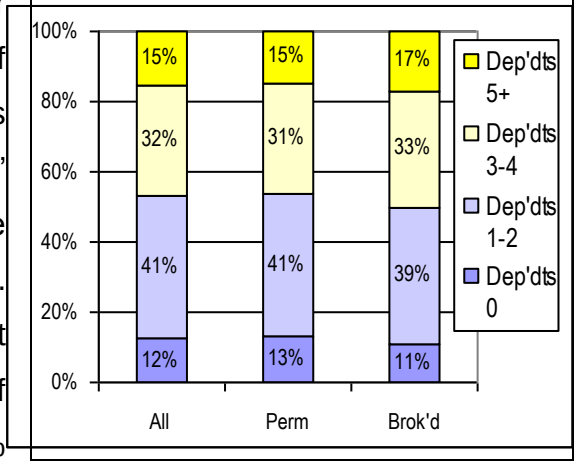


remaining 24 respondents closely matched that of the brokered staff group. Twenty staff moved from brokered to permanent status in the month that the questionnaire was administered and could account for the majority of this group. Net pay less than R3000/month can therefore be assumed an approximation of brokered employment status (or history thereof).

Dependents

Staff with no dependents accounted for 12% of respondents. The majority (73%) of staff had between 1 and 4 dependents (Figure 6.6). For further analysis, the '3-4' and '5+' groups were combined as there were less than 30 in the '5+' group. Numbers of dependents were not significantly lower for the brokered staff group despite lower income and only 15% of respondents indicating that they were married or in a long-term relationship (potentially with a second adult household income), further reducing socio-economic status within this group.

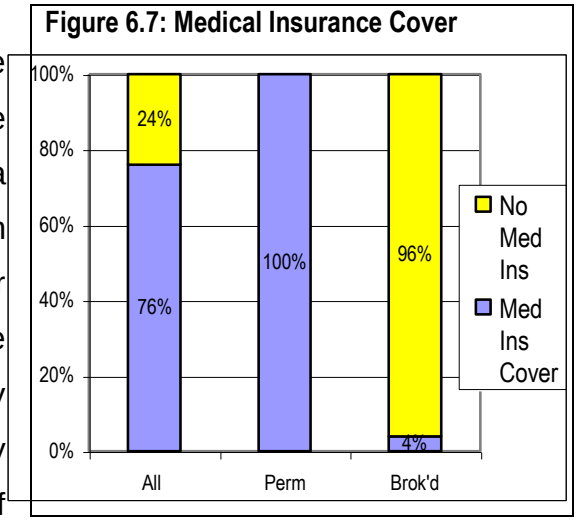
Figure 6.6: Number of Dependents



Medical insurance cover

This question was used to validate the premise that all permanent staff were members of a medical insurance scheme (a condition of employment – see section 5.1.2). Only one permanent staff member claimed not to have medical insurance (0.36%). Members of the two primary schemes operated within the company accounted for 97% of permanent staff respondents. In sharp contrast, 96% of brokered staff had no medical insurance cover (Figure 6.7) and therefore no access to insured ART cover.

Figure 6.7: Medical Insurance Cover



6.4.1.1 Summary of permanent and brokered staff demographic differences

Table 6.3: Permanent vs. Brokered staff demographics

Factor	Perm	Brok'd
% in blue-collar occupation	31%	87%
% educated beyond matriculation	51%	27%
% aged 16 to 29	41%	80%
% single/divorced	56%	85%
% net take-home pay <3000/mth	8%*	92%
% Insurance cover (ART)	100%	4%
* See *Typical take-home pay* note above		

Table 6.3 summarises the significant differences between permanent and brokered respondents. Where these differences could potentially skew subsequent analyses, the analysis of responses to questions regarding participation in HIV testing has been repeated for these sub-groups.

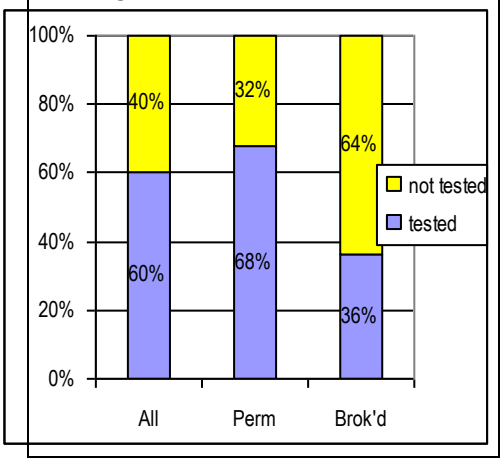
6.4.2 Personnel demographics and participation in HIV testing

Personnel demographic data (Q1.1 to Q1.9) was used in conjunction with HIV test participation history question responses (Q5.0) to determine the demographics of HIV test participation in this workplace population.

Of all 370 respondents, 60% (223) had tested for HIV/AIDS in or outside the company at some point, an increase from the 47% of all KAPB survey respondents in March 2002 (NMG-Levy, 2002). Of all permanent staff respondents, 68% had taken a HIV test, an increase from the 48% of permanent staff KAPB survey respondents in 2002 (as permanent staff turnover was low between these dates, this latter group is most likely have been from a correlated respondent cohort).

Employment status and HIV test participation

Figure 6.8: Employment Status & HIV Testing

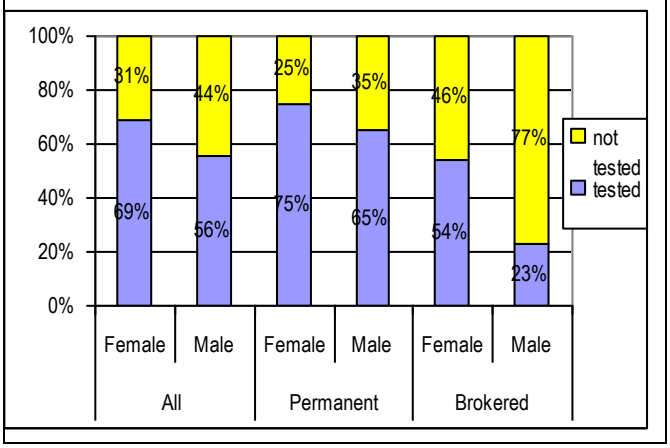


Of 278 permanent staff respondents, 68% had tested for HIV/AIDS (Figure 6.8). By contrast, only 36% of brokered staff had participated in HIV testing. A two-sample test of proportions at 0.1% significance confirmed that there was a significant difference in HIV test participation between the permanent and brokered staff groups (Figure 6.8). Permanent staff were significantly more likely than brokered staff to have taken a HIV test.

Gender and HIV test participation

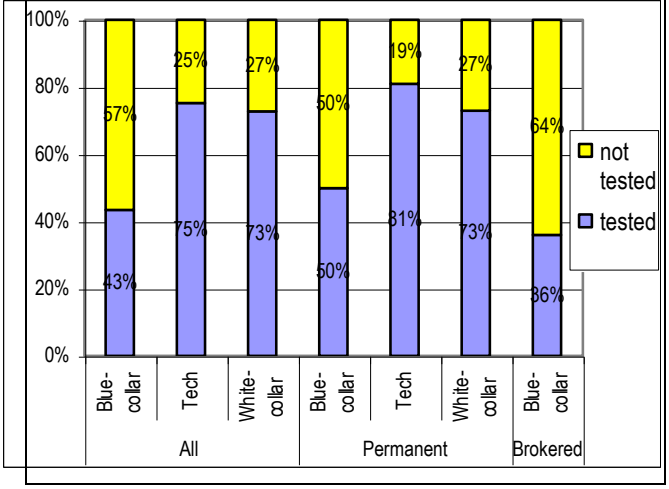
A significantly greater percentage of female workers had taken a HIV test (69%) than male (56%) (at 1% significance). The percentage of brokered females (54%) that had ever taken a HIV test was also significantly (at 1%) higher than their male counterparts (23%). Female HIV test participation was not however statistically different from male (at 5%) among the permanent staff group (Figure 6.9). The apparent link between female gender and test participation could therefore have been a skew effect due to inclusion of the low test brokered male data. Brokered employment status rather than gender could therefore have been the primary factor generating this association. Gender was not proven conclusively to have been associated with HIV testing as an independent variable.

Figure 6.9: Gender & HIV Test Participation



Occupation and HIV test participation

Figure 6.10: Occupation & HIV Test Participation



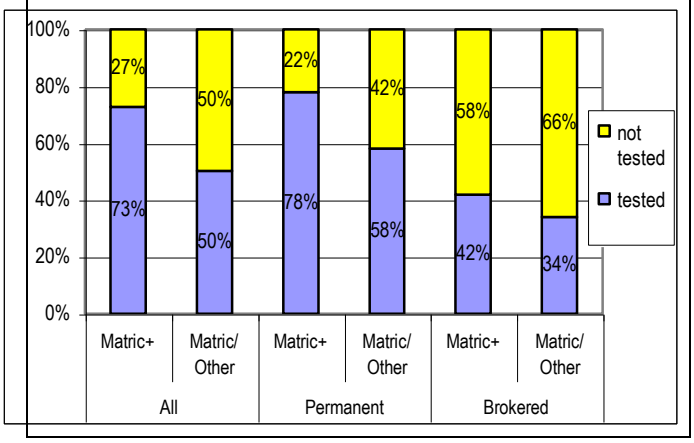
Blue-collar occupation test participation was significantly lower than technical and white-collar participation for both the All-respondent and permanent staff groups (Figure 6.10).

As fewer than five respondents had participated in HIV testing in brokered technical or white-collar groups, these were omitted.

Significant differences were identified between blue–collar and technical groups, and blue- and white-collar groups, but not between technical and white-collar occupations or between permanent and brokered blue-collar staff (at 5% significance). Thus occupation was found to have been a significant factor in HIV test participation.

Education and HIV test participation

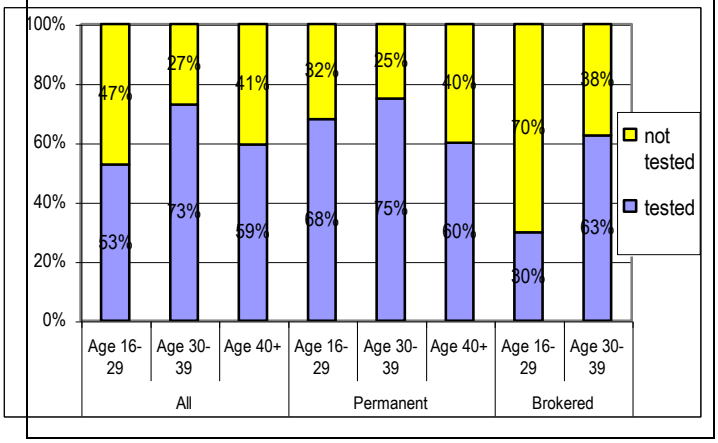
Figure 6.11: Education & HIV Test Participation



Education beyond matriculation was found to be associated (at 0.1% significance) with higher test rates (73% beyond matriculation versus 50% for the other/ matriculation group) (Figure 6.11). There was, however no significant difference however between test rates for education beyond matriculation for the brokered staff group. Whilst educational attainment appears to have been an important factor, the association between educational attainment and HIV test participation was not proven statistically for brokered staff. The primary factor could potentially be employment status rather than educational attainment. Educational attainment was not therefore proven conclusively to have been associated with participation in HIV testing as an independent variable.

Age group and HIV test participation

Figure 6.12: Age Group & HIV Test Participation



Analysis of age and HIV test participation for all respondents identified that test rates were significantly higher in the 30-39 age group (73%) than the other age groups (at 0.1% significance) (Figure 6.12). This difference may reflect increasing insurance/ bond testing with age, tailing off for those that already had access to credit before testing to access credit became common, or may reflect increased willingness to take responsibility for health issues with maturity in the 30-39 group. It may also indicate that the 16-29 and 40+ groups perceive themselves to be at lower risk of contracting the virus.

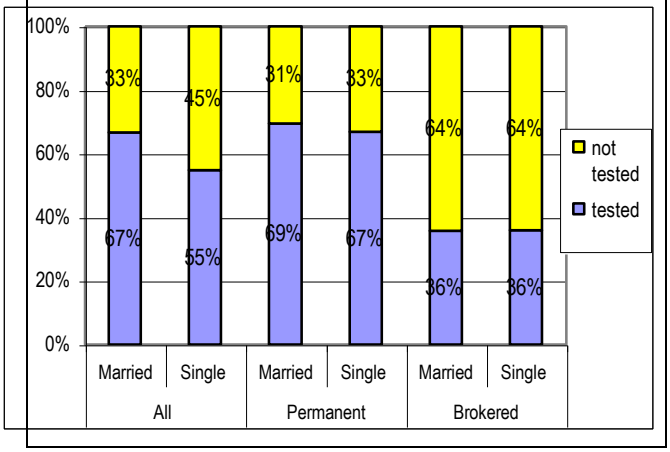
There were fewer than five responses in the brokered 40+ group, so this data was omitted. The difference in test rates between brokered respondents aged 30-39 (63%) and 16-29 (30%) was significant (at 0.1%). Analysis of demographics of this group failed to identify possible causes for this difference in participation rate.

Overall, the statistically significant association between age and HIV test participation was proven.

Marital status and HIV test participation

Figure 6.13 illustrates the overall higher rate of HIV test participation for the married/long-term relationship group (at 1% significance). There was no significant difference between married and single test participation for permanent groups. Similarly, there was no difference within the brokered group. The predominance of single respondents among brokered staff may have caused the skew in HIV test participation significance.

