

Occupational health

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SOUTHERN AFRICA

*Healthcare risk
waste and waste legislation
in South Africa*

*Standing desks in schools:
what are the effects?
A summary of reviews*

*Exposure of poultry processors
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**Andrew
Swanepoel**

From the Editor . . .

Welcome to the first issue of *Occupational Health Southern Africa* for 2016. I trust that you all enjoyed a well-deserved break and have returned re-energised for what will no doubt be a challenging year. Despite the economic downturn, and the crippling droughts, we remain committed to resilience.

In this first issue we feature three papers. In a country that faces a devastating HIV burden, questions have been raised about the measures that an employer should take to accommodate HIV-infected employees. Mills and Govender capture the knowledge, attitudes and practices of employers in relation to HIV-infected domestic workers in Rustenburg. This sensitive, yet critically important issue must be considered to ensure that unfair and non-discriminatory actions against domestic workers are avoided. In 2014, more than one million people were employed as domestic workers, 96% of whom were women.¹

A short report by Coralie van Reenen explores the issue of noise in South African hospitals. Noise is becoming an increasing problem, whether we are at work, at leisure, or commuting from one place to another. This is exemplified by Florence Nightingale who said, "Unnecessary noise, then, is the most cruel absence of care which can be inflicted either on sick or well."² As a healing environment, governing bodies (WHO³ and SANS⁴) regulate hospital noise levels in a bid to create a quieter environment for patients. Findings from Van Reenen's investigation raise some interesting questions related to noise perception among hospital staff versus patients.

In the third contribution, de Beer and Maja tackle the issue of musculoskeletal symptoms and their association with absenteeism at a South African foundry. Her findings highlight the much needed focus on ergonomics in the workplace which often remains neglected as it is not seen as a health and safety issue by many.

The MMPA has a number of attractive events planned for the first half of 2016, including a noise workshop on setting standards for noise-induced hearing loss (NIHL), which will take place in Kathu in March 2016. Occupational Health colleagues will also benefit from a research seminar, to be held in May, that aims to equip emerging researchers and occupational health practitioners with the requisite skills to engage in academic and writing activities. Please also diarise the 19th Annual MMPA Congress which is scheduled for early September 2016.

Several successful conferences and workshops which brought 2015 to a close are also reported on in this issue. SASOM held its Annual General Meeting and preceding conference in Stellenbosch in November, and SASOHN had a successful 35th National Conference and pre-conference workshops at the Lagoon Beach Hotel in Cape Town in the same month.

As 2015 SAIOH President, Prof. Cas Badenhorst, bows out, we thank him for his valuable contribution to *Occupational Health Southern Africa*, SAIOH, and the discipline of occupational

hygiene in general. We are pleased that he will remain on the SAIOH Council and Exco in 2016. In the same vein, we welcome and look forward to engaging with Jaco Pieterse in his capacity as the incoming SAIOH President. In this issue, be sure to read about SAIOH's continuing implementation of its five-year strategy.

As promised, we endeavour to keep you updated on the progress of the silicosis class action suit, on behalf of former gold miners, against South African gold mines. Mr Richard Spoor, who is representing affected claimant groups, is also involved in several individual claims. He argues that, if only one individual's claim is successful, it can be a precedent for future claims. He advises that it is in the best interests of both the industry and the claimants if the class action is settled, as it will ensure equitable distribution of compensation among all miners. For more information, see: <http://m.miningweekly.com/article/silicosis-class-action-could-spur-reforms-that-usher-in-adequate-effective-redress-lawyer-2016-01-22>

The issue of diversification has been raised in the Zimbabwean mining sector as the government gives consideration to those who might benefit from the full range of available resources. Currently, Zimbabwe fully benefits from only five of its more than 60 minerals. Notwithstanding the benefits for the fiscus, it is prudent to be aware of the health implications of specific mineral mining, something that the Zimbabwean government appears not to have addressed. Mining and Mining Development Minister, Walter Chidhakwa has been quoted as saying that "We have looked at a whole range of minerals. We are working right now on asbestos. We think that in 2016 very significant things will happen on (sic) asbestos".⁵ This is concerning as Zimbabwean chrysotile deposits contain 2% anthophyllite,⁶ an amphibole similar to crocidolite which is known to cause malignant mesothelioma. As the Zimbabwean government considers strategies to fully exploit its natural mining resources, we encourage you to read the full report.

No doubt, 2016 will present us with both challenges and opportunities. We encourage you to remain motivated and continue to submit research papers, commentaries and opinion pieces. Thanks, as always, for your readership.

Andrew J Swanepoel (PhD)
(Co-editor – OHSA)

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2015 Reviewers

We are most grateful to our reviewers for their evaluation and guidance on articles that are submitted to the Journal. As always, we acknowledge this contribution by listing those who assisted in 2015. Their names and countries are listed below, in alphabetical order.

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Upcoming events

LOCAL MEETINGS

DATE	MEETING	TOPIC	PLACE	MORE INFORMATION
10, 11 Mar 2016	MMPA Workshop	Setting standards in NIHL	Kathu, Northern Cape	E-mail: candiceu@mpas.org.za
3 - 6 Apr 2016	6th International Conference on Nanoscience and Nanotechnology in Africa	Risk assessment of nanomaterials	Unisa Science Campus, Johannesburg, South Africa	E-mail: NanoAfrica2016@unisa.ac.za Website: http://www.unisa.ac.za/Default.asp?Cmd=ViewContent&ContentID=98434
5 May 2016	SASOHN Academic Day	Primary health care – from evidence to action	Emperors Palace, Kempton Park, Gauteng	E-mail: office@sasohn.co.za Website: www.sasohn.co.za
19 May 2016	SASOHN Academic Day	Primary health care – from evidence to action	Pietermaritzburg Venue TBA	E-mail: office@sasohn.co.za Website: www.sasohn.co.za
20 May 2016	MMPA Seminar	Workday research seminar	NIOH, Johannesburg	E-mail: candiceu@mpas.org.za
10 - 11 Jun 2016	SASOM Annual Congress	Facets of Occupational Medicine	Kopanong Conference Centre, Benoni	E-mail: info@sasom.org Website: www.sasom.org
2 - 3 Sep 2016	MMPA 19th Annual Conference	TBA	TBA	E-mail: candiceu@mpas.org.za Website: www.mmpasa.org/wp
19 - 22 Sep 2016	PHASA Conference	TBA	East London	E-mail: deon.salomo@mrc.ac.za
26 - 28 Oct 2016	SAIOH Annual Conference	TBA	Mpumalanga	E-mail: info@saioh.co.za Website: www.saioh.co.za
2 - 4 Nov 2016	SASOHN 36th Annual Conference and AGM	TBA	Port Elizabeth	E-mail: office@sasohn.co.za Website: www.sasohn.co.za

HEALTH AWARENESS DAYS, WEEKS AND MONTHS

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Healthy Lifestyles Awareness Month
Environmental Awareness Month
Reproductive Awareness Health Month

4 World Cancer Day
8 International Epilepsy Day
8-14 Pregnancy Awareness Week
10-16 STI/Condom Week
19 Healthy Lifestyles Awareness Day

MARCH

TB Awareness Month
4-8 School Health Week
6-12 World Glaucoma Week
8 International Women's Day
10 World Kidney Day
16-22 World Salt Awareness Week
20 World Head Injury Awareness Day
21 Human Rights Day
21 World Down Syndrome Day
24 World TB Day

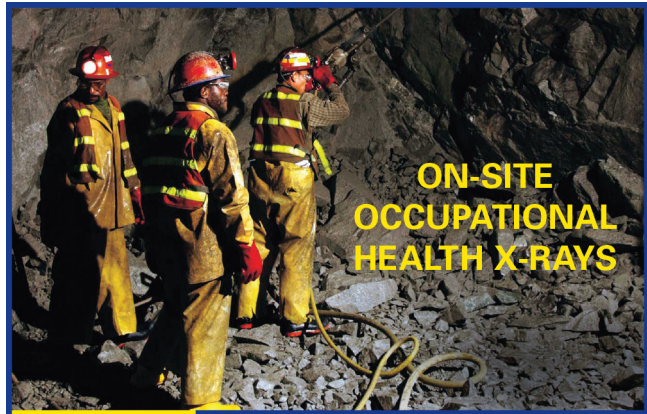
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21 - 24 Mar 2016	Dresden, Germany	4th International Strategy Conference on Safety and Health at Work (ISC2016)	E-mail: strategyconference@dguv.de Website: http://www.dguv.de/isc/index.jsp
11 - 13 Apr 2016	Putrajaya, Malaysia	2nd International Conference on Environmental and Occupational Health	E-mail: register.iceoh2016@gmail.com Website: http://www.iceoh2016.org/
13 - 15 Apr 2016	Suzhou, China	2016 International Conference on Environmental Pollution and Public Health (EPPH 2016)	E-mail: epph@engii.org Website: www.engii.org/epph2016/
1 - 4 May 2016	Birmingham, UK	13th International Conference of the International Mesothelioma Interest Group (iMig 2016)	E-mail: iMig2016@icsevents.com Website: http://imig2016.org/
12 - 17 Jun 2016	Castellaneta Marina - Taranto, Italy	2nd International Conference on Atmospheric Dust	E-mail: dust@scientevents.com Website: http://www.scientevents.com/dust2016/
20 - 23 Jun 2016	Toronto, Canada	PREMUS 2016 – 9th International Scientific Conference on the Prevention of Work-Related Musculoskeletal Disorders	E-mail: cmoser@iwh.on.ca Website: http://premus2016.iwh.on.ca
31 Aug - 2 Sep 2016	Basel, Switzerland	44th International MEDICHEM Congress	E-mail: martin.kuster@novartis.com Website: http://www.medicchem.org/
5 - 7 Sep 2016	Barcelona, Spain	25th EPICOH Conference X2016	E-mail: epicoh2016@mondial-congress.com Website: www.epicoh2016.org
6 - 8 Sep 2016	Barcelona, Spain	8th International Conference on the Science of Exposure Assessment in Epidemiology and Practice	E-mail: epicoh2016@mondial-congress.com Website: www.epicoh2016.org
14 - 16 Sep 2016	Brussels, Belgium	International Conference on Sustainable Employability - Building Bridges between Science and Practice	E-mail: philippe.kiss@securex.be Website: http://www.incose.eu
19 - 21 Sep 2016	Manchester, UK	Occupational and Environmental Exposure of Skin to Chemicals (OEESC) Conference	E-mail: conferences@bohs.org Website: http://oeesc2016.org/
19 - 21 Sep 2016	Wuppertal, Germany	Work, Age, Health and Employment - Evidence from Longitudinal Studies - Interdisciplinary Conference	E-mail: wahe2016@uni-wuppertal.de Website: http://wahe2016.uni-wuppertal.de/
25 - 28 Sep 2016	Amsterdam, The Netherlands	4th WDPI Conference, Work Disability Prevention Knowledge	E-mail: events@vumc.nl Website: http://www.wdpi2016.org/
29 - 30 Sep 2016	Singapore	2nd Singapore International Public Health Conference & 11th Singapore Public Health and Occupational Medicine Conference 2016 (SIPHC 2016)	E-mail: siphc@ams.edu.sg Website: http://www.phconference.org/
2 - 6 Oct 2016	Merida, Mexico	XIV International Congress of Toxicology	E-mail: I.Hernández-Ochoa.ict2016@cinvestav.mx Website: www.ict-mexico2016.org
27 - 29 Oct 2016	Kusadasi / Aydin, Turkey	10th International Joint Conference on Occupational Health for Healthcare Workers: Health & wellbeing in the health care sector; addressing current threats to workers	E-mail: alp.ergor@deu.edu.tr Website: http://70.38.12.36:8905/

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Letter to the Editor

Amphibole asbestos in vehicle friction products and gaskets?

This letter is a request for information on the past and current use of amphibole asbestos – crocidolite (blue) and amosite (brown) – in vehicle friction products and gaskets in South Africa.

Asbestos exposure by vehicle mechanics and individuals in similar trades has been a long-standing concern.¹ The concern arises from the use of asbestos in vehicle components such as brake shoes and pads, clutch plates and gaskets. During routine maintenance, repair or replacement of these materials, vehicle mechanics are at risk of exposure to asbestos. The risk is well-recognised and a number of countries have guides on working safely with these products: for example, New Zealand.² Despite the potential for exposure, asbestos-related diseases (ARDs) have been inconsistently found in mechanics, possibly influenced by the study setting: in high, middle and low income countries work practices and the amount of asbestos in products may differ.¹

The uncertainty about the extent of the risk of ARDs in vehicle mechanics has been lessened by a recent article which concluded that “This meta-analysis of the epidemiologic studies provides evidence that motor vehicle mechanics, including workers who were engaged in brake repair, are not at an increased risk of mesothelioma”.³ The authors proffered a number of explanations for the lack of an increased risk, one of which is that the toxicity of chrysotile (white asbestos), the predominant or exclusive fibre used in vehicle components, is reduced substantially by heat (generated, for example, during braking). This is reassuring, not only concerning mesothelioma itself but because, if the mesothelioma risk is not increased, other ARDs are unlikely: most need more asbestos exposure than is required for mesothelioma. It is unclear, however, whether

the reassurance provided by the meta-analysis extends to South Africa. All of the studies in the meta-analysis were done in North America or Europe, and exposure presumably was to chrysotile.

Based on poorly-recalled conversations and documents now misplaced, we think that amphiboles were used in South African vehicle components, particularly for heavy duty vehicles such as earth-moving equipment, trucks and buses. Is this true? This is a request for evidence of the use, in South Africa, of amphiboles in vehicle components such as brake pads and shoes. If you have knowledge of this, or written material confirming it, please contact David Rees at david.rees@nioh.nhls.ac.za, or Gaby Mizan at gaby.mizan@nioh.nhls.ac.za.

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Aveng has ventures in construction, engineering, mining, manufacturing and processing. Louise Woodburn, Aveng's G-LTA SHE Health and Wellness Manager, outlined aspects of the company's health and safety culture.

Aveng employs approximately 19 000 workers. The company has both onsite and offsite clinics as well as mobile medical services. These are managed by the various operating groups and are outsourced for the occupational health and wellness programme. The various operating groups have different medical service models based on the needs of the business. The programmes are all risk-based and meet the minimum Aveng Occupational Health Standard. The costs of the occupational medical examinations are covered in full and the company covers limited wellness benefits in the various operations, such as chronic illness screening and monitoring, wellness days, management of absenteeism, distribution of primary healthcare, and implementation of DOTS on specific sites. The occupational safety programme includes a SHEQ policy, life saving/cardinal rules per operating group, and Siyanda (the Aveng SHEQ communication tool). The figure shows the Aveng Health and Wellness Framework.

The framework and system also includes guidelines to address key health and wellness risks, i.e.

- Fatigue management
- Occupational health standards
- Medical surveillance programme guideline
- Hearing conservation programme

- HIV/TB management guideline
- Incident investigation
- Executive medical policy

Aveng's top priority areas for occupational health and training are occupational hygiene (understanding the risk of ergonomics, noise and ventilation, etc.) and health awareness.

Its top training priority is the Impact of Health and Wellness on Production. In terms of occupational health and safety, Aveng is on a journey to a world-class SHEQ culture, which has been defined, and a roadmap designed. It is based on a just culture and other best practice models.

Aveng's Louise Woodburn believes that the company's employees' top reasons for working for Aveng are that the company is a leader in infrastructure and a global organisation that is building its legacy, and because of its vision of Home Without Harm, Everyone, Everyday.

Aveng's occupational health goals include 100% legal compliance; a fit and healthy workforce; and happy, engaged employees.

The company has an Employee Wellness Programme that is free to all employees and their family members. It has health and wellness promotion campaigns with screening days and integration of wellness into an occupational medical programme.

Aveng has a fully functioning Corporate Social Investment trust. Some of the projects in which it has engaged include:

- Nelson Mandela Day's 67 Minutes campaign
- Winter blanket drive
- Go for Gold campaign
- Little Angel Wall of Hope
- Aveng Park Wellness day
- Engagement with various old age homes, crèches, and children's homes
- Training communities and subcontractors on SHEQ

Despite best efforts, the company does have health challenges. These include the management of occupational health programmes to ensure that the company gets the correct service providers who will meet its specifications; the management of the medical outcomes; integration and understanding of health issues for the employee and the impact of the employee's health on the workplace; public health and the ill-health profile of South Africa (including the social economic issues); and the impact of communicable diseases and the management of lifestyle diseases with the workforce.

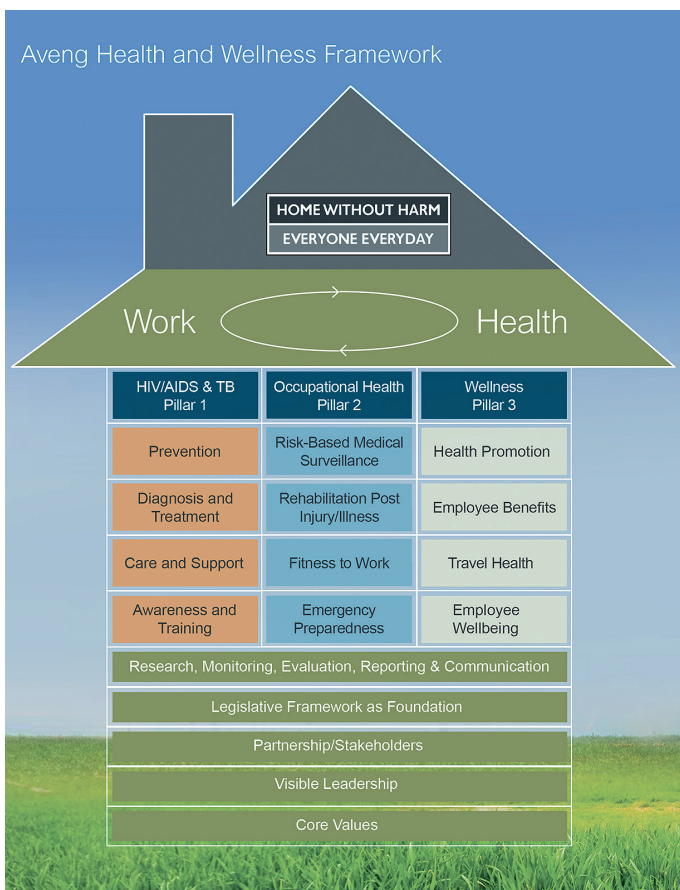
Aveng hopes to be able to meet some of these challenges through engagement with industry, including SABCOHA, Buildsafe, SAFCEC, Chamber of Mines, MBSA and the regulators; as well as the community. The company will continue with the entrenchment of its framework, and continuous education and communication around the understanding of health and its impact on the home and workplace.

Please contact the following people at Aveng if you require more information:

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 Louise Woodburn: Aveng G-LTA SHE Health and Wellness Manager, 082 416 0219.

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Aveng Health and Wellness Framework



Knowledge, attitude and practices of employers should they discover that their domestic worker is HIV positive: Cashan, Rustenburg

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ABSTRACT

Background: Infection with human immunodeficiency virus (HIV) is an epidemic that has become the leading cause of morbidity and mortality in South Africa. HIV/AIDS threatens productivity, profitability and the welfare of employees and their families. Some employers insist on knowing the HIV status of their domestic workers, and there have been reports of discrimination and unfair dismissal when they are found to be infected.

Methods: This qualitative study describes the knowledge, attitudes and practices of employers towards HIV-positive domestic workers in Rustenburg. In-depth interviews and a focus group discussion were conducted with 10 purposefully selected participants, all employers of domestic workers.

Results: It was found that employers had reasonable knowledge about HIV and AIDS and positive views on accepting and accommodating an HIV-positive domestic worker. While they would not consider dismissal on the basis of HIV status, they were not aware of legal aspects related to HIV-positive domestic workers or how to offer support. They were also not aware of universal precautions to use to prevent HIV transmission.

Conclusion: There is a need to provide more information to employers to ensure that HIV-positive domestic workers are reasonably accommodated in their work and have access to appropriate services.

Keywords: KAP study, employers, HIV/AIDS, female domestic workers

INTRODUCTION

Human immunodeficiency virus infection and acquired immune deficiency syndrome (HIV and AIDS) constitute a major public health problem affecting the health of millions globally.¹ HIV/AIDS threatens the livelihood of many workers and those who depend on them (families, communities and businesses), thus weakening national economies.^{1,2}

UNAIDS reports that more than 36.9 million people are living with HIV/AIDS worldwide, and that nine out of every 10 are adults in their productive and reproductive prime.^{3,4} Approximately 69% of the people living with HIV infection are in sub-Saharan Africa.⁴

Malawi and Mozambique are similar to South Africa (SA), with domestic workers being amongst the most vulnerable of all employees.^{5,6} Access to health services may also be difficult and limited, since a day taken off from work for treatment may result in loss of income. If their employers find out about their HIV status, domestic workers are at risk of dismissal, reduction in salary, and/or discrimination.⁷

In SA 55% of people with HIV/AIDS are women.⁸ The peak age for HIV infection in women is 25-29 years, while for men it is 30-35 years.^{8,9} This implies that HIV/AIDS is a problem among workers, and will therefore influence the work environment and the economy. This will impact on absenteeism, productivity, and production costs, with loss

of skills, reduced performance and deaths of experienced employees.¹⁰

Associated with HIV/AIDS are psychological issues, including workplace discrimination, stigma and increased stress.^{1,2} Although HIV/AIDS affects both sexes, women are more vulnerable due to biological, epidemiological, cultural and economic pressures.⁵ Women are often less likely to negotiate safer sex due to perceived lower status, economic dependence, and fear of violence. Women who are HIV-infected are more likely to be rejected, expelled from the family home, and denied treatment, care and basic human rights.¹¹

There are 1 to 1.5 million domestic workers in SA, and this is the largest sector of employment for black women in this country.⁶ Although one of the largest workforces, domestic workers are among the most marginalised. They are vulnerable due to their low levels of education, lack of power at work, and lack of access to healthcare services.⁵ Although the Department of Labour has provided a legal framework for the employment of domestic workers,¹² in reality, many are employed under informal or verbal agreements, and cannot claim benefits through the labour and employment laws.⁵ Various items of legislation address employers' responsibilities towards employees with HIV infection. In SA, legislation forbids pre-employment discrimination

by HIV testing, unless the tests are approved by the Labour Court.^{7,12} Many employers fear that, if their domestic workers are infected with HIV, this might place their families at risk. Some believe that HIV can be transmitted through day-to-day activities, such as cooking, washing dishes, sharing the same toilets or handling the children.²