Figure 6.13: Marital Status & HIV Test Participation

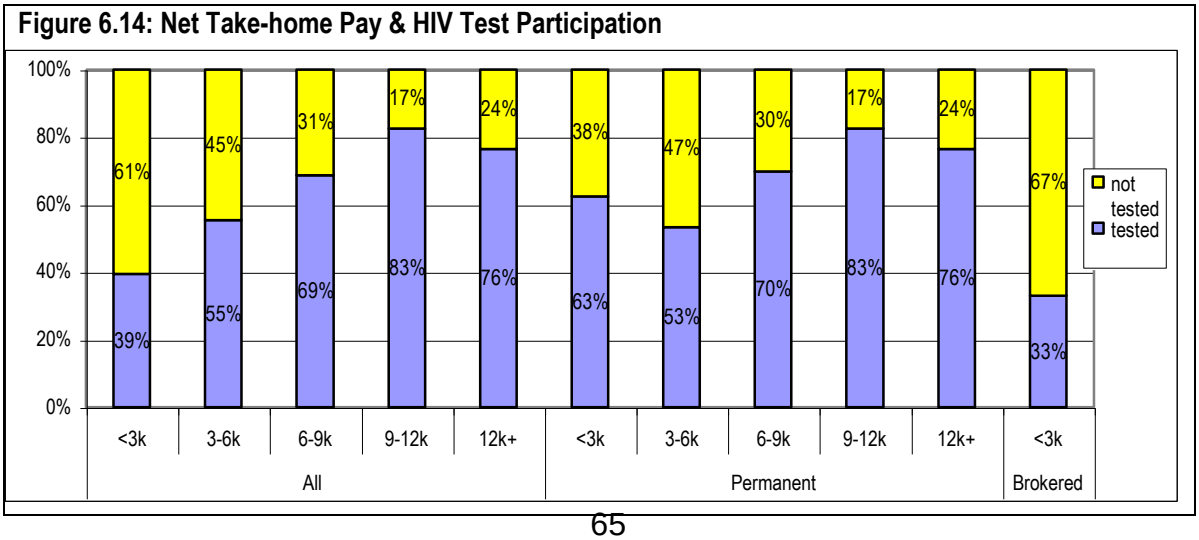


Brokered employment status rather than marital status may therefore be the primary factor associated with lower rates of testing for single/ divorced staff overall. Marital status was not proven conclusively to have been a significant factor in HIV test participation as an independent variable.

Net pay and HIV test participation

Staff with net pay of less than R3000/month were least likely to have tested and those above R9000/month were significantly more likely to have tested (Figure 6.14). The few respondents with net pay above R3000/month in the brokered staff group were omitted, but the test percentage for the less than R3000/month group (36%) mirrored the average for all brokered staff (Figures 6.8 and 6.14).

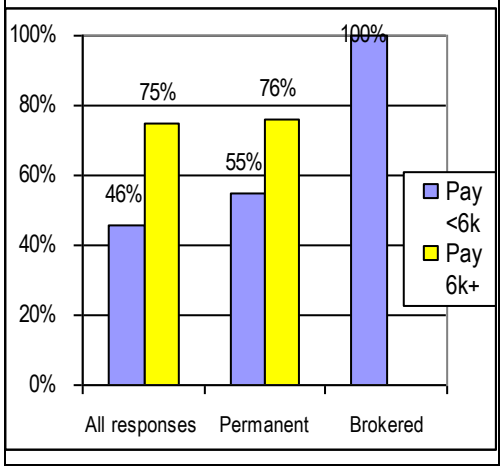
Figure 6.14: Net Take-home Pay & HIV Test Participation



Excluding brokered staff, test participation among permanent staff with take-home pay of less than R3000 rose to 63% (Figure 6.14). The majority (20 of 24) of respondents in this permanent <R3000 group had moved from brokered to permanent status one month prior to questionnaire administration (Section 6.4.1) and would have been the only brokered staff with sufficient length of service to have taken part in the first IEC intervention in 2002. Length of service (supporting build-up of trust and confidence in the company, management, and co-workers) and involvement in intervention actions over a prolonged period might at least partially account for the difference in test participation between these permanent and brokered sub-groups (63% vs. 33%). Test participation amongst the permanent staff group earning less than R3000 group was also significantly higher than for all blue-collar permanent staff (50%) (Figure 6.10), suggesting that factors other than pay in the permanent staff blue-collar group were a barrier to testing.

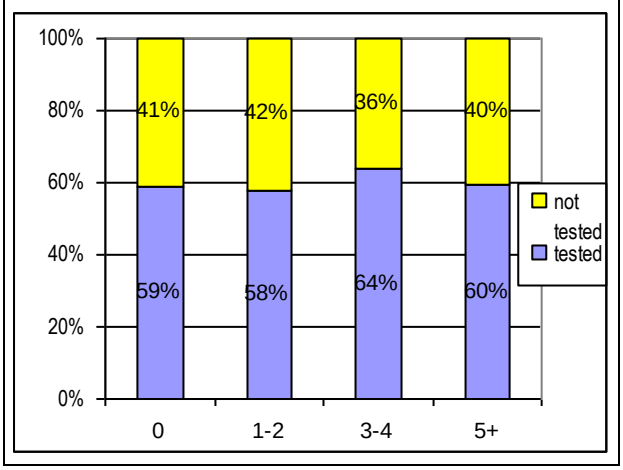
Figure 6.15 shows that average test participation for the combined groups above R6000/month (75%) was significantly higher (at 0.1%) than for the combined groups below R6000/month (46%). The significance of the association of higher pay with test participation holds for the permanent respondent group. Net pay was therefore proved to be a significant factor in HIV test participation.

Figure 6.15: HIV Test & Pay (consolidated)



Dependents and HIV test participation

Figure 6.16:Number of Dependents & HIV Testing



No significant relationship was identified between number of dependents and HIV test participation (Figure 6.16).

6.4.2.1 Summary of personnel demographics and participation in HIV testing

Initial analysis of personnel demographic data and participation in HIV testing (Section 6.3.2) suggested that of all demographic factors tested by this questionnaire, only 'number of dependents' was not associated significantly with test participation.

Table 6.4: Percentage Tested - Demographic Factors Associated with Brokered Status

Demographic Factor	Perm tested	Brok'd tested
% in blue-collar occupation	50%	36%
% educated beyond matriculation	78%	42%
% aged 16 to 29	68%	30%
% single/divorced	67%	36%
% net take-home pay <3000/mth	63%	33%

Further analysis identified the brokered staff group demographics to be skewed toward single factors, which as a result became associated with the significantly lower levels of HIV test participation in the brokered group (Table 6.4). All demographic factors were therefore analysed further to determine if employment status could potentially have been an overriding factor in determining an otherwise apparently proven association. This identified that the significant associations between HIV test participation and education, gender and marital status could potentially be a consequence of employment status. The independent association between the following factors and HIV testing have *not* been proven conclusively:

- Number of dependents;
- Educational attainment;
- Gender;
- Marital status.

The demographic factors proven to have been associated overall with higher rates of HIV test participation among this workplace population were:

- Permanent employment status;
- Age 30-39,
- White-collar and Technical occupations;
- Net monthly pay greater than R6000.

Of these, permanent employment status was the key distinguishing factor. As higher test participation rates may have been a consequence of permanent staff status supporting access to credit via insurance/bond testing, and access to medical insurance (and therefore ART cover) reasons for participation in HIV testing were analysed further. The results are reported in Section 6.8.

6.4.3 Personnel demographics and participation in on-site VCT

Personnel demographic data was used in conjunction with responses to the HIV test participation questions to determine the demographics of post-intervention and on-site VCT participation. Of the 223 respondents that knew their serostatus, 90 (40%) tested after the intervention and 61 (27%) tested using the on-site VCT facility. As the on-site VCT intervention did not coincide with half of the play/talk interventions (in contravention of best practice guidelines identified by the qualitative study, detailed in Chapter 4), it was not possible to determine whether those that had tested off-site after the intervention would have tested on-site if the facility had been available. No further analysis of demographics was therefore undertaken on this 'post-intervention VCT' group in this section, but the issue is explored further in Section 6.8.

The distortion of post-intervention test analysis caused by the lack of on-site VCT facility for half of the pre-intervention sessions (industrial theatre and PLWHA talks) increases the potential for bias in the analysis of the 61 respondents that did test on-site and extrapolation of data for this group should therefore be regarded with caution. Given that proviso analysis against the population of all respondents using the two-sample test of proportions at 5% identified no significant demographic factors associated with participation in on-site VCT. Significant differences were however identified when comparing those tested after the intervention against those that had not tested did. This is explored further in Section 6.8.

6.5 Personal Beliefs and HIV Test Participation

Personal beliefs (defined by responses to Q1.10-2.10), were grouped as follows:

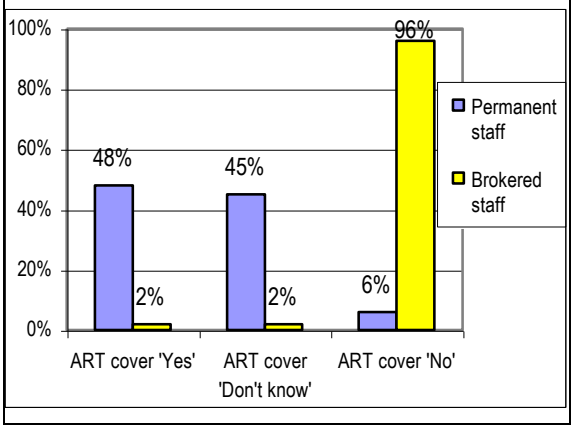
- Perceived access to ART cover;
- Agreement with the medical model of HIV/AIDS;
- Perceived proximity to HIV/AIDS death and PLWHA;
- Perception of existing HIV/AIDS infection among untested respondents.

Each group was analysed in conjunction with HIV test participation history (Q5.0 to Q6.3) to determine significant associations between personal beliefs and HIV test participation.

6.5.1 ART cover and HIV test participation

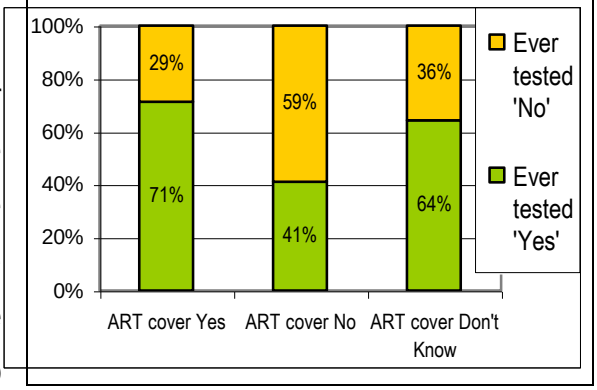
This question was used to determine whether perceived ART cover corresponded to the employer's intended provisions, and to determine whether it was associated with HIV test participation.

Figure 6.17: Perceived ART Cover



As noted in section 6.4, 97% of permanent staff had access to ART through the two primary medical insurance schemes, but 96% of brokered staff had no medical insurance cover and therefore no access to ART (Figure 6.17). Whilst all brokered staff without medical insurance cover (96%) were sure that they did not have ART cover, permanent staff were less clear. Only 48% of permanent staff was sure they had access to ART, 6% thought that they had no cover, and 45% were uncertain (Figure 6.17).

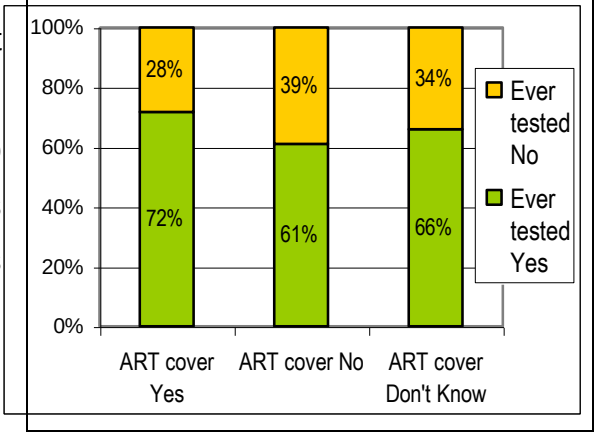
Figure 6.18: Perception of ART Cover and HIV Test Participation, <u>All</u> Respondents



There was a significant (at 0.1%) difference in test participation between those who believed they had no cover (41%) and respondents who were sure they had cover (71%) (Figure 6.18). There was also a significant difference with the group who were not sure (64%) (Figure 6.18) – implying that being sure of no access to ART was a significantly greater barrier to testing than being unsure.

Analysis of the permanent group identified that the differences between these groups were no longer statistically significant (Figure 6.19). This suggests that although no access to ART might be a barrier to testing, other factors may override this barrier in the permanent staff group. This is explored further in Section 6.8.

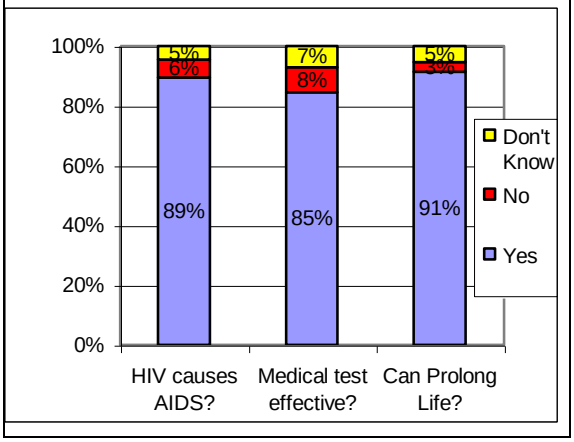
Figure 6.19: Perception of ART Cover and HIV Test Participation, <u>Permanent</u> staff



6.5.2 Belief in the medical model of HIV/AIDS and test participation

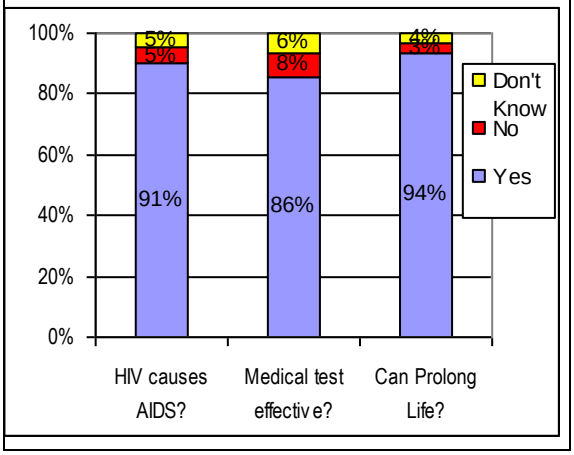
Survey questions 2.6 and 2.9-2.10 were used to identify whether the medical model of HIV/AIDS was accepted and whether there was any perceived benefit (in terms of prolonging life) in HIV test participation. If the medical model had been rejected and HIV testing deemed futile then it could be anticipated that there would be no perceived benefit in VCT.