Workplace issues related to HIV/AIDS include dealing with healthcare benefits, training of replacement staff, and loss of skills and knowledge among employees.² Studies have found that the majority of employers of domestic workers in Singapore understand that HIV cannot be spread through casual contact, while 90% of employers are also aware that HIV transmission cannot occur when sharing forks, plates and drinking glasses.¹³ Employers should have a basic knowledge and understanding of HIV/AIDS to assist them in the development of policies in an informed and balanced way.⁶ However, in Beijing, Hong Kong, and Chicago in the United States of America, employers were concerned about the contagiousness of the disease,¹⁴ and were worried about becoming infected. In all three cities, fears resulted from lack of knowledge about how HIV is spread. One employer stated: *"From what I understand, it can be passed through blood and saliva. What if this guy is drinking water? Maybe he goes in the refrigerator and drinks out of a bottle and puts it back and the next guy comes in"*.¹⁵ Although most households do not have formal policies, these should be discussed and drawn up before problems arise. The Department of Labour has drawn up draft policies that can be used as templates for employers of domestic workers.¹²

HIV and AIDS-related discrimination is so widespread that it affects productivity in the workplace. Employees who are HIV-positive may decide not to access care, treatment or counselling services, or other entitlements for fear of being ostracised.¹⁵

A study of domestic workers in KwaZulu-Natal found that they feared that they would be dismissed if their employers found out that they were HIV positive.¹⁶ They further expressed concern that, if their colleagues and managers knew their status, they would be isolated, ridiculed and avoided. Also reported were examples of "bad treatment" faced by people living with HIV and AIDS (PLWHA), which included social isolation, ejection from the home, rejection by the community, and verbal abuse.¹⁵ Another study reported that more than 80% of workers would be at ease shaking hands with, eating from the same plate as, and sharing the same tools with an individual infected with HIV.¹⁶ To reduce stigma and discrimination, workplace programmes should include training for employers, peer educators and counsellors.^{16,17}

South African law theoretically protects the rights of employees with HIV infection, but the reality is that discrimination and denial still prevail in the workplace. In SA, legislation focuses on non-discrimination, confidentiality and working in a safe environment.^{12,15} In terms of the Labour Relations Act, dismissal on the grounds of an employee's HIV-positive status is not permissible. Where the domestic worker is incapable of doing her work anymore, labour procedures need to be followed.¹⁸ This means that adequate notice and termination of services be discussed,¹² and benefits



from the pension fund and unemployment insurance fund secured. The Occupational Health and Safety Act states that employers need to ensure safety measures and are obliged to create a safe working environment. Universal precautions have to be adopted by all employers to reduce the risk of HIV infection.¹⁹ A health worker may not test a domestic worker on the instructions of a second person (employer); he/she must obtain the domestic worker's informed consent, otherwise the health worker can face disciplinary and legal action.^{2,20,21} No matter what the HIV status of the employer or employee, it is the responsibility of the employer to make sure that training of the domestic worker in first-aid and safety precautions is conducted. A first-aid box should be in the house, containing rubber gloves, plasters and bandages so that these can be used if anyone, including the domestic worker, has a cut or injury.

The fact that many domestic workers have migrated from rural areas or from other countries is in itself a risk factor for HIV infection. Dinat and Perber⁵ state that, in SA, domestic workers have no problem in accessing health services, yet their knowledge about HIV/AIDS is very low. Some indicated that they had never used a condom, and others that they had no idea that treatment was available.⁵ Eloff et al.⁷ found that limited knowledge regarding HIV and AIDS forms an integral part of the experience of the female domestic worker who is HIV positive in SA. Domestic workers rarely had discussions with their employers about HIV/AIDS. According to the participants in that study, their employers did not arrange any source of information or support for their employees.⁷ In addition, it was revealed that employers sometimes resorted to unfair labour practices in terms of the workers' job obligations and disclosure of their HIV status, which included immediate dismissal or a reduction in salary because employers withdrew certain responsibilities, like cooking and child care.^{20,21}

Table 1. Sociodemographic details of participants

Participant	Age (years)	Gender	Marital status	Highest level of education	No. of children	Length of employment of domestic worker (years)
A*	46	F	M	Secondary school	3	3–5
B*	34	F	M	Diploma	2	8
C*	48	F	M	Postgrad. Degree	None	3–5
D*	36	M	M	Degree	2	3–5
E*	39	F	M	Secondary school	2	5
F	44	F	M	Diploma	2	3–5
G	48	F	M	Postgrad. Degree	3	5
H	49	F	M	Degree	3	5
I	38	F	M	Degree	2	0.5
J	39	F	D	Degree	1	8

*Participants in the focus group discussion

Loss of income results in limited access to a nutritious diet, increased risk of opportunistic diseases, and inadequate financial resources to care for the family.⁷

There is a lack of published information about domestic workers' employers' knowledge, attitudes and practices about the possibility of having an HIV-infected domestic worker in SA. This study aimed to assess the knowledge of employers about HIV and AIDS, and to investigate their attitudes and practices towards female HIV positive domestic workers. The objectives of our study were to assess employers' reaction should they find out their domestic worker is infected with HIV.

METHODS

A qualitative study using the phenomenological approach was carried out, which allowed the researchers to study selected issues in detail. A phenomenological inquiry²² (study to describe the meaning of the lived experiences for selected individuals) can be utilised to describe the meaning of the lived experiences. In this study, it was on employers' perspectives towards domestic workers who are HIV positive. It focused on the aspects of meaning, experience and understanding of what people think and how they feel.²³ These experiences are called lived experiences.²⁴

The study population comprised employers living in a security village, Cashun, in Rustenburg, which has 60 households. Purposive sampling was used, which is based on subjects being representative of the topic being studied, and particularly well informed about the question at hand.^{23,24}

We chose non-resident domestic workers, since the interviews were conducted in the evenings at the participants' homes. Ten employers participated in this study, based on a balance of obtaining sufficient original data and manageability of the analysis.²⁵ One focus group discussion (FGD) with five of the participants, and another five individual interviews, were conducted, which generated six transcripts. We used two data collection methods to ensure triangulation where we could verify information obtained. The FGD allowed us the opportunity to gauge the strength of responses to each of the questions.

Criteria for inclusion in the study were English-speaking employers of domestic workers living in the Cashan area for

at least six months, who had non-resident domestic workers who worked for them at least once a week. The presence of the domestic worker at the time of the interview could have affected the validity of answers.

The researchers used an interview guide which comprised six open-ended questions to encourage the respondents to answer the original question in more depth.²⁵ The questions covered employers, knowledge of HIV transmission, adaptations of the household tasks should the domestic worker be HIV infected, and the support that an HIV-infected domestic worker might require. The interview questions were:

1. Can you please tell me what you know about HIV and AIDS, and how it is transmitted?
2. If your female domestic worker disclosed her status to you, that she is HIV positive, what will be your attitude towards her?
3. Would you still allow your female domestic worker to continue to cook, handle your children and to clean the house, if she is HIV positive?
4. Have you ever had the opportunity of discussing issues surrounding HIV and AIDS with your domestic worker?
5. What precautions need to be taken if your domestic worker is HIV positive?
6. In what way may she need support and understanding?

The same set of questions was used for the FGD and the individual interviews. A range of prompts and reflections were included to encourage the participants to expand and clarify their responses. The individual interviews were conducted in the participants' homes and lasted 35 to 45 minutes. Field notes were taken and the interviews were audio recorded.

The FGD began with the researcher giving some information about the research and the frame of reference. Participants were encouraged to discuss the issues freely to ensure content-rich qualitative data from the natural flow of the discussion. The discussion was interactive with fairly equal levels of contribution from all participants, and took approximately 50 minutes. Field notes were taken and the discussion was audio recorded.

Data analysis

Analysis of the data was done using coding and thematic

analysis: an inductive approach.²⁵ All transcripts were colour-coded and manually sorted using a cut and paste technique.²⁰ The transcripts were all checked, read and coded by another researcher as a peer-checking process.²¹ There were no discrepancies in the coding between the two researchers.

Trustworthiness

The techniques used to ensure credibility were taking the transcriptions and codes back to participants after the verbatim transcriptions were typed, and confirming whether themes and feedback from participants were recorded accurately (doing member checks), as well as reliability checks, where another researcher reviewed the coding from the transcripts, audio tapes and field notes, and consensus was reached on final categories and themes. Trustworthiness included cross-checking the validity of the findings using an external researcher and cross-checking the two interview methods to confirm findings.

Ethical considerations

Written informed consent was obtained. All participants were assured that the information gathered would be used solely for the purposes of research. The protocol was approved by the Ethics Committee of the University of Pretoria (Ref. S51/2009).

RESULTS

Demographic details of the participants are presented in Table 1. The ages of the participants ranged from 34 to 49 years and only one was male. All participants were educated, only one had no children, and the length of employment varied from six months to eight years.

Individual interviews

Four themes emerged from the individual interviews: knowledge and perceptions of HIV/AIDS, attitudes towards the domestic worker, adaptations of work tasks, and support for the domestic worker. Each theme had subcategories (Table 2).

Summary of themes

The participants had a reasonable knowledge of the various ways in which HIV is transmitted and also emphasised that one cannot just look at someone and know that the person is infected. They also indicated that it is important for a person to know her status, to inform children about blood spills, cuts and open wounds, and to not have contact with blood since it is a way in which HIV is transmitted. However, some indicated that they would not let the domestic worker bath their child, which suggests some fear beyond this 'knowledge'. Although some of them mentioned that, as the disease progresses, one is likely to detect that a person has

Table 2. Themes from individual interviews

Theme	Subcategories	Quotes
Knowledge and perceptions of HIV/AIDS	Knowledge on transmission (through blood products, sexual, viral, bodily fluids)	<i>"It is a viral disease, which is passed through sexual contact, blood transfusion. It is a blood disease and it is a chronic disease so that if one suffers from it, they have to be on chronic medication."</i>
	Not through acts of affection (hugging or kissing)	<i>"In the initial stage it is very difficult to identify, yes at a later stage, you can clearly see."</i>
	Perception on blood test (important to know one's status)	<i>"I don't think you can look at somebody and say he has HIV, you can only tell from a blood test." "If you know your status, you know what to take, to control it and to live longer, so it is good to know your status."</i>
Attitudes towards the domestic worker	Children not to ostracise her	<i>"I will have a plan of action for example if I am busy with my kids and her nose starts to bleed, I would explain beforehand to my domestic worker and my kids as to what to do in such circumstances. I will have explained the use of gloves, and I will not allow my kids to ostracise my domestic worker."</i>
	Stigma	<i>"It would be unfair to dismiss a person because of the HIV; there is a stigma already about HIV so dismissing that person they will go quicker than they were supposed to."</i>
	Domestic worker not dismissed	<i>"I don't think it will change, I would more than likely just put certain things into place. No ... I wouldn't fire her."</i>
	Positive acceptance	<i>"... would assist the domestic worker with more information about the disease, and have a positive attitude towards her."</i>
Adaptations of work tasks	Universal precautions	<i>"In terms of hygiene I mean if someone has open sores, not to get in contact with, since we know that it is not transmitted through touching ... personal hygiene, no blood contact."</i>
	Not allowed to come to work with an open wound	<i>"Health of my family is my priority. I am not sure about what precautions to take."</i>
	Permitted to continue to do the house chores	<i>"... no problem in allowing her to clean the house, but not bathing my children"</i>
	Allowed to do the cleaning, but not to bath the children or cook (fear)	<i>"When they have this HIV thing, the skin becomes delicate; they get cuts, wounds on the skin. So I wouldn't want her to do my cooking for me, if she gets a cut, the blood will flow into my food."</i>
Support for the domestic worker	Support (emotional, spiritual financial, physical)	<i>"I think she needs support emotionally... a lot of support"</i>
	Counselling sessions	<i>"Encourage them by being strong, don't let yourself down ... God is there to give them the strength to hold on ... Be kind like you always have been to them not to change your attitude towards now she has HIV, you look at them differently."</i>
	Support groups	<i>"... encourage her to go for counselling"</i>
		<i>"... to join a support group to better understand the disease"</i>

HIV infection, it seems that they did not know the difference between HIV infection and AIDS.

The participants were generally very confident in discussing the issue of disclosure, and expressed that they would assist their domestic workers and positively accept the situation. One participant was very adamant about the issue of an "open wound" and would never allow the domestic worker to come to work with it.

Although some of the participants were willing to allow their domestic workers to continue with the work, one stated that she would not allow her domestic worker to bath her children or do the cooking. She would only be allowed to do washing and ironing. This suggests that there is a dissonance between knowledge and fear-based discrimination. All the participants stated that they would gladly assist their domestic worker should she be HIV positive. Various types of support were mentioned.

Focus group discussion

As shown in Table 1 (those indicated with an asterisk), four female participants were involved in the FGD.

The same four themes emerged from the FGDs as from the individual interviews. Again, these themes had subcategories (Table 3).

The dissonance between knowledge and fear-based discrimination seemed to also be apparent from the FGD. Employers implied they would be afraid to leave their HIV-infected domestic workers alone at home as they may "use our toothbrushes". This fear-based discrimination impacts on the trust and the responsibilities of the domestic workers.

All of the employers in the FGD mentioned various ways in which they would support their domestic worker. These

included empowering her with knowledge so that she can understand the disease to draw strength from other people's testimonies, and encouraging and assuring her that people with HIV can live a positive and productive life. Some of the participants were willing to support their domestic workers financially. Government support was also mentioned by an employer. Employers agreed that, through counselling, domestic workers would understand the disease better and would be able to handle issues around HIV/AIDS.

DISCUSSION

Knowledge and perceptions of HIV and AIDS

Employers in the individual interviews were reasonably informed about HIV and AIDS. They knew that it is a chronic viral disease which is spread sexually, and through the use of infected needles, blood transfusion and bodily fluids. They did not mention transmission through breastfeeding, or the sharing of razor blades and toothbrushes.

Employers in the FGD mentioned transmission through breastfeeding, shaving blades, sexual transmission and sharing toothbrushes, and through cuts or ulcers in the mouth. These modes of transmission are in line with the published evidence.²⁶ Only one participant knew that the virus can pass through breast milk,²⁶ and described how a domestic worker who was HIV positive breastfed her employer's baby, resulting in the baby being infected.

Employers from the individual interviews knew that one cannot tell by looking at someone whether they are HIV infected, and that confirmation is by means of a blood test. Diagnosis is most accurate with an HIV test.²⁷

Some of the individual interviewees mentioned that, in the

Table 3. Findings from FGD

Themes	Categories	Quotation
Knowledge and perceptions of HIV and AIDS	Transmission	<i>"A family had a baby; both parents were HIV negative... The doctor asked in whose care the child was. They said they had a helper, so he had the helper tested and she was found to be positive. The helper said that well, what used to happen was, whenever the baby was crying, she breastfed the child not realising, ... She thought, she was doing the right thing, and when the baby was crying uncontrollably, she would give the child the breast and the child would stop crying. So, she said she was doing things from a good faith, not knowing that...In this instance there was ignorance on her part, so to avoid such, we need to educate our helpers, it is important."</i>
	Healthy lifestyle	<i>"I think another thing is eating healthy food. For them to remain healthy they have to be on regular medication."</i>
Attitude towards the domestic worker	Fear	<i>"... being driven by fear, when she wants to bathe your children you will say don't worry, don't worry, so I think counselling is important."</i>
	No dismissals Stigma	<i>"... we cannot chase her just because she is HIV positive." "When a person is identified as having been HIV, although this issue of stigma was happening in the past, it is also happening in the present situation, whereby the person is rejected and they withdraw from that person. There is this stigma that if a person has HIV then the person is labelled as having been promiscuous is like that... HIV was brought on... brought it upon himself. And the other stigma is where people feel that you know you cannot use the same cup, cutlery or the same things that person has, I might get it."</i>
Adaptation of work tasks	A need to inform the domestic worker of hygienic practices.	<i>"Hygiene.... Because if we leave them in the house, they can use our tooth brushes, we never check."</i>
Support for domestic worker	Counselling	<i>"Counselling session for both parties would alleviate any fears."</i>
	Support (emotional, spiritual, financial, physical) Family support	<i>"Family support is important; that person's family to support her all the way." "... when you are HIV positive, it is not like you are dying, HIV is manageable."</i>

initial stages of HIV infection, it is difficult to identify people who are infected but, as the disease progresses, it becomes easier to identify people who have AIDS. This deterioration in the progress from HIV infection to AIDS is due to the weakening immune system.^{16,26}

One individual interviewee would not allow her domestic worker to do the cooking and handle her children because she feared that if she cut herself while cooking, the blood would flow into the food. This is a result of a lack of understanding of the mode of transmission, and is where education and awareness need to be intensified.

Employers from both groups mentioned healthy living options such as eating a healthy diet and hygienic practices. They also mentioned the use of chronic medication and how this could enhance the lives of infected domestic workers. The literature confirms that healthy living options and adherence to chronic long term anti-retroviral therapy improve survival and quality of life. As the medical management of HIV disease continues to improve, living with HIV/AIDS is becoming a chronic stressor that resembles other chronic life-threatening illnesses in relation to psychological functioning. Moreover, the psychological stressors that accompany a life-threatening illness of unknown course place serious biopsychosocial burdens on patients that can adversely affect health outcomes. Depression among adults living with HIV is well-documented and depressive symptoms predict an increased risk of developing AIDS. Adherence to anti-viral treatment (ART) is important because less than very high medication compliance can facilitate the development of drug-resistant HIV strains.^{28,29} Moreover, there is evidence suggesting that less than very high adherence to ART can lead to treatment failure. High adherence rates are associated with increased likelihood of survival. Thus, healthy living strategies and adherence to medication decrease distress and enhance positive effects that are necessary for improved health outcomes.²⁸

Attitudes towards the domestic worker

Employers from the individual interviews expressed that if they knew their domestic worker was HIV positive, their attitude towards her would not change; they would be caring and compassionate.

Some employers mentioned the issue of stigma. Stigma and discrimination are largely due to lack of knowledge, which leads to fear and anxiety about HIV/AIDS. HIV/AIDS is widely stigmatised because of its link with behaviours that are seen as socially unacceptable.¹⁵ PLWHA can be rejected by family and friends, and subject to human rights abuses, many have been thrown out of homes and jobs. This may result in domestic workers being too scared of being open about their status, forcing the disease underground.¹⁵ Employers reported that they would not dismiss their domestic worker if she was infected with HIV.

Most employers would opt for counselling sessions for the employer and the employee, to deal with it effectively in the home environment. The participants generally displayed a deep sense of compassion towards the HIV-infected employee; however, there was also verbal and non-verbal expression of fear of infection of the employers' family members. Other researchers have also found that employers would

welcome support and counselling which they report would help them to feel more confident,³⁰ and help them with their fear and anxiety. Fear was a response seen in some of our respondents. Other qualitative studies have reported this fear as a common first reaction. With more information and counselling, other employers have overcome this initial reaction.

Adaptation of work tasks

In accordance with the Labour Relations Act, an employee with HIV/AIDS may not be dismissed because she is HIV positive. Where there are convincing reasons related to her capacity to continue working and fair procedures have been followed, her services may be terminated.³¹ Domestic workers should be allowed to work for as long as they can cope with their job responsibilities.^{21,33} The participants from both groups were not aware of the specific legislation regarding the rights of domestic workers.

Some of the FGD participants mentioned that they would still allow their female domestic worker to continue with the household chores, unless her condition deteriorated. They mentioned that HIV infection should be seen as a chronic condition like diabetes. This is encouraging if it occurs in reality as anger and fear contribute to the development of discrimination. Studies have found a significant number of respondents who want people living with HIV to be clearly identifiable and to be excluded from contact in work. Reports of stigma are pervasive, extending even to the health professions. In 2001, the Health Professions Council of SA did not act against 28 doctors who breached patient confidentiality. The patients were mostly domestic workers whose employers had been told of their diagnosis, many of whom were subsequently dismissed. If some level of general acceptance and support can be obtained for the HIV positive individual, this can facilitate better results. For example, if the infected domestic worker can take her medication without fear and a need to hide, this will help adherence. Also, emotional support will help her with stress and depression which will, in turn, improve her immunity.³⁴ In our study, most of the employers seemed to be willing to work with their domestic workers and manage HIV infection as any other chronic condition.

In the individual interviews, some of the participants mentioned that nothing should change and that the domestic worker should be allowed to continue with her normal work. However, one of the participants mentioned that, although she would still allow her to do washing and cleaning, she would not allow her to bath her children or to cook. This reveals that there is a lack of understanding of the disease.

Although one cannot get HIV from using the same toilets, touching, hugging, or cooking, there are still some misconceptions surrounding this disease.²⁶ Hence, adequate information and education about HIV/AIDS in the workplace will help promote healthy attitudes towards infected domestic workers, and create better understanding and acceptance, thus minimising and possibly avoiding problems.¹⁶

Although none of the participants specifically mentioned universal precautions to prevent the transmission of HIV infection, some did suggest that safety and hygienic practices be maintained in the home. The Occupational Health and Safety Act expects that employers create a safe workplace

environment. This includes hand washing, covering of skin lesions on one's hands until healed, a clean and safe environment, the use of rubber gloves when handling surfaces soiled with blood or body fluids, and the availability of a first-aid box.²⁷

It is vital to inform the domestic worker that if she has any open cuts or wounds, she must cover them. The domestic worker must also be reminded of the fact that the employer and her family may be infected with HIV, and therefore she also has to use protection.^{16,26}

None of the participants mentioned opportunistic infections, such as diarrhoea and tuberculosis. Adherence to medication was mentioned in the FGD, yet no mention was made of the associated side-effects.^{16,26} This information must also be conveyed in the counselling sessions.

Some FGD participants mentioned that it was necessary to make the children aware of HIV and AIDS. An individual interviewee mentioned that she would not allow her children to ostracise her domestic worker, and that information would be given to both the domestic worker and the children so that both parties could protect themselves. There is no published information on how children in a household with an HIV-infected domestic worker should be involved in sharing knowledge and taking precautions in the home environment. However, stigma needs to be reduced as it causes stress and depression and affects adherence, leading to a deterioration in the infected person's immunity.^{15,28} It was encouraging to note that respondents considered the effect their children would have on the domestic worker should she be HIV-infected, and that they would take measures to ensure that their children acted in a kind, caring, knowledgeable and non-judgmental manner.