Figure 6.20: Acceptance of Medical Model



The questionnaire findings identified a significantly higher acceptance of a causal link between HIV and AIDS among this workforce (89.5%) (Figure 6.20) compared with the general urban population (55.8%) (Business Day, 2003b). It was also generally accepted (85%) that a medical test could identify whether a person is HIV-positive (Figure 6.20). The percentage of respondents that believed people living with HIV/AIDS (PLWHA) could take action to prolong their lives had increased from 50% in March 2002 (NMG-Levy, 2002) to 91%.

Figure 6.21: Medical Model – Tested Only



No significant effect on test participation was detected due to any of these 'medical model' factors (Figure 6.21). There were also no significant differences identified between permanent and brokered staff groups. Acceptance of the medical model of HIV/AIDS was so high amongst this workplace population that it was not possible to detect any barrier to testing arising from its rejection.

6.5.3 Proximity to HIV and AIDS, and participation in HIV testing

Figure 6.22: Proximity to AIDS death, All staff vs. Permanent & Brokered staff

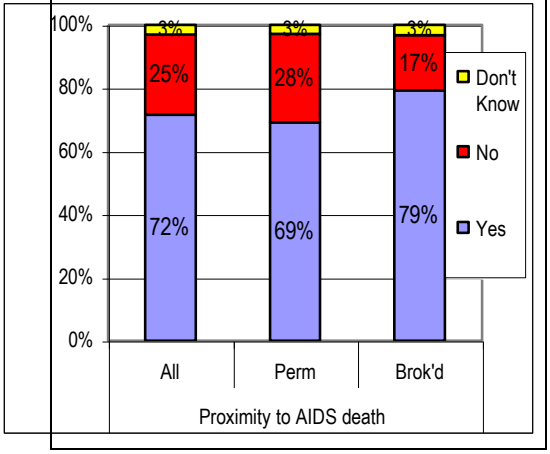


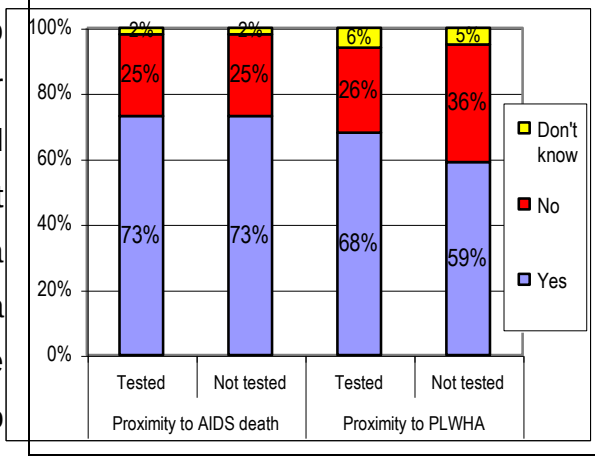
Figure 6.22 shows that the brokered staff group exhibited a higher (79%) (but not statistically significant at 5%) proximity to HIV/AIDS death than the permanent staff group (69%). The overall proportion of respondents that had known someone who had died of an HIV/AIDS related illness had risen to 72% (265) from 56% (222) in March 2002 (NMG-Levy, 2002).

The percentage of respondents that knew someone living with HIV/AIDS (64%) was significantly lower than proximity to AIDS death (72%), but had increased from 54% recorded in March 2002 (NMG-Levy, 2002).

The stigma surrounding HIV and AIDS is still such that people may ignore or disguise symptoms. Levels of disclosure are low, particularly among symptom-free PLWHAs. The cause of AIDS death may be attributed to the other infections, but colleagues and relatives may eventually come to believe that death was due to HIV/AIDS even if this was denied whilst living with the disease. The lower level of proximity to PLWHAs than proximity to AIDS death may therefore reflect low levels of disclosure.

The percentage of respondents that had tested (73%) and knew someone that had died of AIDS correlated closely to the percentage that had never participated but knew someone that had died of AIDS (73%). This indicates that proximity to AIDS death was not a significant factor in the decision to take a HIV test for the majority of workplace respondents (Figure 6.23) (see also Section 6.8.3).

Figure 6.23: Proximity to AIDS death and PLWHA –*Tested* versus *Not tested* groups



6.5.4 Belief in the likelihood of existing HIV/AIDS infection among untested respondents

The survey question 'What are the chances that you could already be HIV-positive?' (*Q*5.1), was used to assess the level of concern regarding HIV/AIDS infection among staff that did not know their serostatus. It was not possible to rescale this data, therefore mean data is not available for this analysis.

Table 6.5: Perceived Level of Existing HIV/AIDS Infection Among Untested Respondents

Column 1	2. Respondents		3. Likely/Very likely HIV+		4.Unlikely/Very unlikely HIV+		5. Neutral	
Not tested	No.	% Group	No.	% not tested	No.	% not tested	No.	% not tested
All	147	40%	27	18%	76	52%	44	30%
Permanent	87	31%	11	13%	53	61%	23	26%
Brokered	60	65%	16	28%	23	38%	21	35%

Of the 147 respondents who had not tested, 52% thought it unlikely or very unlikely that they were HIV-positive (Table 6.5, column 4), suggesting low risk perception. It should be noted however that the HSRC study found that "63% of participants that had no test participation history and subsequently tested positive did not think that they could possibly get infected by HIV" (Simbayi *et al*, 2003:64). The percentage that believed it was likely or very likely that they were already HIV-positive had fallen from the 39% reported in March 2002 (NMG-Levy, 2002), to 18% (Table 6.5, 3). Nevertheless, 27 untested respondents believed they could already be HIV-positive, but still failed to test. This belief was most common amongst brokered staff (28% thought it likely that they could already be HIV-positive). Amongst the permanent staff that felt they were at high risk, the demographic profile correlated closely to that for brokered staff (i.e. under 30, single, blue-collar occupation, net salary less than R3000 per month).

Surprisingly, untested respondents that believed they were likely to be HIV-positive rejected the statement 'It's best not to know your status'. This suggests that other concerns were overriding barriers to testing. Analysis of other beliefs indicated concern over confidentiality and company support, and a greater level of disagreement with the question 'If someone knows their status, can they do anything to prolong life?' than any other group (suggesting a perception that participation in HIV testing would be futile or threatening). These findings imply that further efforts to demonstrate confidentiality, company support and the benefits of HIV test participation are needed. Responses to the question 'What would

encourage you to take a HIV test?' however, identified rejection of all possible future interventions.

It is unclear what else could be done to encourage this group to be proactive in managing their health, but given the close correlation of demographic factors with brokered staff status and a higher rating for union support among this group, union involvement and support in any future VCT intervention could make a difference.

6.6 Perception of Stigma/Support and Participation in HIV Testing

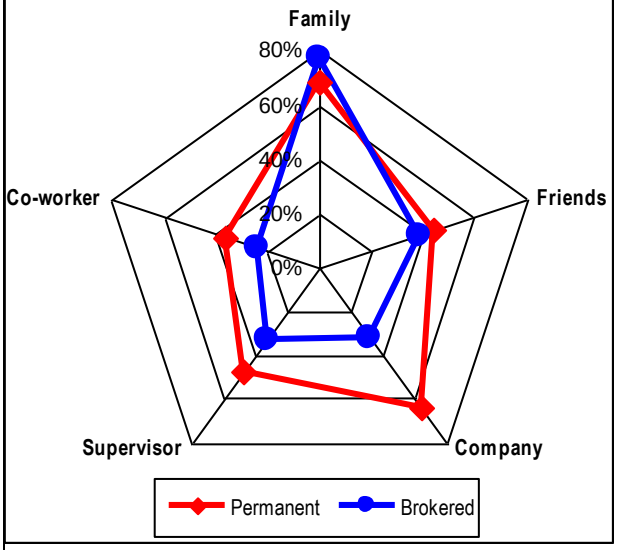
Personal beliefs (as defined by Q2.1-2.5 and Q3.1-3.6), were grouped as follows:

- Perception of other's reactions to PLWHA;
- Perception of workplace stigma and VCT confidentiality;
- Perception of acceptability of avoidance and non-disclosure behaviours.

These questions were used to identify perceptions of workplace and community support/stigma and any association with levels of HIV test participation.

6.6.1 Perception of other's reactions and participation in HIV testing

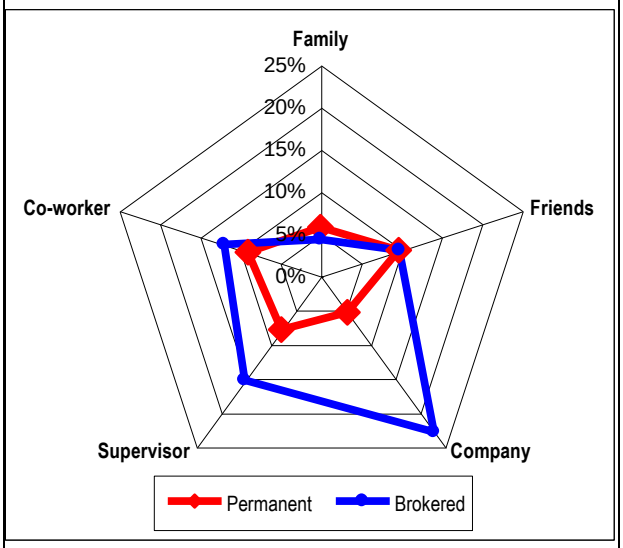
Figure 6.24: Perceptions of Support



NB: Figures 6.24 and 6.25 are to differing scales

The majority of respondents believed families would be supportive if they tested HIV-positive (68% of permanent and 77% of brokered staff) (Figure 6.24). Permanent staff were more certain than brokered staff that the company would be supportive if they tested HIV-positive (64% versus 32%). These findings suggest that all respondents, but particularly brokered staff, felt more threatened by stigma in the workplace and from friends than stigma at home.

Figure 6.25: Negative Perceptions (Stigma)



NB: Figures 6.24 and 6.25 are to differing scales.

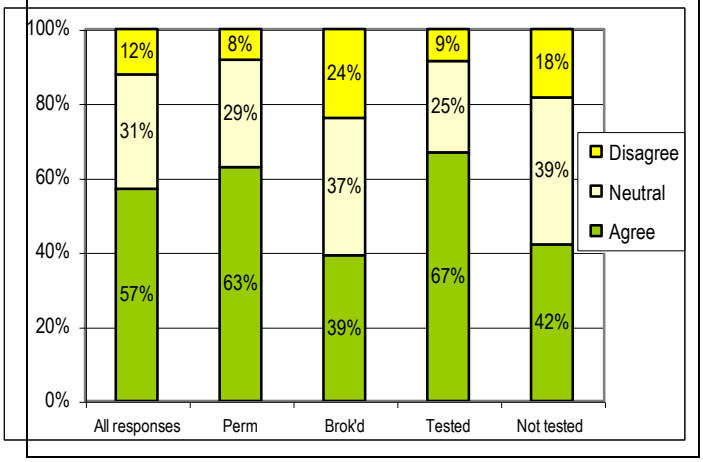
More brokered than permanent staff felt that the company would be hostile/angry or stop them working if they tested HIV-positive (23% of brokered staff vs. 5% of permanent staff) (Figure 6.25). This suggests that brokered staff (without the same level of employment protection as permanent staff) feared workplace stigma most. Permanent staff were more concerned by co-worker (9%) or supervisory (8%) stigma than that from the company (5%). This suggests that permanent staff were aware of and accepted supportive company policies but still had some concern at co-worker and supervisory levels of support for PLWHA.

A significant positive association was identified between respondents that perceived the company to be supportive among those that had participated in HIV testing (69%). There was also a significant negative association (at 1% significance) between respondents that perceived the company to be hostile, or felt that they could lose their job, and test participation (36%).

6.6.2 Perception of workplace stigma and VCT confidentiality, and participation in HIV testing

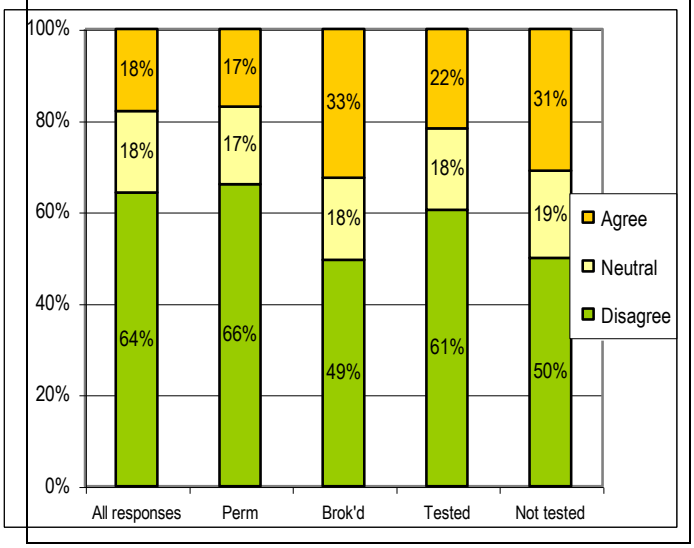
Responses to workplace stigma and VCT confidentiality questions (Q3.1-3.4) were used to identify whether perceptions of workplace support or stigma, and confidentiality (as a means of avoiding stigma) were associated with differing levels of participation in HIV testing. Mean, median and mode response scores tended toward positive perceptions of workplace support and confidentiality, but the brokered staff group registered greater perceived levels of workplace stigma and confidentiality concerns (Figure 6.26). Two-sample t-test comparison at 5% significance confirmed the statistical significance of these differences (i.e. brokered staff perceived significantly less workplace support).