Support for the domestic worker

Participants suggested that PLWHA need a lot of emotional, spiritual, psychological, social, physical and clinical support. Van Dyk from SA supports the notion that PLWHA benefit from these support structures.²⁶ Employers proposed that infected domestic workers should be encouraged to join support groups. They could get spiritual support through a prayer group, and counselling sessions would help reduce isolation and promote acceptance. Participants stated that they would also support the domestic worker financially, ensure that she had nutritious meals, and educate her with the necessary information so that she would be able to manage herself effectively. This response is commendable as the literature shows that all forms of support, healthy living conditions and avoidance of stigma and labelling lead to a better outcome and quality of life for the HIV-infected domestic worker.²⁸

The employers had a reasonable knowledge and understanding of HIV and its mode of transmission, and fair knowledge of the progression of the disease from HIV to AIDS. There is a paucity of information about employers' views about employing HIV-infected domestic workers. Studies from other employment sectors show employers had medium to high information levels about HIV/AIDS and showed sensitivity towards the right for treatment and protection of the human rights of people infected with HIV.³⁵ In a previous South African study of employers, almost a quarter felt that HIV/AIDS discrimination still exists in the workplace, confirming that HIV/AIDS is still a pandemic surrounded by obliviousness,

prejudice, stigma and discrimination.³⁶ A small number (13%) of respondents in that study believed that HIV infection is a cause for termination. Evidence from Tanzania shows that employers recognise that HIV/AIDS puts their workers and their families at peril.³⁷ The impact of HIV/AIDS on the affected parties may affect job satisfaction and performance, stress, and relationships of the employee with fellow workers. Meanwhile, companies fail to harness the full potential of their employees by providing information, medical care, health insurance and training related to HIV/AIDS to employees suffering from illnesses related to HIV.^{36,37}

Study participants expressed that they have a good, long-term relationship with their domestic worker and that, if she was infected with HIV, they would continue with a compassionate relationship. The long duration of the relationship of the domestic worker and her employer (median of five years) is a possible confounder which might result in more compassion towards HIV-infected domestic workers.

Limitations of the study

This study is limited to the population in a security complex in Rustenburg. The results of this qualitative study are not generalisable to all employers of domestic workers.

Conclusion and recommendations

Employers were fairly well-informed about the transmission of HIV; however, there was some apprehension about the extent to which the domestic workers could carry out their full range of chores. It appears that these employers would be willing to support the HIV positive domestic worker and allow her to continue with most but not all household chores.

Although the employers were not familiar with the legal aspects of HIV/AIDS and the issue of dismissal, they expressed that they would not dismiss their HIV-infected domestic worker.

The employers were unfamiliar with universal precautionary measures for use in the home environment as control measures to prevent the spread of the disease.

Adequate information and education about HIV/AIDS in the workplace will help promote healthy attitudes towards infected people and create better understanding and acceptance of people infected with HIV, thus minimising and possibly avoiding potential problems such as stigma and unfair dismissal. However, this might be difficult in the context of a household without a formal organisational structure. This can be overcome by discussing HIV/AIDS with the domestic worker and drawing up a contract. Domestic workers' templates of contracts can be downloaded from the Department of Labour website.¹²

Universal precautions should be practised, whether the HIV status of the individual who is injured is known or not. The importance of hand washing should be emphasised, and bleach should be available and accessible for use at all times in case there is a spill of body fluids.^{8,11} A first-aid box with items such as disposable gloves and plastic aprons should be provided by the employer and be accessible to the domestic worker.⁸

Domestic workers should be allowed to continue with their normal chores in the home, with acceptable remuneration

based on the proposed government wage levels. As and when the domestic worker experiences health problems, her work duties should be adapted to accommodate her health problems. Only if she cannot perform her duties, despite reasonable accommodation of her failing health, would it be acceptable to terminate her employment.

LESSONS LEARNED

1. Employers are fairly well informed about the transmission of HIV
2. There is a need for negotiation between the employer and employee for the most appropriate adaptation of work tasks
3. Employment of a domestic worker in a household environment needs to be viewed as employment similar to that in any formal industry, and health and safety measures must be equally applied
4. Employers of domestic workers in a household need to be familiar with the legal aspects of HIV/AIDS and the issue of dismissal

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Staff and patient perceptions of noise in SA hospitals – a pilot study

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ABSTRACT

Background: Noise in hospitals can negatively affect users. Guideline noise levels for hospital wards are stipulated by the World Health Organization (WHO) and a South African National Standard (SANS). Studies show that few hospitals comply with the guidelines but limited research in South Africa means that conditions in local hospitals are unknown. The objective of this pilot study was to compare measured noise levels with guideline and perceived noise levels in general hospital wards.

Methods: Measured and perceived noise levels were assessed, using data obtained from sound level meter readings and questionnaires, respectively, in four hospitals.

Results: None of the hospitals complied with the guidelines, with an average $L_{eq,24hr}$ of 53.4 dBA. Yet, most users did not perceive the environment to be excessively noisy. At two of the hospitals it emerged that noise is more disturbing for staff than for patients.

Conclusions: The results did not yield the predicted perceptions of noise in hospitals. Further research on a larger sample is required to confirm findings, particularly pertaining to the difference in perceptions between staff and patients.

Keywords: hospital noise, perceived noise, noise measurements, equipment noise

INTRODUCTION

Environmental noise can affect humans physiologically and psychosocially,¹⁻⁴ impacting negatively on health and work performance.² In a hospital context, noise can negatively influence patient and staff outcomes, such as patient recovery time and staff burn-out,³ and should be monitored and controlled.

The World Health Organization (WHO) recommends an equivalent continuous sound pressure level over a 24-hour period ($L_{eq,24hr}$) of not more than 30 dBA in hospital wards.² This is a commonly referenced guideline internationally. In South Africa, the South African National Standard, SANS 10103:2008,⁵ stipulates a level of 35 dBA in wards.

Few hospitals world-wide comply with the WHO recommendations.^{6,7} In South Africa, little research has been done regarding noise levels in hospitals. Findings show that neonatal intensive care units (ICUs) exceed

the guideline recommendation.^{8,9} However, no research in general ward spaces exists.

The objective of this pilot study was to compare measured noise levels with guideline levels, and with perceived noise levels, in general hospital wards in South Africa.

METHODS

Four hospitals (A, B, C and D) were randomly selected from 18 public and private general hospitals in the area for this study. All hospitals were in the City of Tshwane Metropolitan area. At each hospital, a multi-bed general ward with comparable caseloads and clinically similar patients was selected by convenience for the study.

Ward noise levels were measured over a 48-hour period, using a Class 1 integrating sound level meter, suspended above head height in the centre of the room. Using these measurements, the typical $L_{eq,24hr}$, as well as the daytime ($L_{eq,day}$) and night-time ($L_{eq,night}$) levels were calculated for each site.

Perceived noise levels and sources were determined through questionnaires. Approximately 100 patients (± 60) and nursing staff on 12-hour shifts (± 40) in the wards were asked to participate. Staff, such as doctors, spending short, non-continuous periods in the ward, were excluded. Eighty-three questionnaires were collected (33 staff members and 50 patients). Participants' opinions

Table 1. Equivalent continuous sound pressure levels (L_{eq})

Hospital	24-hour L_{eq} (dBA)	Night-time L_{eq} (dBA)	Daytime L_{eq} (dBA)
A	49.4	38.0	51.6
B	53.7	44.4	55.7
C	56.8	52.1	58.1
D	53.9	49.6	54.9
Average	53.4	46.0	55.1

of the noise level were categorised as 'Not too noisy' or 'Too noisy'. Perceived noise sources were categorised as 'Not disturbing' or 'Disturbing'.

Consent from each hospital and the CSIR Research Ethics Committee was obtained and all individual participants completed the questionnaire voluntarily. The data were analysed for significant associations using Fisher's exact test and Pearson's chi-square test.

RESULTS

Measured noise levels

The $L_{eq,24hr}$, $L_{eq,night}$ and $L_{eq,day}$ levels for each site are recorded in Table 1. Levels were similar in all four wards, with the $L_{eq,24hr}$ levels ranging from 49.4 dBA to 56.8 dBA, which is above the WHO and SANS 10103 recommendations. Even the lowest $L_{eq,night}$ value was above the recommended level.

Perceived noise

Considering the combined sites, the distribution of opinions did not reflect the measured noise levels, as would have been expected, with most participants (63) responding 'Not too noisy'. However, there was a significant difference ($p = 0.0001$) in the opinion distribution per site, indicating possible presence of site-specific factors.

Collectively, there was a significant association ($p = 0.004$) between the user category (staff or patient) and the perceived noise, with more staff members responding 'Too noisy' than expected. The staff-patient distribution of opinions at hospitals C and D showed no significant association between perceived noise and the user category. However, there was a significant association at hospitals A ($p = 0.009$) and B ($p = 0.044$), with more staff members responding 'Too noisy' than expected.

The most frequent 'Disturbing' sources were medical equipment and alarms, and corridor traffic, although only 37.5% and 34.4% of all participants found these disturbing, respectively. Amongst patients, the highest-ranked perceived sources were, first, medical equipment and alarms (17.8%) and, second, talking (14.3%). Amongst staff members, the highest-ranking sources were corridor traffic (61.2%), and medical equipment and alarms (68.1%).

DISCUSSION

This study was viewed as a test study for the necessity and methodology of future in-depth noise studies in South African hospitals with the ultimate goal of determining whether hospital design guidelines should change to improve the acoustic environment.

Although the noise levels in the selected hospitals exceeded the WHO and SANS 10103 guidelines,^{2,5} most users were not disturbed by environmental noise. This calls to question the origins, interpretation and applicability of the guidelines.



The WHO guidelines are set for the lowest critical health effect which, in hospital wards, is sleep disturbance². However, this pilot study highlights the possibility that patients in general wards are not as disturbed by noise as would be expected, while nurses seem to experience noise disturbance.

The reasons for staff-patient differences in noise perceptions were not investigated, although a possible cause could be the influence of medication or the period of exposure. There is a relationship between length of hospital stay and acoustic comfort.¹⁰ Staff, who are considered as long-term occupants, experience more noise-exposure than patients, who are short-term occupants.

The main noise sources identified (corridor traffic, medical equipment and alarms, and talking) are user-generated, rather than infrastructure-related. This is challenging to mitigate since it relates to daily activities, functions and behaviour. The SANS 10103 guideline value refers to buildings with services under normal operation but excludes noise produced by activities.⁵ Thus, the Standards does not effectively address noise in occupied spaces.



Limitations

The sample was small but sufficed for the purpose of this pilot study. The impact of noise disturbance on patients' and staff outcomes (such as recovery period and stress levels) was not assessed in this study, and the possible influence of gender, socio-economic background, age or medical condition on the perception of noise was not considered.

CONCLUSION AND RECOMMENDATIONS

Although the measured noise level in the selected wards was high, this was not evident in the user perception of noise. This highlights the need to critically assess the guidelines.

Staff and patients perceived noise differently, with staff experiencing greater disturbance. The most common sources of noise were user-generated noises.

Research on the impact of noise on hospital staff and patients in South Africa is limited in scope¹¹ and this study highlights the need for further investigation in terms of outcomes and appropriate working noise levels. These findings should be confirmed through further studies with a larger group. Noise mitigation in terms of design, behaviour and equipment should also be investigated.

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DECLARATION

There are no conflicts of interest in this research.

LESSONS LEARNED

- Noise may have more impact on staff than patients in a hospital ward environment
- Measured noise levels do not necessarily reflect the noise perceived by individuals
- User-generated noise (equipment, traffic, talking) is a major contributor to noise in hospital wards

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Tackling occupational health issues with a strategic plan

Organisations lose millions of Rands annually due to mismanagement of health issues in the workplace. The problem is twofold – first, the lack of identification of possible risks and second, the inability or reluctance to address the risks.

According to Mandy Steyn, MD of the HSP Group, a health risk assessment needs to be put in place in order to achieve two very distinct, legally compliant outcomes. “Firstly, one needs to establish the protocol for establishing the health status of employees before working in an environment, in order to ensure that the employee does no harm to himself, his colleagues or equipment. Secondly, one needs to establish the impact of an environment on the health of an employee by monitoring the effect of hazards identified in the specific work area of each employee.”

The most common individual health risks encountered in the workplace are chronic diseases such as uncontrolled diabetes and blood pressure, poor vision, lung diseases (e.g. pre-existing asthma and TB), and hearing loss. The most common occupational health risks are exposure to noise, dust, fumes, vibration, heat, and sun, and working at height.

Steyn says that noise-induced hearing loss is the most regulated risk in South Africa, as it is such a common and debilitating occupational disease. For this reason, legal compliance in pre-employment, periodic and exit screening, as well as effective submission of compensation claims, is so important.

The compilation of a suitable and effective occupational health workplace programme would encompass:

1. The conduct of a comprehensive safety, health, environmental and quality audit
2. A hygiene survey undertaken to quantify health risks (when required)
3. Medical staff, in conjunction with the health and safety team, to draft a health risk assessment that identifies medical surveillance requirements, based on the hygiene survey report and a physical site inspection
4. Medical surveillance
5. Follow-up of identified problems
6. Ongoing surveillance and re-assessment of the programme

Steyn points out that one needs to reach a balance in testing since over-testing is expensive and under-testing is risky. “The risk assessment needs to be a team effort, spear-headed by the occupational health staff and in conjunction with the health and safety team. The risk assessment is of no value unless a physical site visit is conducted and is based on the hygiene survey.”

The HSP Group provides a comprehensive occupational health service that includes health risk assessments, medical surveillance, certificate of fitness, hearing and lung function tests, vision screening, chest X-rays, biological monitoring,

primary health and on site clinics, HIV management, acute/chronic treatment, and patient education, as well as extensive training across a number of modalities.

“The health profile of employees needs to be carefully considered before organisations embark on a health management programme. Most organisations lack the resources to undertake risk assessments and to implement suitable mitigation measures. A-OSH EXPO provides an interactive forum for industry professionals to discuss their needs with an arsenal of knowledgeable and experienced health advisory specialists with documented track records,” says Joshua Low, A-OSH EXPO Event Director at Specialised Exhibitions.

Now in its sixth year, A-OSH EXPO has earned its reputation as Africa’s leading and most targeted occupational health and safety exhibition. The event, which will take place from 24 to 26 May 2016 at Gallagher Convention Centre, boasts a number of visitor attractions that make the show experience even more worthwhile. These include the free-to-attend PASMA Working at Height and NOSHEBO Seminar Theatres. As in the past few years, Saioh will be running its comprehensive conference alongside A-OSH EXPO.

A-OSH EXPO 2016 enjoys the endorsement of a number of leading industry associations, including the Institute for Working at Height (IWH), IOSM, Nebosh, FPASA, NOSHEBO, PASMA, the Safety First Association, SAIOH, SAPEMA and Saioh.

Visitors will have access to the Business Matchmaking Service sponsored by Ideco, which allows visitors to be pre-matched with relevant exhibitors. This initiative allows meetings to be arranged in advance of the exhibition, thereby maximising the visitor’s time at A-OSH EXPO 2016.

A-OSH EXPO will again be co-located with Securex, Africa’s leading source for security and fire products and services. The exhibition covers all aspects of security and fire risk analysis and alleviation and, for the first time, will include a conference that addresses cyber security.

To book a stand or discuss a sponsorship package, contact Zelda Jordaan or Sven Riddle on +27 (0)10 003 3082 or +27 (0)10 003 3077, or e-mail zeldar@specialised.com or svenr@specialised.com. For more information on A-OSH EXPO 2016, visit the website at www.aosh.co.za.

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Testing for drugs of abuse – Part 2

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ABSTRACT

This is the second article in this series. The first looked at some of the commonly encountered drugs of abuse, discussed the range of samples on offer, established why urine is the preferred matrix, and addressed methods of sample adulteration. Part 2 briefly discusses immunoassay technology, the means to comment on the integrity of a sample and issues regarding cut-points and interpretations. The necessity for confirmatory testing of positive test results is discussed and the use of a mass spectrometric method is recommended for this purpose.

CASE VIGNETTE

Dr S, an experienced family practitioner of many years, has a mother and her teenage son in her examination rooms. The mother says that she is worried about the son possibly using drugs, especially cannabis, as his eyes seem strange and his concentration is poor. The son agrees to a random urine drug screen for cannabis. Dr S gets the result from the laboratory later that day stating "cannabis < 30 ng/mL". She phones the lab as she is unsure, from the laboratory report, whether the patient has taken cannabis or not.

INTRODUCTION

Most urine drugs of abuse (DOA) screening methods employ urine dipstick, using an immunoassay technology. These strips are impregnated with an antibody derived from an animal, usually a mouse, which has been exposed to the antigen of interest. The antibody is directed towards an epitope that forms part of the chemical structure common to a family of compounds, e.g. opiates. Thus, a single immunoassay can detect different types of opiates, such as heroin, morphine and codeine. Therefore, a positive result on an opiate screen can result from the patient having ingested any of these compounds as well as other members of the family, such as methadone.

There are proven concerns that immunoassays used in screening programmes may not be very specific as there are numerous commonly encountered drugs and other compounds that may cross-react in the assay because of a similar structure. This cross-reactivity may occur if the antibody binds a molecule that has a similar epitope of interest, even if the compound is unrelated to the molecule being tested for, i.e. a false positive result. There are published lists available of cross-reactants that have been described, with most laboratories able to provide this information.

An additional issue with regard to immunoassays is the lack of standardisation. Each monoclonal antibody

kit is unique to a manufacturer or to those to whom it has licensed the technology. This may result in discordant results occasionally, with one manufacturer's kit not agreeing with another as the antibodies recognise different parts of the antigen of interest. In addition, certain kits may be more sensitive to a specific DOA in a class than others.

Importantly, as the immunoassay tests for a structure common to a family of compounds, other related substances may also be detected, as in the case of poppy seed cake ingestion resulting in a positive opiate DOA testing, or hemp oil ingestion resulting in a positive cannabis test.¹ These compounds belong to the appropriate family, hence they represent a true positive result but there may well be occupational or legal consequences for the patient if they are detected.

Ideally, screening strips or cups should also have a means whereby the putative integrity of the sample is confirmed. Several options are available, which include urine creatinine concentration, specific gravity, temperature and pH. The importance of this step is highlighted by an Italian study that found that 3.8% of workplace samples were diluted; however, most of these samples tested positive for a DOA when using very sensitive gas chromatography mass spectrometry.²

CUT-POINTS AND LIMITS OF DETECTION

An underappreciated fact is that urine screening tests use arbitrary cut-points. A cut-point for each DOA is chosen by the manufacturer. Manufacturers may employ different cut-points, resulting in a positive test on one strip and a negative strip when another manufacturer's device is used. When asked, manufacturers can provide the cut-point of the kit. In addition, manufacturers are able to change the cut-points. Although cut-points are not standardised, certain conventions are emerging, in line with legislation in the United States of America (Table 1). These cut-points were developed to help reduce false



positive results, such as poppy seed ingestion causing positive opiate results.³

Urine can be a problematic matrix because of the wide and unpredictable range of analytes, concentrations and ionic strengths encountered. The repeatability of some devices around the cut-point may also be sub-optimal, with the same sample testing both positive and negative for a DOA at a concentration level close to the cut-point. Clinical laboratories accredited by the South African National Accreditation Service (SANAS) spend a lot of time, effort and resources establishing whether DOA test devices are fit for purpose. Relying solely on the published literature of a manufacturer has proven to be unreliable at times.

When a quantitative result is provided, extremely low or undetectable levels of the DOA are often reported as "less than (<)". This number, below which a quantitative result is not reported, is the lowest number that the laboratory has shown can be reliably reported, given the imprecision and bias of that particular assay.

CONFIRMATORY TESTING

Given both the poor specificity of screening immunoassays, with a false positive rate of 25% for some analytes, and the consequences of a positive result for the patient, most positive urine DOA tests should be sent for confirmatory testing.⁴ Mass spectrometry, coupled either to gas or liquid chromatography, is used for this purpose as it is considered to be the gold standard investigative method.⁵ This methodology is highly accurate and precise but requires technical knowledge and expertise to run and interpret and is therefore not suitable as a screening test. A mass spectrometer allows for the exact quantification of analytes at very low concentrations, much lower than those seen in immunoassays, with improved specificity and accuracy.

CONCLUSION

Urine drug screens are widely employed tests but do suffer from several shortcomings. In general, negative tests require no further testing unless at odds with the clinical setting. Positive screening tests should be sent for confirmatory testing using mass spectrometry due to the poor specificity of urine drug screens, as well as the possible consequences for the patient.

Table 1. Cut-points used for common drugs in US Federal workplace testing

Substance	Initial urine drug screen level (immunoassay) (ng/mL)	Confirmatory drug level (MS) (ng/mL)
Marijuana*	50	15
Cocaine†	300	150
Opiates	2 000	2 000
Amphetamines	1 000	500
Metamphetamine‡	1 000	500

* Delta-9-tetrahydrocannabinol is looked for

† Benzoyllecgonine is the cocaine specific metabolite

‡ Specimen must also contain amphetamine \geq 200 ng/mL

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Assessment of musculoskeletal disorders and absenteeism at a foundry

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ABSTRACT

Background: Musculoskeletal disorders are a major health problem globally and a significant cause of disability in the workplace. The purpose of this study was to describe tasks and body movements associated with the high rate of musculoskeletal-related complaints and absenteeism at a foundry in South Africa.

Methods: A quantitative study design was used. The data sources were a questionnaire administered to 38 participants, structured observation and company records. Descriptive statistics were used to analyse the data.

Results: All the participants were exposed to poor ergonomics which resulted in repetitive movements, twisting, gripping, and standing or sitting for long periods of time. Pain in the back and shoulders was the most common complaint, followed by stiffness of the fingers, wrists and shoulders. Most participants reported absence from work due to musculoskeletal complaints.

Conclusion: Repetitive movements in task performance and a lack of commitment to legislation contributed to the problem at the foundry. Addressing the ergonomics in the workplace in line with legislation is recommended to reduce these problems.

Keywords: work-related musculoskeletal disorders, absenteeism, repetitive movements, ergonomics

INTRODUCTION

The processes at a foundry include the crafting of casting patterns, manufacturing and assembling of moulds, smelting and refining of metal, pouring of metal into moulds, and cleaning of the finished part.¹ The work environment at foundries includes both chemical and physical hazards. According to the United States Occupational Safety and Health Administration (OSHA), foundry workers are most often exposed to physical hazards such as ergonomic-related risks. This is due to manual handling of heavy objects, repetitive tasks, awkward or static postures, and vibration.¹ The OSHA mentions that injuries to the lower back and upper limbs are common amongst foundry workers and may arise from doing work repetitively without adequate rest periods and exerting excessive force to move or grip objects.

Constant exposure to a combination of these risks could lead to musculoskeletal disorders (MSDs), decreased productivity, increased job stress and absenteeism.² A study conducted in Germany found that MSDs due to repetitive work were common in manufacturing industries, possibly caused by ergonomic stressors of the work environment.³ Awkward postures demand greater force, and the greater the force required to complete a task, the greater the stress impact on muscles and tendons, resulting in musculoskeletal injuries.⁴

Work-related MSDs are painful conditions affecting nerves, tendons, joints, ligaments and spinal discs, and are

associated with repetitive movements for extended periods.⁵ These disorders are a financial burden as operations are disrupted by decreased productivity and increased absenteeism.⁶ About 40 million workers in Europe are affected by MSDs.⁷ These disorders, as well as disability, appear to be on the increase.⁸ The statistical report of health and safety at work in Europe states that musculoskeletal problems accounted for 60% of work-related health problems in 2007, followed by stress, depression or anxiety (14%).⁹ MSDs accounted for 33% of all workplace injuries and illnesses requiring days away from work in the USA in 2011.¹⁰ The annual report of the National Institute for Occupational Health in South Africa proposes that MSDs are among the most commonly reported illnesses in the working population.¹¹

This study was contextual as it was performed at a specific foundry. The research problem, as identified from the foundry's clinic statistics, was the high rate of musculoskeletal-related complaints and absenteeism in four departments. There was inadequate information about the cause of these problems as no previous research had been done at the foundry.