Figure 6.26: Perceived Workplace Support, and Participation in HIV testing



Given that permanent staff perceived the workplace as more supportive, and were associated with higher test participation, it could be expected that perceptions of a supportive work environment would be highest among respondents that had tested. This proved to be the case (Figure 6.26).

Figure 6.27: Perceived Stigma & Lack of Workplace Confidentiality, and Participation in HIV testing



Similarly, stigma and confidentiality could be expected to be of less concern to respondents that had tested than those that had not. This was also proved (Figure 6.27).

Negative perceptions were significantly higher among those that had not tested (e.g. 29% believed management received VCT results versus 13% for those that had participated in HIV testing).

6.6.3 Perception of acceptability of avoidance and non-disclosure

Responses to avoidance and non-disclosure questions (Q3.5-3.6) were used to identify perceived acceptability of non-disclosure behaviours (failure to disclose HIV test participation or status to one's sexual partner), avoidance behaviours (perception that the threats surrounding HIV test participation outweigh the benefits), and whether these were associated with differing levels of testing.

Of those that had participated in HIV testing, 29% agreed with non-disclosure, suggesting that perceived difficulties in disclosure to one's sexual partner had not inhibited these respondents from participating in HIV testing.

Figure 6.28: Avoidance and Participation in HIV Testing

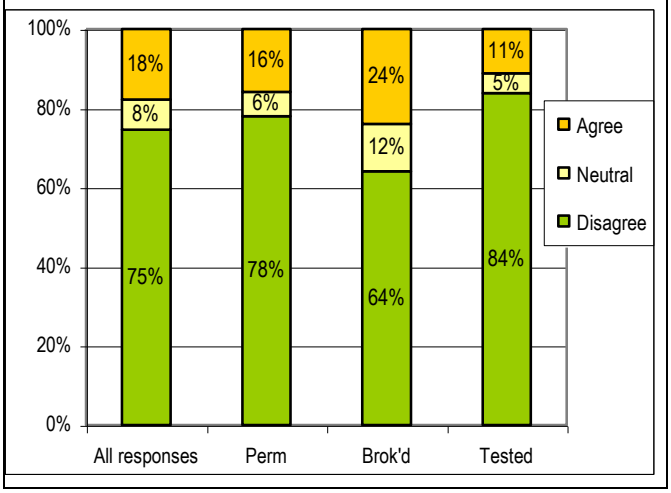


Figure 6.28 illustrates that 75% (276) of all respondents disagreed with avoidance. There was a significantly higher than average level of disagreement with the 'best not to know your status' view among respondents that had ever taken a HIV test (84%), indicating that HIV test participation (even if for reasons of external request) was associated with increased perceived benefits of HIV test participation.

6.6.4 Counselling language

Respondents agreed overwhelmingly with the statement 'It is essential that counsellors are able to talk to you in the language you use at home' (Q3.7). The mean rating was 4.3 (Agree), with a mode of 5.0 (Strongly agree). There were no significant differences between demographic or test status groups in this regard.

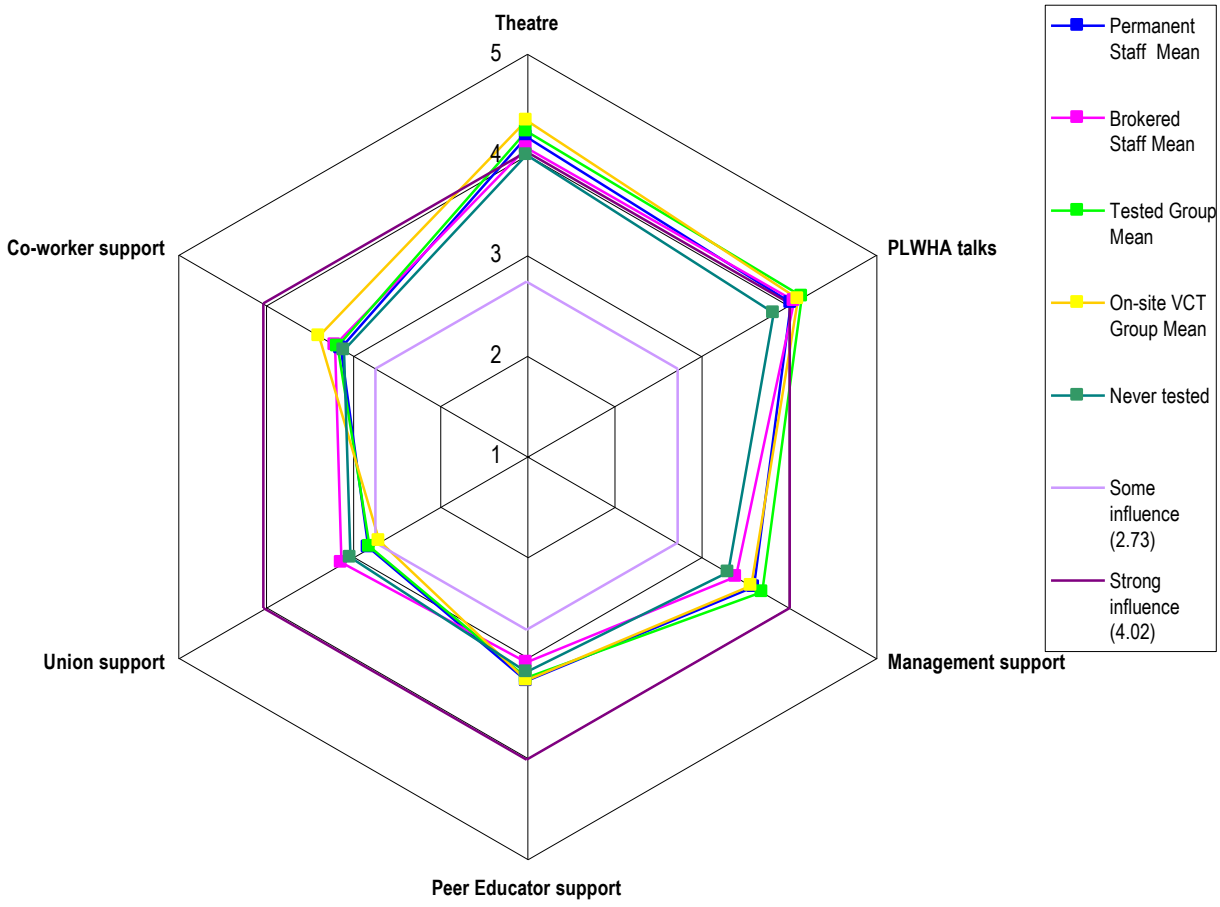
6.7 Intervention Influences

This section covers responses to the pre-VCT interventions (Q3.8-3.15), and to suggested possible future interventions (Q4.1-4.10). After initial analysis, questions concerning intervention convenience (Q3.8) and confidentiality (Q3.9) were omitted because of ambiguity in their wording. The remaining questions were used in conjunction with demographic data and HIV test history to determine response to the intervention, and factors associated with participation in HIV testing.

6.7.1 Analysis of the intervention - Contribution of pre-intervention in encouraging workers to participate in HIV testing

The industrial theatre presentation and PLWHA talks were consistently rated as a 'strong' influence across all groups. Figure 6.29 and Table 6.6 illustrate the consistency of the mean ratings for each factor and test status.

Figure 6.29: Perceptions of Intervention and Workplace Influence Effectiveness



The three factors whose mean scores were rated as strong influences were the industrial theatre, PLWHA talks and management support. Union support had a substantially lower mean and modal rating (Table 6.6).

Table 6.6: Pre-intervention Influences – By Test Participation

Factor		Mean	Median	Mode
Industrial Theatre	-Tested	4.22	Very strong influence	Very strong influence
	Not Tested	4.02	Very strong influence	Very strong influence
	On-site VCT	4.33	Very strong influence	Very strong influence
People Living with HIV/AIDS Talks	-Tested	4.16	Strong influence	Very strong influence
	Not Tested	3.86	Strong influence	Very strong influence
	On-site VCT	4.11	Strong influence	Very strong influence
Management support	- Tested	3.70	Strong influence	Strong influence
	Not Tested	3.33	Some influence	Some influence
	On-site VCT	3.58	Strong influence	Strong influence
Peer educator support	- Tested	3.23	Some influence	Some influence
	Not Tested	3.17	Some influence	Some influence
	On-site VCT	3.21	Some influence	Strong influence
Union support	-Tested	2.80	Some influence	No influence
	Not Tested	3.03	Some influence	Some influence
	On-site VCT	2.69	Some influence	No influence
Co-worker support	- Tested	3.17	Some influence	Some influence
	Not Tested	3.11	Some influence	Some influence
	On-site VCT	3.38	Strong influence	Very strong influence

The lack of on-site VCT facility for half of the pre-intervention sessions resulted in the possibility that 29 of the staff that tested off-site might have tested on-site if it had been available. This increased the potential for bias in the analysis of the 61 respondents that participated in on-site VCT compared to both the total CMSA respondent population or the group that had tested. Extrapolation of data for this group was therefore treated with caution. It was however noted that mean and mode ratings for the on-site VCT group indicated stronger perceptions of intervention influence than other groups (Figure 6.29 and Table 6.6). This was particularly noteworthy with regard to co-worker support. This suggests that those that did perceive co-worker support were encouraged to test on-site, but those that did not were inhibited from participating in on-site VCT.

Although the mode rating for union support was ‘some support’ for the on-site VCT group (Table 6.6), the mean score was the lowest of any sub-group (Figure 6.29). The generally poor rating for union influence may be a result of the withdrawal of support during the pre-VCT interventions (see Chapter 5).

6.7.2 Analysis of possible future interventions

Responses to future intervention questions (Q4.1-4.9) were used in conjunction HIV test history to determine association with participation in HIV testing.

6.7.2.1 Ranked assessment of possible future intervention influences

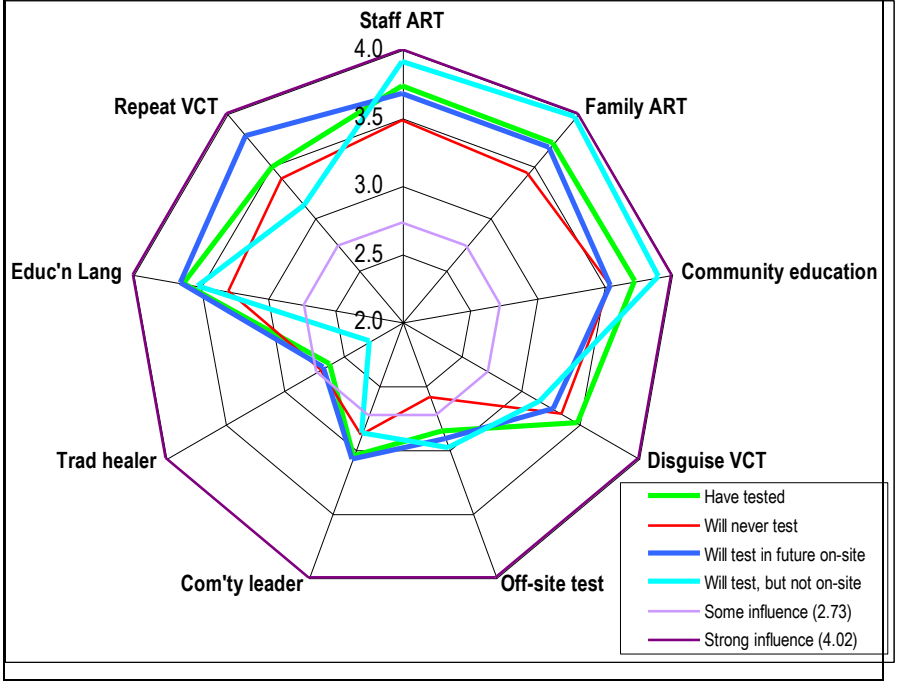
Table 6.7 shows that expanded ART provision and family involvement in future interventions were perceived to be the most effective of the future intervention options suggested. Traditional healer involvement was regarded as least effective.

Table 6.7: Possible Future Intervention Influences

Factor	Mean
Include partners/family in the education, plays/talks and test interventions	3.71 Strong
Ensure all staff have access to medicines to treat HIV/AIDS	3.70 Strong
Ensure all staff and their families have access to medicines to treat HIV/AIDS	3.70 Strong
Provide more information in languages other than English	3.56 Strong
Bring the HIV test service back every month to allow more time for people to chose to get tested	3.39 Strong
Offer workplace cholesterol/blood sugar tests at the same time to remove the stigma of HIV testing	3.39 Strong
Involve local community leaders in the workplace programmes	3.00 Some
Run the testing at off-site medical centres near work (not on-site)	2.86 Some
Involve traditional healers in the workplace programmes	2.57 Some

The brokered staff sub-group and those that had never tested rated 'disguise test' and 'repeat on-site VCT' significantly lower than all other sub-groups (Figure 6.30).

Figure 6.30: Future Intervention Effectiveness by Test Status



Unsurprisingly, staff that had tested on-site and those that had not taken a test but indicated that they would test on-site in future rated 'repeat on-site VCT' significantly higher than average (Figure 6.30).

6.7.2.2 Content analysis: Responses to the question 'What else has, or would have, got you to use workplace HIV testing services?'

Analysis of the 88 additional comments provided is summarised in Table 6.8.