The purpose of the study was to describe tasks and body movements associated with musculoskeletal-related complaints and absenteeism in the four departments of the foundry.

METHODS

This was a cross-sectional study. Data were gathered on specific risk exposures, and musculoskeletal complaints and body parts affected from workers at a foundry in South Africa. The study population was all workers in the four departments. They contributed to 65.0% of the clinic visits and 70.0% of the absenteeism rate at the foundry.

Non-probability purposive sampling was used, with the inclusion criteria being workers exposed to repetitive movements such as twisting, gripping, standing, sitting, vibration and manual handling of heavy objects. This specific criterion was identified from the job descriptions in the workers' HR records. For the purpose of the study, repetitive movements were defined as the same actions performed continuously. A sample of 45 workers was chosen. The selection of the workers was based on their abilities to provide information in answering the research question, but they did not necessarily represent the entire study population.

Three data sources were used: a questionnaire modified from the validated Nordic musculoskeletal questionnaire,¹² structured observation managed by a checklist, and company records. The questionnaire covered demographic data, current and previous job histories, risk exposures that might be associated with MSDs, use of personal protective equipment (PPE), and symptoms referring to nine body areas. The aim of the questionnaire was to identify risk factors that might predispose to musculoskeletal-related complaints and absenteeism.

The structured observation included:

- Repetitive movements and rotation of workers during task performance – observed for repetitive movements of different body parts, standing for long periods of time, repeated exposure to vibration, lifting of heavy objects and rotational change
- Behaviour of workers and adherence to safety rules and wearing of PPE, as well as pace of work and demonstration of pain and fatigue
- Ergonomics, maintenance, safety and design, including suitability of hand tools, maintenance of hand tools, machinery and equipment, safety and tidiness of floors and surfaces, illumination, ventilation, height of work benches, mechanical assistance and restricted spaces

The options on the checklist were yes (1) or no (2), with a column provided for comments from the observer. Reliability of the checklist for observation was tested by the technique of repeated observation, as observation of tasks was done during different shifts. Results were compared to establish the reliability of the checklist. Observation offered verification of the self-reported data and contributed to the reliability, validity and trustworthiness of the study.

Permission was granted for access to internal documentation such as statistical records, workers' records, job descriptions, the health risk assessment, hygiene survey and absenteeism records. The documents were studied prior to data collection.

The requirements of the Occupational Health and Safety

Table 1. Occupation of the study participants (n = 38)

Occupation	n	%
Grinder	17	44.7
Foreman and general	4	10.5
Shakeout attendant	4	10.5
Dipper and forklift driver	4	10.5
Dresser and off loader	4	10.5
Overhead crane driver	2	5.3
Smelt controller	1	2.6
Holding operator	1	2.6
Supervisor and general	1	2.6

Note: due to a staff shortage, the dippers and dressers additionally have to drive forklifts and offload, as required.

Act (85/1993) (OHSA) were applied as a guideline throughout the analysis. The main objective of the OHSA is to ensure that working conditions are healthy and safe for workers. The Act describes all the measures that should be taken by employers and employees to prevent accidents and diseases. It also describes a number of duties and prohibitions that are relevant to employers and employees, and contains guidelines to promote safety and health as well as safe and effective management of machinery.

Frequency and percentage distributions, measures of central tendency and graphs and tables were used to describe the data.

Ethical approval to conduct the study was obtained from the Research Ethics Committee of Tshwane University of Technology prior to data collection (Ref.: FREC 2013/06/003 (2) (SCI)).

RESULTS

The unforeseen closing down of the foundry during December 2013 affected the completion of questionnaires. Only 38 of 45 could be completed from August 2013 to December 2013. Thirty-eight men, aged 19 to 56 years, participated in the study. Most (31.6%) were from 41 to 50 years of age (mean age 39 (± 2) years). All the workers worked eight-hour shifts with only a 10-minute break at the commencement of their shift and a 30-minute lunch break after five hours of labour.

Most of the participants were grinders (n = 17; 44.7%) as shown in Table 1.

The job description and main tasks performed by grinders are to refine engine blocks by chipping and grinding the surface to remove excess and unwanted metal. They repeatedly manually handle and lift the engine blocks (25 kgs). The shakeout attendants separate castings from the mould as it is discharged from the shot blast machine. The engine blocks are hit and lifted with a wedge breaker and hammer to crack off the castings. They offload the casts on a hook to move on the runner systems. The dippers and dressers manually lift 2-2.5 kg cores from a conveyer belt and turn 180° to dip the cores into a blacking agent. Each core is shaken and twisted to ensure overall coating. The cores are then dressed with a

dressing pin. The remaining participants are responsible for filling of furnaces, transferring the ladles with melted metal to the holding furnace, and preparing metal for delivery to the moulding lines and offload lines. Some operate vibrating machinery for the entire eight-hour shift.

Figure 1 displays the distribution of years of service of the participants. The mean years of service was 10 ± 5.7 years. Only 7.9% ($n = 3$) had worked for less than six years.

Regarding body movements, the job risk exposures identified by the participants were repeated movements of different body parts, vibration, and standing or sitting for long periods of time (Table 2). The majority of the participants ($n = 37$; 97.4%) were exposed to frequent bending of their backs or necks and stood for long periods of time. Repetitive movements of arms and shoulders were reported by 92.1% ($n = 35$) of the participants; repeated exposure to vibration was reported by 52.6%. Vibration can be described as a shaking motion that can transmit its energy to all parts of the body, and may result in physical damage.

Pain and stiffness were the only musculoskeletal-related symptoms, regardless of the job description (Table 3). The most common body part affected by pain was the back ($n = 27$; 71.1%), followed by the shoulders ($n = 26$; 68.4%). The most common body part affected by stiffness was the fingers ($n = 5$; 13.2%), followed by the wrists and shoulders ($n = 4$; 10.5%). Participants standing for the entire shift were found to have the majority of complaints related to the back and shoulders.

Table 4 presents the experience and management of symptoms and absence from work. All the participants took rest breaks; however, 78.9% ($n = 30$) suffered from muscle stress and 60.5% ($n = 23$) from muscle fatigue. Most participants ($n = 21$; 55.3%) reported to be absent from work due to musculoskeletal complaints.

Annual absence from work due to musculoskeletal problems was reported and confirmed by the absenteeism statistics. Of the 21 participants who had musculoskeletal-related complaints, 15 (71.4 %) reported being absent once a year. The others were absent two to four times a year.

The foundry's annual statistics indicated that clinic visits

were high in four of the 12 departments. Statistics for the period of January to October 2012, obtained from the monthly health and safety reports, showed that workers from these four departments visited the clinic more frequently than those from the other departments. Workers from the four departments accounted for 65% of the 264 visits. A total of 30.0% of complaints received from all workers were musculoskeletal-related; however, for the four departments, the percentage was 40.0%. There were no guidelines on prevention or identification of MSDs at the foundry.

According to the absenteeism statistics obtained from the human resources department, 353 sick notes were issued to workers in the four departments during 2012. This resulted in 914 lost man days. Eighteen workers were absent for more than one day during this period. Seventy percent of the absent workers were from the four departments. The musculoskeletal complaints and absenteeism rate in the four departments suggested an underlying problem. Absenteeism at the foundry forced management to make adjustments, such as overtime and temporary replacements, to meet the production target. The foundry had no written attendance policy or guidelines on management of absenteeism.

Observation of ergonomics, maintenance, safety and design revealed that the hand tools in one department were too big for smaller workers. It was found that maintenance of hand tools, machinery and equipment was only done in two of the four departments. The extractor fans in the other departments were not in good working condition and could not be repaired due to insufficient funds. Some machines were leaking oil and were very noisy due to lack of maintenance staff and finances. The floors in all the departments were observed to be unsafe as they were cluttered with shot balls, scrap metal and iron dust. The illumination in all four departments was observed to be insufficient due to a number of broken lights and bulbs that were not working. There was a lack of ventilation in three of the four departments as the extraction fans were not working properly. There were no windows that could be opened. The work areas were observed to be ergonomically incorrect and most of the workers had to stand in a bending position for eight hours. This was noticed at the dipping tanks, the clipping ranks and the assembly lines. The grinding stations were too high for shorter workers and too low for taller workers. Hooks, chains, hoists and rollers were available in all departments to assist with lifting of heavy objects, but workers had to still manually lift blocks onto the hooks. Dippers and dressers had to manually lift the cores onto the roller system and off loaders had to manually unhook blocks from hoists and transfer them to rollers. The cabinets of overhead cranes were observed to be confined with restricted space. The shakeout attendants were working in a confined, hot space. The space in the core machines, grinding cells and hand shot blast booth was restricted.

The observation of workers showed that repetitive movements were required to perform tasks in all four of the departments. The shakeout attendants, dippers, dressers and grinders were exposed to repetitive twisting and turning of wrists and hands, and arms and shoulders; stretching and

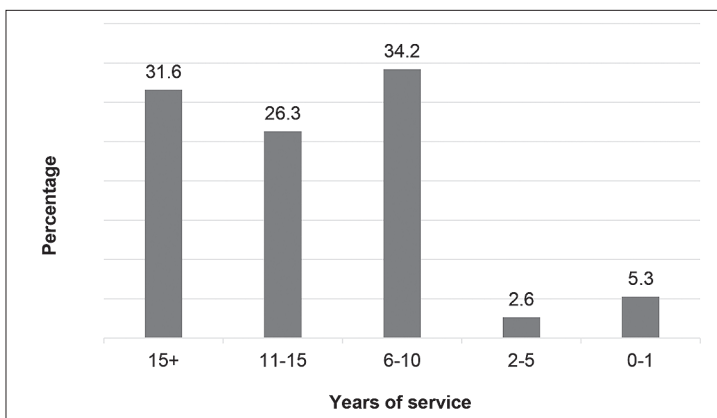


Figure 1. Years of service of the participants (n = 38)

Table 2. The job risk exposure (body movements) of the study participants (n = 38)

Body movements	n	%
High risk		
Bending of back or neck to crack off moulds, dipping and dressing of cores and offloading	37	97.4
Standing to operate furnaces, crack off moulds, dip and dress the cores and to grind	37	97.4
Repetitive movements of arms and shoulders to crack of moulds, operate cranes and forklifts and dipping cores	35	92.1
Repetitive movement and twisting of wrists and hands to dip and dress cores, to handle the wedge breaker and hammer and grinding	34	89.5
Repeated stretching to dip and handle cores, offloading and cracking off moulds	33	86.8
Repeated twisting to handle and dip cores and to crack off moulds	32	84.2
Repeated lifting and moving of heavy objects such as engine blocks, cores and ladle pushing	30	78.9
Pinching and gripping with fingers to dress the cores and grinding	21	55.3
Repeated work with vibrating equipment such as forklifts, grinders and standing on a vibrating surface	20	52.6
Low risk		
Work area at a comfortable height	27	71.1
Change in repetitiveness of daily tasks	23	60.5
Sitting to operate the overhead cranes and forklifts	6	15.8

Note: all participants performed the tasks for 8 hours (100% of the shift).

reaching and frequent bending of the back and neck was required every few seconds for longer than two hours. The workers stood for eight hours without sitting, and they all had to lift heavy objects repeatedly. Additionally, the shake-out attendants, dressers and grinders pinched or gripped objects in their hands every few seconds for more than two hours. The overhead crane drivers and forklift drivers did not manually lift heavy objects but they sat for the duration of the shift. Seventy-five percent of the observed workers were exposed to vibration. The only rotational change was during tea and lunch breaks.