Table 6.8: Content Analysis – What Else Had or Would Influence On-site VCT Uptake

Classification	No.	Perm/Brok'd	Comment
Nothing more	21	16 5	
Concern over confidentiality	15	8 7	
Suggestions	11	8 3	"Employ a Community Leader" "Put the play on at the same time as the VCT" (2) "Hold group discussions on stock-take days" "Allow more time for testing/repeat VCT" "Do this again in six months time" "Involve the mothers selling fruit outside" "Test people before they start work to get used to it" "Workers should organise who does the VCT, not the company" "Offer prizes" "The company must give us money for our status"
Convenient and no cost	9	7 2	
Communication error	7	4 3	Raised suggestions that were already part of the intervention (such as 'Give out counsellor contact number to make direct appointments')
Comments – positive	7	5 2	Appreciative of intervention
Access to treatment if tested positive	6	2 4	
Would have preferred off-site VCT arrangement	4	2 2	
Proximity	3	2 1	Commented that close proximity to PLWHA had made them especially want to get tested at the time of the on-site VCT intervention
Avoidance	3	2 1	Will not test until feel unwell or there is a cure
Comments- negative	2	2 0	"This was a waste of time and creates discrimination" "The programme was too westernised and increased stigma. It must be Africanised"

The mode for all comments was 'Nothing more', possibly indicating that the pre-VCT intervention had been comprehensive, but this could also indicate AIDS fatigue or 'questionnaire fatigue' as this question was near the end of the survey. The second highest response indicated continued concern over stigma and confidentiality as the foremost barrier to on-site VCT for those providing comments.

6.8 HIV test Participation among the CMSA Workforce

The analysis of demographics, beliefs and influences covered in sections 6.4 to 6.7, primarily sought to determine statistically significant associations between the potential influencing factors identified through the literature review and qualitative research process and participation in HIV testing for this workplace population.

This section seeks to expand the analysis of responses to 'Have you ever taken a HIV test?' (Q5.0) to determine whether HIV testing for reasons of external request (pre-natal and insurance/bond application – see section 5.1.3) affected HIV test participation significantly, and if so, to identify any statistically significant differences between the demographics, beliefs and influences of those testing voluntarily versus those testing for reasons of external request (Figure 6.31).

These questions were also used to identify any statistically significant differences between the demographics, beliefs and influences affecting the sub-groups of respondents that had not tested (Figure 6.31).

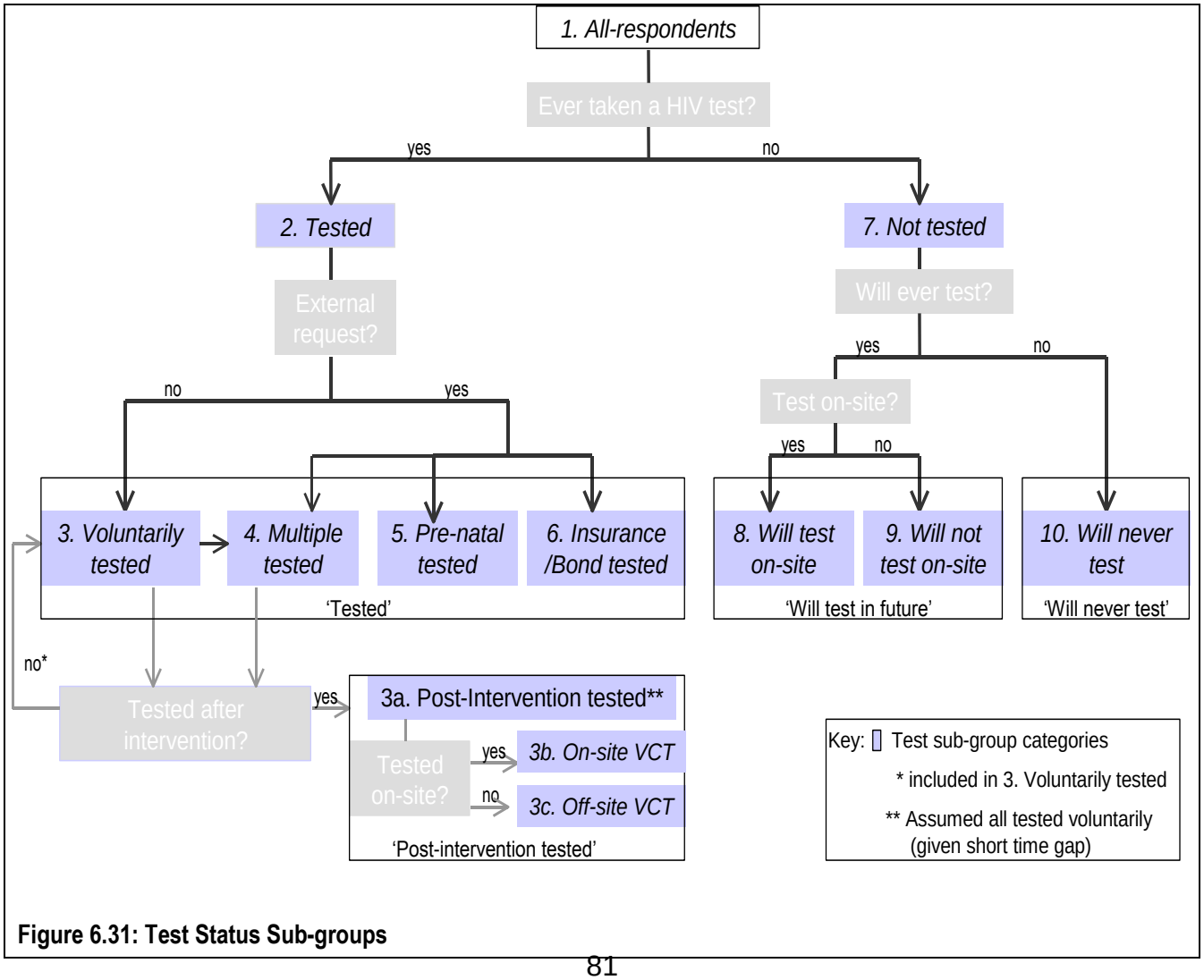


Figure 6.31: Test Status Sub-groups

6.8.1 Demographics and beliefs associated with testing

This section identifies predominant personnel demographic factors, personal beliefs and intervention influences associated with each of the sub-groups that had participated in HIV testing (see Figure 6.31).

1. Demographics

Table 6.9: Voluntary versus Insurance/Bond and Pre-Natal Testing

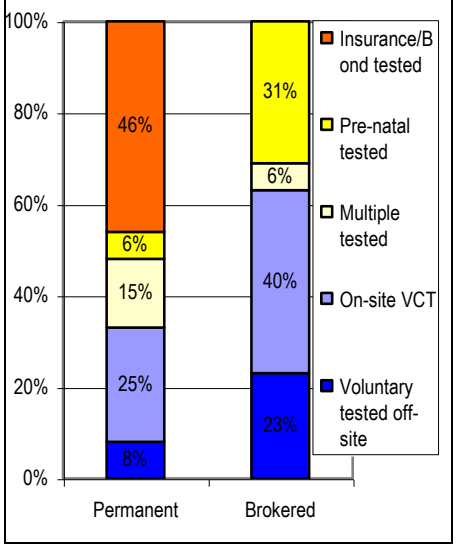
	2. Tested		3. Voluntarily		4. Multiple		5. Pre-natal		6. Insurance		3a.Post-Interv'n		3b. On-site	
	No.	% of total	No.	% of tested	No.	% of tested	No.	% of tested	No.	% of tested	No.	% of tested	No.	% of tested
All	223	60%	84	38%	31	14%	21	9%	87	39%	90	40%	61	27%
Permanent	190	68%	63	33%	29	15%	11	6%	87	46%	71	37%	48	25%
Brokered	33	36%	21	63%	2	6%	10	31%	0	0%	19	58%	13	40%

NB: Respondents that had participated in more than one category of test (Multiple tested) were excluded from further analysis. Columns 3a (tested after the play/PLWHA talks intervention and 3b (On-site VCT, also following the intervention) are a sub-set of Column 3 (Voluntarily Tested).

Of all 370 respondents, 223 (60%) had tested for HIV/AIDS. There is a statistically significant (at 0.1%) difference in HIV test participation between the permanent and brokered staff groups - only 36% of brokered staff had ever been tested for HIV/AIDS but 68% of permanent staff had tested (Table 6.9, column 2).

Of the 190 permanent staff that had tested, 98 (52%) had done so solely for external request (insurance/bond or for pre-natal) test reasons (Table 6.9, columns 2, 5 & 6 and Figure 6.32), i.e. external request remained the primary reason for permanent staff to have tested.

Figure 6.32: Voluntary versus. External Request



Only 63 (33%) of the permanent staff group had tested purely voluntarily (Table 6.9, column 3 and Figure 6.32). Of these, 48 (76%) participated in the on-site VCT intervention in October 2003 (Table 6.9, column 3b). Additionally, 23 permanent staff tested off-site after the play/talk intervention (Table 6.9, columns 2a & 3a), giving a total of 71 permanent staff that tested after the intervention. This accounted for the majority (77%) of the total of 92 staff that had tested voluntarily plus those that had tested for multiple reasons.

No brokered staff had taken an insurance/bond test (Table 6.9, column 6). Of the 33 brokered staff that had tested, 63% tested voluntarily. The play/talk intervention encouraged 19 brokered respondents to test, and 13 tested on-site. Although starting from a lower base, the interventions were effective for a higher proportion of brokered than permanent staff (Figure 6.32 and Table 6.9).

In summary, the theatre/talks encouraged a total of 90 staff to test (Table 6.9, columns 3 and 3a). Given the short (six week) period between the start of the intervention and questionnaire administration, it was assumed that few, if any tested by external request, but it was not possible to ascertain how many of the 29 staff that tested off-site would have tested on-site if the facility had been available. Nevertheless the majority (78%) of respondents that had tested voluntarily (including multiple tests) tested after the intervention - even if not for the first time.

Table 6.10: Tested Sub-group Demographics

Tests of significance (z)	Ever tested	Insurance/Bond only	Pre-natal only	Voluntary test	On-site
Permanent vs. Brokered	***	***	**		
Blue-collar vs. Technical	***	**			
Tech vs. White-collar	**	**			
White- v Blue-collar	*	**			
Matric+ vs. other/matric	***	***			
Age 16-29 vs Age 30-39					
Age 30-39 vs. Age 40+	*				
Age 40+ vs. Age 16-29					
Married vs. Single	*	***		*	
Pay <6k vs. 6k+	***	***			
Med Ins vs. No Ins	***	***	*		

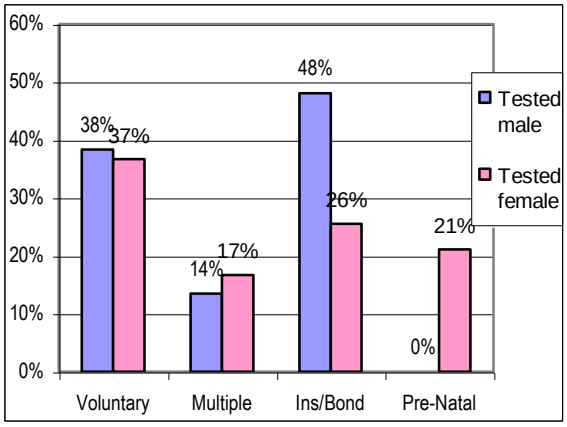
Key: significant negative association; significant positive association

*** test of significance at 0.1%, ** at 1%, * at 5%

Table 6.10 illustrates the significance of occupation, education, age, marital status, salary and medical insurance cover (and therefore access to ART), in addition to employment status for respondents that had tested. All these factors, except age, were mirrored for the Insurance/bond test group (Table 6.10). This suggests that insurance/bond testing in the largest (permanent) staff group skewed the demographic profile of all those tested. It also supports the finding that permanent employment status (supporting access to credit requiring HIV testing) was the primary factor associated with HIV testing in this workplace population.

Pre-natal testing is necessarily gender specific, and pre-natal test participation was highest in the brokered staff group (23% of brokered female staff versus 12% of permanent female staff). Further analysis of reasons for testing by gender, confirmed no significant difference between male and female voluntary test participation, and male dominance in insurance/bond testing balancing female

Figure 6.33: Test Reason by Gender



dominance in pre-natal testing, resulting in equivalence in external request testing too (Figure 6.33).

2. Beliefs

Table 6.11: Beliefs – Tested Sub-groups

Tests of significance (z)	Ever tested	Insurance	Pre-natal only	Voluntary	On-site
Company supportive		***			
VCT decreases stigma		*			
Management get results		*			
Everyone know	*	**			
Can't disclose					
Best not know	*	*		*	

Key significant negative association
significant positive association
*** test of significance at 0.1%, ** at 1%, * at 5%

Confidentiality concerns were lowest among those that tested for insurance/bond application (Table 6.11). HIV/AIDS proximity and belief in the medical model of HIV/AIDS were too high to register as barriers to testing for any of these groups.

3. Intervention influences

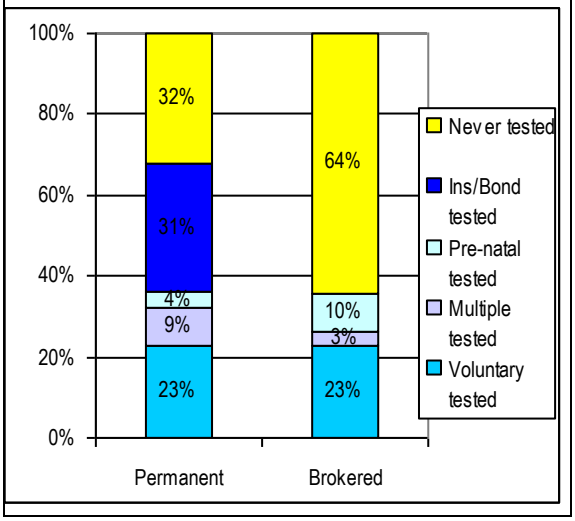
No significant differences were identified with regard to pre-intervention or possible post-intervention influences and tested sub-groups.

6.8.2 Demographics, beliefs and influences associated with not testing.

This section identifies predominant demographics, beliefs and intervention influences associated with each of the groups that had not tested (see Figure 6.33)

1. Demographics - Not Tested Sub-groups

Figure 6.34: Employment status vs Serostatus



As detailed in section 6.8.1 and illustrated in Figure 6.34, brokered staff were associated with significantly lower rates of participation in HIV testing. This difference was primarily associated with the absence of testing in order to access credit. There was a close correlation between the proportions of staff that had participated purely voluntarily in the two employment status sub-groups.

Of 147 respondents that had not tested, 110 (75%) indicated that they would participate in HIV testing in future, and of these 56 indicated that they would test on-site (Table 6.12, columns 7 & 8). The presence of this large group of potentially willing test participants (30% of the total population) indicates potential shortcomings in the effectiveness of interventions to date, but does also indicates the significant potential for future increase in knowledge of serostatus.

Table 6.12: Future Test Intentions of Respondents that had Not Tested

	7. Untested		8. Will test on-site		9. Will test, not on-site		10. Will never test	
	No.	% of Total	No.	% of untested	No.	% of untested	No.	% of untested
All	147	40%	56	38%	54	37%	37	25%
Permanent	88	32%	30	34%	30	34%	28	32%
Brokered	59	64%	26	44%	24	41%	9	15%

Note: Column numbering corresponds to numbering convention used in Figure 6.33

Factors typically associated with brokered staff status (blue-collar occupation, lower educational attainment, age under-30, single marital status, net pay less than R6000/month and no medical insurance) dominated respondent groups that indicated that they had not yet tested but would test in future (Table 6.13).

Table 6.13:Not-tested - Demographics

Tests of significance (z)	Never tested	Will test on-site	Will test off-site	Will never test
Permanent vs.Brokered	***	***	***	
Blue-collar vs.Technical	***	**	**	
Technical vs.White-collar				
White- vs.Blue-collar	***	**	**	
Matric+ vs.other/matric	***	**	**	
Age 16-29 vs.age 30-39	***	*		
Age 30-39 vs.age 40+				**
Age 40+ vs.age 16-29				**
Married vs.Single	*		**	
Pay <6k vs.6k+	***	**	***	
Med Ins vs.No Ins	***	***	**	

Key: significant negative association; significant positive association

*** test of significance at 0.1%, ** at 1%, * at 5%

As the majority of brokered staff were under-30, this may suggest recognition of growing need to participate in HIV testing, perhaps with a new sexual partner, or to access credit if made a permanent staff member.

The only significant demographic factor among respondents that indicated that they would never test was a predominance of the over-40 age group (Table 6.13). Employment status was not significant for this group, (Table 6.12, column 9). These findings suggested avoidance or low risk perception among this group (see below).

2. Beliefs – Not Tested Sub-groups

Of respondents that are still planning to test for the first time, lack of access to ART (associated with brokered staff status) was a significant barrier.

Doubt over on-site VCT confidentiality was a significant concern for those that will only test off-site (Table 6.14). This group also contained the highest proportion (28%) of respondents that felt it likely that they were already HIV-positive (Figure 6.34).

Table 6.14: Not-tested Sub-group - Beliefs

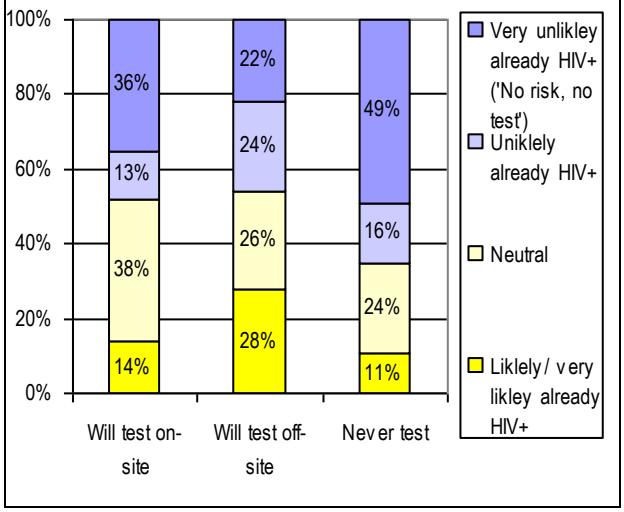
Tests of significance (t)	Never tested	Will test on-site	Will test off-site	Will never test
Company supportive	*			
VCT decreases stigma				
Management get results	**		**	
Everyone will know	**		*	**
Can't disclose to partner				
Best not to know	**			***
likely HIV+ vs.unlikely HIV+	**	***	*	***

Key: significant negative association; significant positive association

*** test of significance at 0.1%, ** at 1%, * at 5%

Significant factors for the 'Will never test' group were concern over co-worker stigma, perceived lack of benefit of test participation and a lower risk perception (Figure 6.35 and Table 6.14).

Figure 6.35: Not-tested Sub-group Risk Perception



It was notable that of the three untested sub-groups, the 'Will never test' sub-group held the lowest perception of risk, possibly associated with monogamous relationships, 'othering' (perceiving HIV/AIDS to be something that happens to other groups) or possibly that this predominantly aged 40+ group finds the subject of HIV/AIDS (and its sexual transmission mode) as a culturally unacceptable lecture or discussion topic. The 'No risk, no test' attitude towards non-participation was highest among the 'Will test off-site' group, suggesting a higher level of fear of workplace stigma and discrimination among this group.

3. Influences – Not Tested Sub-Groups

Respondents who indicated that they would test in future on-site rated repeating the on-site VCT intervention significantly higher than average. This suggests that simple repetition of the third-party on-site VCT over a longer time period may be effective (although potentially with diminishing impact over time) in increasing HIV test participation among these 56 respondents.

The 37 respondents that indicated that they would never test rated almost all past and potential future VCT intervention influences lower than the average for untested respondents. This suggests that factors outside the influence of the workplace intervention inhibited HIV test participation for this group.

6.8.3 Comparison of 'Voluntarily tested' and 'Not tested' sub-groups

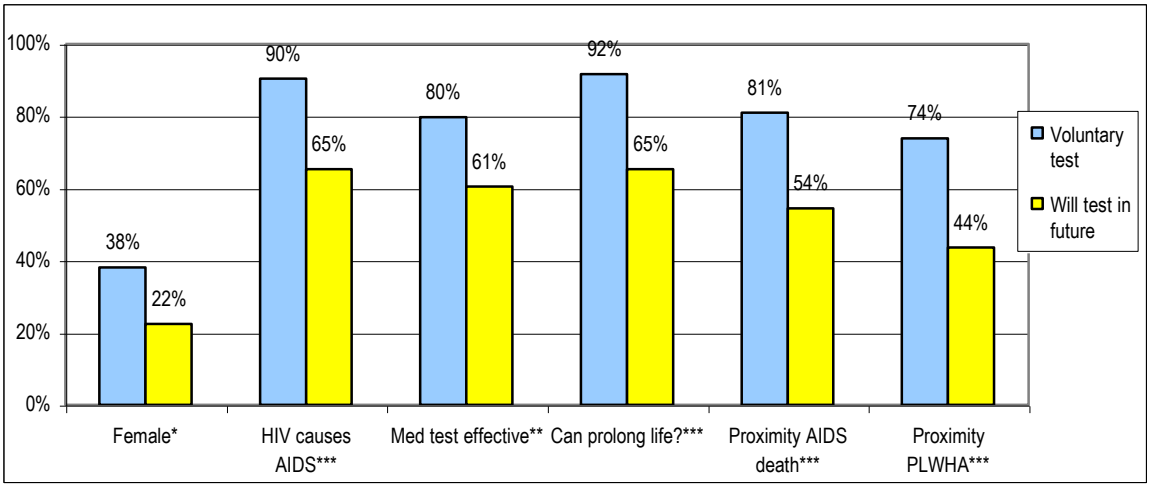
1. Demographic and Belief Factors

Analysis comparing demographic factors and beliefs and influences for the group that had participated in voluntary testing (on- or off-site) against the total population failed to identify any statistically significant differences. As previously detailed, insurance/bond testing dominated to the extent where it masked other key factors.

Given the importance of determining the factors that influenced those who participated in HIV testing voluntarily, and of determining the barriers to testing for those that have not participated, further analyses were undertaken. The responses for all those that tested voluntarily were compared with responses from the group that had not tested but indicated they would in future. The responses that differed significantly are discussed below.

The 'Voluntarily tested' group identified significantly greater proximity to PLWHA/AIDS death, acceptance of the medical model of HIV/AIDs and belief that knowledge of serostatus supports action to prolong life when compared with 'Will test in future' sub-groups (Figure 6.36). This analysis also identified male gender and as a significant barrier to test participation (i.e. whilst there was no significant difference between male and female participation in voluntary testing (Figure 6.33), males were significantly more likely to have not tested (72% vs 28% of the untested group). Analysis of 'All-respondent' data (Section 6.4.2) failed to prove an association with test participation for any of these factors, this further analysis supported these associations statistically. Medical insurance/ART and educational attainment factors, however, remained too closely linked to employment status to prove an independent link with test participation.

Figure 6.36: Comparison of *Voluntary* versus *Untested but Will Test in Future* sub-groups – Significant differences only



Key:*** at 0.1% test of significance, using two-sample test of proportions ** at 1%

The group that indicated they would test in future were predominantly brokered staff. This suggests that factors associated with brokered employment status acted as a barrier to participation (see Chapter 7). Given that turnover of staff is higher in

this group, this could include limited exposure to IEC prior to this intervention, supporting the findings from the qualitative study with to regard repetition of interventions over time.

The significant beliefs and influences identified in the 'Voluntarily tested' sub-groups were mirrored for both of the post-intervention tested subgroups (tested on- or off-site after the theatre/talks). This was expected given their close correlation.

2. Influences

Although the industrial theatre and PLWHA talks were found to have been particularly well regarded by the 24% of staff who tested after the intervention, the mean ratings for these interventions were not significantly different to that for the untested group. This supports the literature review and qualitative study findings that knowledge is insufficient in itself to overcome all other barriers to testing.

6.8.4 Summary of factors affecting participation in VCT

A summary of the significant differences between the 'Voluntarily tested' and 'Will test in future' sub-groups (that is, after external request influences have been removed) are listed in Table 6.15, column 2.

Findings from the first stage analysis of all responses are shown in column 1, together with HSRC study findings (2002) in column 3. The findings of this study into factors affecting HIV testing in the workplace can be seen to have supported, but narrowed, those of the national HSRC (2002) study with respect to significance of age, and higher socio-economic status, and do not disprove the effect of educational attainment on HIV test participation. Race and religion were excluded from this study, and all CMSA respondents lived in urban locations therefore comparisons cannot be made with HSRC data in this respect.

Table 6.15: Statistically Significant Demographic and Belief Factors Associated with HIV Testing

1. All Respondents (see section 6.4.2)	2. Voluntarily Tested vs. Not tested (see section 6.8)	3. HSRC Studies of SA Population
Positive associations: Age 30-39 Permanent employment status Net income greater than R6 000/month White-collar/Technical occupation Company support (including non-discrimination and anti-stigma policies) Senior management support VCT confidentiality	Positive associations: Age 30-39 Permanent employment status Net income greater than R6 000/month White-collar/Technical occupation Company support (including non-discrimination and anti-stigma policies) Senior management support VCT confidentiality Proximity to HIV/AIDS Acceptance of medical model of HIV/AIDS Belief that people that know their sero-status can take action to prolong life *On-site VCT only:* Co-worker support Peer-educator support	Age 25-49 High socio-economic group Education beyond matriculation Race Religion Urbanisation Proximity to HIV/AIDS
Proven barriers to testing: Brokered staff status Lack of access to medical aid/ART Lack of support/confidentiality Low perception of risk	Proven barriers to testing: Brokered staff status Lack of access to medical aid/ART Lack of support/confidentiality Low perception of risk Male gender	

An assessment of these key findings is included in Chapter 7 (Key Findings and Conclusion).

7 KEY FINDINGS AND CONCLUSION

This chapter provides a summary of the key findings of this study and provides comparative analysis of VCT participation with the national population of SA. Conclusions regarding the effectiveness of this intervention are provided together with recommendations for successful workplace VCT interventions based on lessons learned. Elements of the intervention that did not conform to best practice identified during the qualitative study are summarised, and the effect of non-conformance evaluated. Finally, areas for further research are recommended.

7.1 Quantitative Study Key Findings Summary

The process of developing demographic, belief and influence profiles for this workplace population with regard to HIV testing identified twelve test status sub-groups (Figure 7.1), each with its own demographic, belief and influence profile. The key findings relating to demographics, personal beliefs and intervention influences are summarised below in three principal groupings – for all respondents, for those tested, and for those not tested.

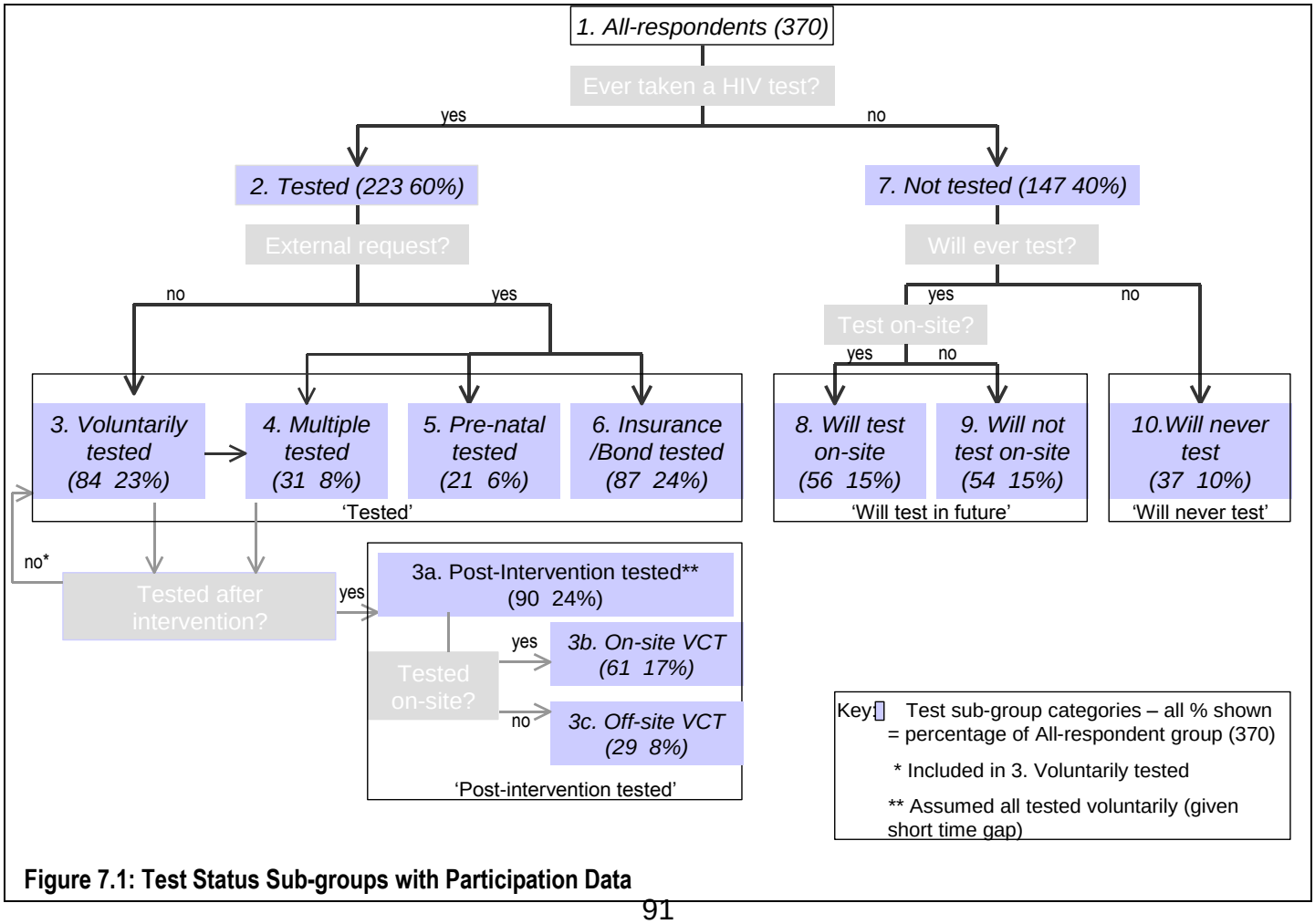


Figure 7.1: Test Status Sub-groups with Participation Data

7.1.1 Summary – all respondents

This section summarises key findings arising from the quantitative research analyses of all respondent data, identifying significant differences in demographics, beliefs and intervention influences between tested and untested groups.

The proven statistically significant demographic factors associated with participation in HIV testing amongst this workplace population (Section 6.4.2.1) were:

- Employment status;
- Occupation;
- Income;
- Age.

Of these, employment status was key – with permanent staff significantly more likely to have tested. The significance of income and occupation reflects increased insurance/bond testing as access to credit increased with income and status.

Higher levels of HIV test participation in the 30-39 age group may reflect increasing insurance/bond testing with maturity, which then reduces for those that already had access to credit before compulsory testing in support of insurance/bond application became common. It might also indicate an increased willingness to take responsibility for health issues with maturity and responsibility for young dependents, or that perceived risk (perhaps associated with celibacy and monogamous relationships) is lower in the under 30 and 40+ age groups.

Acceptance of the medical model of HIV/AIDS was so high overall - significantly higher than the adult population of SA as a whole (Business Day, 2003) - that it was not possible to detect any barrier to testing arising from it (Section 6.5.2).

Associations between perceived company support, VCT confidentiality and HIV testing were also significant. The findings revealed a positive influence for those that perceived employer support for PLWHAs, and VCT confidentiality, and a barrier for those that perceived employer, supervisory or co-worker hostility. Negative perceptions of support and VCT confidentiality were significantly greater among respondents that had not tested (Section 6.6).

Respondents agreed overwhelmingly that it was essential that counsellors were able to provide pre- and post-test counselling in the language that participants

used at home. This has important implications in the provision of on-site VCT, particularly in medium-sized enterprises with limited occupational health resources (Section 6.6.4).

While CMSA's baseline survey had indicated that English was the preferred education and information language for 73% of staff (NMG-Levy, 2002), this study clearly identified the growing importance of providing information in other languages (Section 6.7.2), reflecting the positive reaction to the pre-VCT and VCT interventions that utilised other languages, and the availability throughout the intervention of wellness management literature in multiple languages (Chapter 5).

The industrial theatre presentation and PLWHA talks were consistently rated as strong influences across both tested and untested groups (Section 6.7), suggesting this intervention method is useful, but not in itself sufficient to drive VCT participation. Management support was also rated as a strong influence by all tested sub-groups, reflecting the importance of senior management support in successful workplace interventions as identified in the literature review and qualitative study findings (Section 6.7).

The low rating for union support among respondents that had tested, and especially those that tested on-site (Section 6.7) reflected the withdrawal of union support for the intervention until near its end (see section 5.2.3). This may have been a major barrier to participation for those who perceived non-support to equate to VCT confidentiality or quality concern. This endorses the literature review and qualitative study findings that participation of employee stakeholder representatives, and especially union representatives, is key to the success of workplace HIV/AIDS interventions.

Access to ART (for the employee and family members) and wider involvement of staff and their families in the education, information and test interventions were consistently rated as strong possible future intervention influences for all but the 10% of respondents that indicated they would never participate in HIV testing (Section 6.7.2).

7.1.2 Key findings summary - tested sub-groups

This section summarises findings that specifically related to those that had participated in HIV testing, either voluntarily before or during the intervention, or for external request reasons (unrelated to the intervention).

1. HIV test participation due to external request

There is a clear and significant association between testing solely for reasons of insurance/bond application and the higher test rates in the permanent staff group. Access to credit, requiring non-voluntary testing was found to be the primary cause of the disparity in HIV test participation between permanent and brokered staff groups (Section 6.8.1). The other external request factor - pre-natal testing - is necessarily gender specific and was highest among brokered staff (see section 6.8.1).

Although the high overall level of HIV testing amongst permanent staff (68%) might initially imply that the majority of this workplace population utilised VCT as a component of personal healthcare, the high number who tested for external request (36%) and low level of multiple testing (participation in VCT as well as for external request) (9%), indicated that this is not the case. This suggests that apathy and complacency remain critical barriers to annual testing as a regular component of healthcare and that they were not addressed sufficiently by this intervention. Workplace VCT interventions must address complacency, avoidance behaviour and 'othering' forcefully, particularly in light of the HSRC (2002) study finding regarding the inaccuracy of personal risk perception among HIV-positive participants.

2. Voluntary testing

By excluding the distorting effect of testing for external request reasons, further significant factors identified as associated with voluntary test participation in addition to those noted in section 7.1.1 were:

- Proximity to HIV/AIDS;
- Acceptance of the medical model of HIV/AIDS;
- Belief that people that know their serostatus can take action to prolong life.

Surprisingly access to medical aid/ART was not identified as a significant factor because levels of voluntary participation were the same (23%) for both permanent (ART access) and brokered staff (no ART access) (Section 6.8.1).

Those that tested on-site rated co-worker and peer-educator support significantly higher than those that tested voluntarily off-site (Section 6.8.3), suggesting a link between perceived support and on-site test participation, and possibly that those fearing co-worker and peer-educator stigma were inhibited from on-site VCT participation.

7.1.3 Key findings summary - not tested sub-groups

This section summarises findings associated significantly with non-participation in HIV testing. This untested group was divided into those that indicated they would test in future, and those that would not.

1. Will test in future

Demographic factors for respondents that had not tested but indicated they would test in future largely mirrored those for brokered and blue-collar workers, i.e. male, age under 30, lower socio-economic status, and lower educational attainment. It is interesting to note that although access to ART was not a statistically significant association with test participation, *lack* of access to ART was a statistically significant association with *not* testing (see Sections 6.4.2 and 7.1.2. above).

This group gave the strongest rating to widening workplace support networks to include the immediate workplace community - access to ART for all staff members and their families, and the inclusion of partners and family in IEC received the strongest positive rating when asked what could be done by future interventions to increase VCT uptake (Section 6.7.2).

Brokered staff status was also associated with shorter length of service and higher staff turnover, making it likely that fewer staff in this group had participated in earlier IEC interventions, suggesting that IEC is most effective if repeated in a variety of formats over time.

Acceptance of the medical model of HIV/AIDS was not as high in this untested group as for those who participated in voluntary testing, suggesting a potential positive effect of the repetition of interventions over time (Section 6.8.3).

The group that indicated they would test in future on-site unsurprisingly rated the repetition of on-site VCT significantly more highly than other test sub-group categories, suggesting that they needed more time to come to terms with the concept of taking a HIV test. This could potentially encourage a further 56 (15%) additional staff to know their status. This group did, however, contain a number of respondents (20) who believed it very unlikely that they had come into contact with the HI virus. This 'No risk, no test' group whilst indicating willingness to participate at some stage, are likely (unless their circumstances change), to continue to feel justified in not testing unless persuaded to participate in HIV testing in support of their peers (leading by example to help reduce stigma surrounding VCT).

Perceived levels of workplace stigma, and fear that the respondent was already HIV-positive were highest amongst those that would not test on-site (Section 6.8.3). For this group failure to test appears to be associated with the lack of perceived employment protection afforded to brokered staff.

2. Will never test

The group that indicated they would never take a HIV test was predominantly aged over-40 and had the lowest perception of risk of all untested sub-groups (section 6.3.9.3). This suggests higher risk reduction behaviours (celibacy or monogamous relationship), 'othering' or avoidance. Whilst 49% of this sub-group indicated 'No risk, no test' behaviours, 51% acknowledged some risk.

This 'Will never test' group rated almost all past and future influencing factors lower than the average for all untested sub-groups, possibly suggesting that factors outside the influence of workplace interventions inhibited HIV test participation, or that this group finds HIV/AIDS an unacceptable lecture/discussion topic in the workplace.

7.2 Findings of Tests of Propositions

The findings of the qualitative and quantitative studies generally supported the propositions arising from the literature review (Section 2.8) that key demographic factors, personal beliefs and external intervention influences can support or undermine test participation (see Table 7.3 for sub-proposition findings).

Each tested and untested population sub-group in this workforce comprised differing demographic, belief and influence profiles, supporting the proposition that support factors and barriers affect individuals in a myriad of combinations according to the interplay of influencing factors and personal circumstance. As identified in a WHO/UNAIDS study (2001a:1) "VCT is not a uniform intervention….and should be flexible and able to adapt to the needs of the population(s) it serves. It is unlikely that one model will be suitable for all populations".

Table 7.1: Sub-proposition Findings

Sub-propositions	Findings (see Table 6.15, Column 2)
HIV test participation is influenced by:	*Association with HIV testing was proved for:*
1. Personal demographic factors, and ability or perceived ability to pay for or access treatment for HIV related illness or ART.	1. Permanent employment status, age 30-39 & white-collar/technical occupation and net salary greater than R6000/month Association with race was not tested. Association with educational attainment and access to medical aid was not proven statistically because of their correlation with employment status.
2. Belief factors including knowledge, attitudes and practices, cultural influences and proximity to (knowing someone who has or has had HIV/AIDS).	2. Proximity to PLWHA and AIDS death, VCT confidentiality, acceptance of the medical model of HIV/AIDS, and belief that those that know their serostatus can take action to prolong their lives. It was not, however, possible to test associations with religion or risk practices and accuracy of perceptions in this study.
3. External influences including socio-political context, perceived stigma and discrimination associated with HIV/AIDS and VCT, and workplace policies and practices	3. Prior effective IEC interventions (participation lowest among brokered (higher turnover shortest length of service, unlikely to have attended prior IEC)), perceptions of company, management, co-worker and peer-educator support and non-discrimination in the workplace. It was not, however, possible to test association with political influences in this study

7.3 Comparison of CMSA Workplace and SA Population Data

The findings of this research were compared to test participation data from the HSRC (2002) national study. While the accuracy of the HSRC extrapolated data has been subject to some criticism relating to the potential for bias (Bennett, 2003), it was the only available study of its size and kind to date to include HIV test participation data and to explore participant motivation.

Table 7.2: Workplace vs. SA populations – HIV test %		
CMSA surveys and HSRC findings	**Tested 2002**	**Tested 2003**
CMSA respondents		
All respondents	48%	60%
Permanent staff		68%
Brokered staff		36%
HSRC		
SA population (15-49)	19%	

The HSRC study reported that only 19% of South Africans aged over 15 interviewed had ever taken a HIV test (Simbayi *et al*, 2003). CMSA employees exhibited significantly higher rates of test participation (Table 7.2).

Table 7.3: Workplace vs. SA: Test Participation due to External Request	
Survey and HSRC finding	**% of popl'n**
CMSA respondents	
All respondents	46%
SA tested population aged 15+	
HIV-positive	14.8%
HIV-negative	37.5%

The percentage of CMSA staff that had tested solely for insurance/bond application was also higher than external request testing among the SA population (Simbayi *et al,* 2003: 64) (Table 7.3). This probably reflects the higher percentage of formal (permanent) employment enabling access to credit among the CMSA workforce (75% of staff), than for the SA population as a whole, where formal employment levels were estimated at only around 25% in the 2001 census (Statssa, 2003). Nevertheless, even at 23%, voluntary test participation, amongst CMSA staff participation was still significantly higher than the average for the population of SA, estimated at less than 10% (Simbayi *et al*, 2003). This suggests that the CMSA workforce had a better than average understanding of the need to take personal responsibility for their healthcare, and that the workplace had proved to be an effective environment for encouraging participation in HIV testing, albeit one that could be further improved.

7.4 Conclusions

This study found that the workplace is an effective environment for interventions aiming to increase knowledge of serostatus. Knowledge of serostatus after this intervention in a medium-sized company compared well with most best practice large enterprise interventions. Results to date also far exceed those of the adult population of South Africa.

Where CMSA staff test participation was lower than recorded at some of the large enterprise best practice implementers, this may be due to brokered staff data not always being included in published figures. It may also be associated with the areas of non- or limited-conformance to best practice.

Despite the high levels of knowledge demonstrated by respondents, it was proven that knowledge alone is insufficient to change behaviour and encourage regular testing – the ultimate aim of best practice HIV/AIDS interventions. Shortcomings in this intervention were identified as a result of the following findings:

- Whilst 68% of permanent staff had participated in HIV testing at some time, 36% had tested only for reasons of external request. Given that test participation among permanent staff increased by only 20% between March 2002 and October 2003, and only 9% had tested both voluntarily and for insurance/bond reason, the majority of the insurance/bond tested group could not have tested in the prior twelve months, indicating a degree of complacency and 'othering' that was not addressed sufficiently by the intervention;
- Only 24% of staff participated in HIV testing after the intervention, and 30% have yet to take a HIV test despite expressing willingness to test. This latter group indicated concerns with regard to stigma (particularly lack of supervisor, co-worker, union and peer-educator support), and confidentiality. These issues, together with indifference, lack of involvement in and commitment to the intervention by stakeholder representation, and unwillingness to lead by example, could potentially also have been addressed more effectively and forcefully during the intervention;
- 21% of respondents who had not tested but indicated they would in future thought it likely that they were already HIV-positive, but still failed to participate, indicating continued barriers to testing.

The remainder of this chapter compares elements of this workplace intervention with findings of the literature review and qualitative research, indicating where it conformed to best practice, and where it could have been improved.

7.5 Recommendations for Workplace VCT Interventions

Table 7.4 compares the CMSA intervention conformance to 'best practice' findings, listing only the elements found to have conformed fully and to have been found to have had a significant positive influence in this intervention. Table 7.5 lists non- and partial-conformance factors. Whilst all elements are assumed to support the overall success of VCT interventions, comments regarding quantitative study evidence of key elements of conformance and non-conformance are also provided.

Table 7.4: CMSA Intervention – Summary of Conformance to Qualitative Study Best Practice

Factor	'Best practice'	Notes
1.Strategy and implementation:		
Understanding the baseline position		
Baseline KAPB study and strategy	Yes	
Establishing pre-VCT intervention strategies:		
Strong management support	Yes	Management support was rated as a strong influence suggesting best practice guidelines for top-down support were met.
Published and publicised policy document	Yes	
Implementing IEC initiatives:		High levels of belief that people that knew their serostatus could prolong their lives indicated that information, education and communication elements had been effective in increasing knowledge of HIV/AIDS among CMSA staff. This did not however translate into high levels of inclusion of regular VCT in personal healthcare, confirming the findings of the literature review and qualitative study that such interventions must be part of a wider intervention to effect long-term changes in behaviours.
IEC campaign over prolonged period	Yes	
Content & format changes minimising AIDs fatigue	Yes	
Acceptance of the medical model of HIV/AIDS	Yes	85-89% acceptance of the medical model of HIV/AIDS.
Management anti-stigma/discrimination training	Yes	
Compulsory IEC attendance	Yes	The play/PLWHA talks were rated as strong influences by all test status sub-groups, but especially those that participated in voluntary testing and was therefore found to have been effective (this may not however have been the case if stigma and discrimination reduction measures, the development of negotiation and decision-making skills, and the levels of knowledge of the disease, its transmission modes, and risk reduction behaviours, had not been addressed in an earlier intervention).
PLWHA involvement	Yes	
Mixed groups, max 30	Yes	The play was run in conjunction with the PLWHA talks in groups of thirty, which was observed to encourage participation in discussion.
Develop post-VCT care and wellness strategy:		
Staff access to ART treatment	Perm Yes	See also table 7.5
Other wellness management support via NGO	Yes	
Perceived benefit in testing (can prolong life)	Yes	91% acceptance
Ensuring intervention effectiveness:		
Company/Supervisory support/non-discrimination	Perm Yes	See also table 7.5
Perceived VCT confidentiality	Perm Yes	See also table 7.5
2. VCT Implementation Logistics:		
On-site, 3rd party, home language counselling	Yes	Trust and confidence in the 3rd-party VCT service provider may however have been enhanced further if they had also provided the IEC service (increasing trust and confidence over time).
Confidential appointment and record-keeping	Yes	
Rapid test with ELISA confirmation	Yes	
End of shift post-test counselling-leave after result	Yes	
3. Suggested Future Intervention Factor		The provision of information in languages other than English was rated as important. Respondents also agreed overwhelmingly with the statement 'It is essential that counsellors are able to talk to you in the language you use at home'. This has important implications in the provision of on-site VCT, particularly in medium-sized enterprises with limited occupational health resources.
Strategy and implementation – potential influence:		
Provide IEC in languages other than English	Yes	
Access to ART treatment for families	Perm Yes	See also table 7.5

Table 7.5: CMSA Intervention – Summary of Non-conformance to Qualitative Study Best Practice

Factor	'Best practice'	Notes
1. Strategy and implementation:		
a .Establishing pre-VCT intervention strategies:		
Strong employee stakeholder support	No	The poor rating for union support confirmed that best-practice for employee stake-holder involvement were not always followed (in this case, political issues encroached on the intervention). This was a critical shortfall. As a result, the independence and confidentiality of the on-site VCT service was not endorsed 'independently', and confidentiality remained a concern for some respondents.
b.Developing post-VCT care & wellness strategy:		
Staff access to ART treatment	Perman't Don't know	The high percentage of permanent staff (45%) that did not know whether their medical insurance covered the cost of ART provision suggests a shortfall in knowledge and awareness of both medical aid scheme provisions. This lack of knowledge however was not proved to have been statistically significant in relation to non-participation in testing.
	Brokered No	The demographic factor most associated with non-participation in HIV testing was brokered staff status. Brokered status was associated with not having medical aid cover (and therefore no access to ART), and also significantly, with highest levels of belief that the respondent was already HIV-positive. Although the company had provided wellness management documentation to all staff, questionnaire responses such as "What would the company do for me if I tested positive?" suggest this was an area of weakness in respect of brokered staff (without access to company medical insurance schemes). Subscription to a disease management programme, including HIV/AIDS training in the induction training process for new recruits and wider communication of wellness management strategy over a longer period might help address this. As union objection to the long-term employment of brokered staff gains momentum, the issue of HIV/AIDS among brokered staff will increasingly become one that companies must address. Companies should consider inclusive strategies with regard to brokered staff and HIV/AIDS and wellness. Exclusion at this stage could become a vicious circle of deteriorating trust and confidence.
Other wellness management provided in-house	Limited	All staff (including brokered staff) had access to primary healthcare (including VCT and treatment for opportunistic infections) via the on-site occupational health clinic. Provision of services in the languages used at home was however limited. Contact information for governmental and NGO services, wellness management advice (through IEC, the provision of pamphlets and books in multiple languages, nutritional advice and heavily subsidised canteen services aimed at supporting wellness management) were available to all staff. Lack of treatment access for brokered staff and restrictions to access to services via medical insurance (due to accompanying confidentiality risks) for permanent staff were likely to have been barriers to testing. Subscription to specialised disease management services (see above) may have addressed this.

Table 7.5 Non-conformance Factor continued		Notes
c. Ensuring intervention effectiveness:		
Company/Supervision support/ lack of stigma and discrimination	Brokered Limited	The strong rating for company and management support, and non-discrimination among permanent staff indicates best practice conformance in these areas for this group. Supervisory staff were not however rated as highly suggesting continued perceptions of stigma and the potential for discrimination. Brokered staff in particular gave lower ratings for all of these groups. It was noted that this question could be ambiguous in that it could apply to the company providing the brokered staff service rather than CMSA, nevertheless the shortfall indicates lack of trust and confidence – a significant shortfall against best practice guidelines.
Peer-ed/Co-worker support/non-discrimination	Limited	Co-worker and peer-educator support were rated as strong influences only by those that participated in on-site VCT. This may suggest that for the majority of staff, potential peer stigma had not been addressed sufficiently to support a successful on-site VCT intervention. An alternative explanation of co-worker and peer-educator influence on testing could however be that they were not ranked highly by the majority of test participants because they were unimportant. If the union had not withdrawn support for this initiative, and had carried out (or been included in) a 'test of readiness' survey, these issues may have been identified up front and if required, action taken to address them before the intervention.
Perceived VCT confidentiality	Brokered Limited	Measures of confidence in VCT and occupational health service confidentiality were generally strong among permanent staff suggesting best practice conformance. Brokered staff rated confidentiality significantly lower suggesting non-conformance. This was a significant shortfall
2. VCT Implementation Logistics: Disguised test/test room not assoc'd with VCT	No	The third-party VCT service did not offer other test services. Participants could not therefore disguise the reason for their visit either from observers, or from supervision (if requesting absence for testing during working hours). The demand for disguising the service was not however strongly expressed.
VCT co-ordinated with pre-intervention initiatives	Limited	The VCT service was not strongly associated with the pre-VCT intervention, and did not coincide with half of the dates. This was a significant shortfall associated with loss of momentum in the intervention.
Extend VCT over time	No	Support for repeating the on-site VCT intervention, particularly among the 15% of staff that had not yet tested but indicated that they would test on-site in future, suggests that further repetition could be beneficial. In future this might be most effective if it were held as a regular event on an easily associated and communicable date such as on world AIDS day or stock-take days and action taken to ease accessibility for shift-workers.
3. Suggested Future Intervention Factor *Strategy & implementation – potential influence* Access to ART treatment for families	Brokered No	While brokered staff had access to on-site health services, their families did not. Strong demand indicates this was a critical shortfall.
Include partners and families in IEC	After VCT	Families were included in the play/talk intervention after the VCT intervention. This was well attended. Some staff requested additional pamphlets for distribution in their communities in support of their intention to pass on their knowledge to others. Families were however excluded from company funded VCT services. Strong

		demand indicates that not involving families before the VCT intervention was a best practice shortfall.
Duplicate intervention off-site	No	Demand not strong but could have helped address confidentiality weakness (above).
Involve local community leaders	No	Demand not strong
Involve traditional healers	No	Demand not strong among CMSA staff, however traditional healers are still in a position of influence and it should not be a major cost or resource burden to ensure they receive the right information to protect themselves and their clients.

7.6 Critical Strengths and Weaknesses of CMSA's Intervention

This section summarises critical elements of the CMSA intervention.

7.6.1 Strengths of the CMSA intervention

- Strong management commitment and company support backing non-discriminatory and anti-stigma policies and practices, generating high levels of trust and confidence among permanent staff;
- Strong information, education and communication initiatives over a prolonged period in multiple formats, resulting in high levels of HIV/AIDS knowledge and strong belief that people that know their serostatus can take action to prolong life;
- Strong in-house capacity to use third-party expert service providers;
- Strong links with NGO wellness management and PLWHA organisations.

7.6.2 Weaknesses of the CMSA intervention

- Union involvement in its HIV/AIDS programmes was poor and peer-educator involvement was not strong. There was some perception of continuing stigma and discrimination against PLWHAs at co-worker and supervisory levels;
- Brokered staff perceived themselves (and their families) to be disadvantaged with regard to wellness management provision and to company, co-worker and supervisor support;
- Weak community involvement.

7.7 Recommendations for Further Research

It is recommended that a quantitative study similar to the one detailed in this report be undertaken in other manufacturing companies participating in on-site VCT interventions to substantiate or disprove the specific elements of these findings and to increase the validity of generalising the findings to wider populations.

It is also recommended that this study be repeated over time within CMSA to determine the effectiveness of subsequent changes in the intervention format (especially union support for the intervention) and to assess the effect of increasing availability of ART treatment.

A qualitative study of employee's perceptions of HIV/AIDS workplace programmes (possibly utilising discussion group format) is also recommended to substantiate or refute what company managers and HIV/AIDS programme service providers have perceived to have been the critical success factors in increasing HIV test participation among workplace populations.

Research is also needed to confirm whether HIV testing does form part of an ongoing personal healthcare strategy in workplace populations (as has been found for high risk groups) leading to risk reduction behaviours and/or early access to the HIV/AIDS continuum of care (i.e. what proportion of those tested HIV-positive go on to participate in wellness management programmes including where required ART treatment).

Peer-educator programmes have been shown to be effective among high-risk groups. No research evidence is available on factors affecting peer-educator programme effectiveness in the workplace.

Further research needs to be carried out on small enterprises (10-100 employees), which do not have the financial or personnel resources of larger enterprises, to determine accessible models for successful HIV/AIDS interventions including VCT in such an environment. Research should also be undertaken into how large enterprises can effectively support suppliers and service providers in the roll-out of HIV/AIDS interventions, and whether the involvement of community partners and NGOs in large-enterprise interventions can effect benefits for businesses in that community.

Literature evidence identified the association of risk with occupations requiring workforces to be away from their families for prolonged periods (particularly in the mining, transportation and leisure industries). Large and medium enterprises tend to be associated with urban locations, increasing pressure for rural to urban migration in search of formal employment. Research is needed into whether this results in higher-risk behaviours among migrants.

Finally, it is recommended that research be undertaken to identify whether best practice workplace intervention knowledge developed in South Africa is, or indeed can, be applied outside this country, particularly by multi-national corporations with manufacturing facilities in emerging markets where HIV/AIDS is a growing problem but has yet to reach the pandemic levels of Sub-Saharan Africa.

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APPENDICES

Appendix A: i) Questionnaire (English Language Version)

ii) Questionnaire (isiZulu Language Version)

Appendix B: Response Data

Appendix C: Literature Search Methodology

Appendix D: Interview Schedule, Qualitative Study