The behaviour concerning safety rules was observed to be negligent regarding PPE, as workers in all departments sometimes removed earmuffs/plugs, gloves or masks during task performance. Safety rules were not enforced by supervisors. Not all participants used the required PPE, such as respirators and long sleeved jackets. The work rate in all four departments was determined by the production target for the day, and was planned at the commencement of each shift. Pain and fatigue were observed in workers in all four departments.

Table 3. Symptoms related to specific body part (n = 38)

Body part	Symptom			
	Stiffness		Pain	
	n	%	n	%
Fingers	5	13.2	18	47.4
Shoulders	4	10.5	26	68.4
Wrists	4	10.5	24	63.2
Neck	2	5.3	22	57.9
Legs	1	2.6	14	36.8
Arms	0	0.0	18	47.4
Back	0	0.0	27	71.1
Hips	0	0.0	7	18.4
Feet	0	0.0	21	55.3

Findings from the company records revealed an absence of environmental control standards to monitor and manage the various hazards associated with the processes at the foundry. The health risk assessments and hygiene surveys were not up to date due to financial difficulties. The most

Table 4. Experience and management of symptoms and absence from work (n = 38)

Item	n	%
Experience pain at least once a week while working	22	57.9
Change in job tasks may improve the problem	17	44.7
Suffer from muscle stress every day	30	78.9
Suffer from muscle fatigue every day	23	60.5
Need to use pain killers once a week	16	42.1
Treated for muscle, wrist, bone, neck or back pain during the last six months	27	71.1
Absent from work due to a muscle, wrist, bone, neck or back problem during the last 12 months	21	55.3



recent hygiene survey was conducted four years before this study, and the risk assessment, two years prior.

DISCUSSION

All 38 study participants experienced some musculoskeletal symptom. The most common was back pain, followed by shoulder pain. This finding is comparable to research in Europe that showed that about one in three workers suffers from lower back pain.¹³ The most common problems amongst workers in Europe in 2007 were reported to be back- (29.5%) and shoulder-related (20.1%).

All the participants were exposed to repetitive movements, poor ergonomics and hazards reported in the literature to cause MSDs. This is supported by previous research showing that poor ergonomics and repetitive movements are linked to MSDs.¹⁴⁻¹⁶ These studies reported that environmental exposure in terms of physical workload, repetitive movements and awkward posture may predispose to musculoskeletal pain and MSDs.

Although all the workers took rest breaks, the majority reported muscle stress and fatigue. These findings are validated by a study conducted in South Africa in 2010, in which it is stated that repetitive strain may cause muscle stiffness and injury to different body parts and that the work environment of today is synonymous with stress, fatigue and exhaustion.¹⁷ Highly repetitive tasks can lead to fatigue, tissue damage and, eventually, pain and discomfort, and can occur even if the level of force is low and the work postures are not very awkward.¹⁸

The majority of the participants were absent from work due to musculoskeletal-related complaints. The 2006 Norwegian statistics confirm that MSDs account for approximately one third of all causes of disability and sickness absence in Norway, amounting to 41% of days lost due to sickness absence.¹³

Of particular concern is that the requirements of the OHSA were not met. The hazards were not always addressed or controlled by management, and safety rules were not enforced to prevent injuries or disorders.

Limitations

The sample had to be reduced due to time restrictions, as the study was conducted during a period of unavoidable retrenchments and unexpected closing down of the foundry. Due to the small sample size in this study, the results cannot be generalised to other foundries, but could be beneficial to industries that rely on manual labour as they might heighten the awareness of the impact of work-related MSDs. Official industry-specific statistics for work-related MSDs are not available in South Africa, although research has been done in some workplaces.^{6,17,19,20}

CONCLUSION

This study confirmed that repetitive movements of different body parts are required to perform tasks at the foundry. These movements pose as a challenge to reduce the high rate of musculoskeletal-related complaints. The study identified a number of important factors such as compliance to safety rules and legislation, ergonomics, repetitive movements and absenteeism management, which need to be addressed in order to reduce work-related musculoskeletal complaints and absenteeism amongst workers in the four departments at the foundry.

RECOMMENDATIONS

Managers and leaders play an important role in influencing the behaviour of individuals at the workplace to ensure safe working practice. Employers need to take reasonable steps to identify, eliminate or alleviate hazards or potential hazards. However, workers are also expected to take care of themselves and co-workers. They need to co-operate with management on any matters pertaining to safety, and report any unsafe or unhealthy situation. Management can be guided by a hygiene survey as well as a risk assessment to ensure legal compliance and to identify potential hazards. The following steps should be undertaken to improve the current working conditions at the foundry and to limit hazards identified in this study:

- promote compliance with the Occupational Health and

Safety Act and related regulations, such as hazard identification, by means of an updated hygiene survey and risk assessment

- introduce occupational health and safety programmes to comply with safety regulations
- replace broken light bulbs to increase lighting levels and add tubular fanlights to enable workers to see better
- improve the general tidiness on site to limit trips and falls
- implement a MSD prevention programme, and document and communicate the process and findings to all workplace parties. To identify and control musculoskeletal hazards efficiently, processes and activities that target these hazards need to be established. Processes and activities must include training on MSD identification and prevention for all workplace parties
- reduce the frequency of lifting and the amount of time workers perform lifting and forceful exertion by rotating workers in lifting tasks with workers in non-lifting tasks
- alternate tasks requiring repetitive movements with less physically demanding tasks
- raise work surfaces to limit bending, e.g. the grinding stations, clipping ranks and the assembly lines
- allow height adjustment of the work areas where possible, as all the working stations are not comfortable for shorter/taller postures; alternatively, a portable foot bench could be provided for shorter workers and a pedestal for taller workers. Built-in foot rails allows the worker to shift body weight from one leg to the other
- institute ongoing awareness, education and training of workers and enforcement of rules for the use of PPE
- provide appropriate PPE – PPE cannot effectively control most MSD hazards, but vibration-dampening gloves, knee-pads for kneeling work and shock-absorbing insoles may reduce the hazards for workers handling vibrating hand tools or those exposed to constant vibration. Back support is essential for workers sitting for long periods or bending their backs repeatedly
- schedule periodic inspections and maintenance to ensure equipment is properly maintained and is not being misused
- develop an attendance policy, including guidelines on the management of individual cases of regular absence.

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I thank all the participants at the foundry, as this was not an easy road. The study was conducted during a period of

LESSONS LEARNED

1. The most important measures to ensure a safe working environment are the early identification of hazards and the knowledge to prevent them
2. Compliance with the Occupational Health and Safety Act (85/1993) and related regulations is crucial to limit hazards
3. Workers with musculoskeletal-related complaints are more likely to be absent from work

unavoidable retrenchments. My gratitude goes to those who believed in me and positively influenced others.

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DECLARATION

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35th National Annual Conference 2015



Western Cape Organising Committee for AGM 2015. Back: Rochelle Raatz, Bev Beute, Joan Visser, Sandra Hanekom, Annetjie Bacher, Judy Hendra, Theresa Bosman, Cheryl Burski. Front: Natalie Copeling, Rina Els, Dorothy Williams and Adele Warner



Theresa Bosman (Western Cape) received a merit certificate for service to SASOHN from President Kim Davis and Judy Hendra (Western Cape)



Awards were presented by the SASOHN president Kim Davies (centre) to two 'starfish throwers' who had a tremendous impact on the Certificate of Fitness position paper, Lindie Janse Van Rensburg (left) and Natalie Copeling



Mentor awardees



SASOHN Western Cape won the President's Award for the Best Regional Society



We wish to thank our exhibitors and our generous sponsors.

SASOHN Annual Conference 2015



The Western Cape Region of the South African Society of Occupational Health Nurses (SASOHN) was privileged to host the 35th National Conference at the Lagoon Beach Hotel in Cape Town from 4 to 6 November 2015. The theme of the conference was COME OUT OF YOUR SHELL and make a difference in Occupational Health, and focused on "STAR": Safety, Theory, Action and Research. In the individual context, the starfish represented each occupational health nursing practitioner (OHNP) taking a starfish and throwing it back into the sea, thereby effecting change, one starfish at a time.

Three pre-conference workshops were held on Wednesday afternoon:

1. An audiometry workshop presented by Dr Dirk Koekemoer, Angie Butkovic and Karin Meyer, and sponsored by Kudu Wave
2. The ageing worker presented by Dr Christianne Bouwens and Dr Felix Potocnik, and sponsored by SASOHN
3. TB, a radiological review presented by Dr Bryant, and sponsored by On-Site X-rays

All the workshops were well attended and very informative, with positive feedback from the delegates.

The Wednesday evening saw the delegates coming out of their shells in their nautical attire for a cocktail evening with the most stunning views of Table Mountain to the south west, the coastline of the west coast towards Blouberg, and beyond; Cape Town did herself proud with perfect weather!

The conference was opened on Thursday morning by Ms Kim Davies, the SASOHN President, and included a visual presentation of 35 years of SASOHN. The presentation invoked much laughter as delegates recognised their younger selves, and remembered colleagues who are no longer with us and the highlights of SASOHN's 35 years.

The programme of speakers kicked off with Dr Helgo Schomer, a well-known speaker whose curriculum vitae spans many career highlights, some of which include radio talk show host, teacher, director of behavioural health, founder and past chairperson of the Division of Health Psychology of Psy SSA, past SAS College of Applied Psychology Academic Board member, and Golden Key International Honour Society member. What Dr Schomer had to say resonated well with many as he reflected on his own life experiences to illustrate his key points which focused on five key areas: 1) listening to our bodies; 2) our psychological care, ability to problem-solve, forward planning, mentorship and resilience building; 3) our typical behavioural responses, where

Dr Schomer used humour to illustrate the differences between male and female brain function; 4) our role-related behaviour, and roles we want to be in; and 5) our social environment. He also discussed the balance between our external dynamic, creating peace for us women, space to become, and our internal static state in which we could dream, walk, sleep and exercise.

Mr Dale Kennedy, an ergonomist from Ergomax Holdings (Pty) Ltd., gave a presentation on An Introduction to Ergonomics Regulations. Dale spoke about the challenges of ergonomics in South Africa, demonstrating that there is a need to maintain work intensity through reducing the physical demands without detracting from the financial output. In conclusion, Dale confirmed that the ergonomics environment is complex, and emphasised the importance of a complete ergonomic risk assessment, as ergonomic furniture and accessories alone would not ensure good ergonomics!

Dr Ernest van Biljon, a familiar face to the SASOHN delegates, presented the new proposed Occupational Health and Safety Act, and some of the changes expected. The most important information shared was that audits, training, surveys and risk assessments will be key to the management of occupational health and safety in any working environment. Following risk assessments, procedure manuals will have to be in place, a record of training conducted, and precautionary measures taken to prevent any incident. If not complied with, a fine of R50 000 could be imposed on the employer. There needs to be evidence of a risk register to illustrate that those precautionary measures are in place, the risk assessment being the foundation of compliance.

Sr Sandy de Wet, an OHNP at the wonderful age of 71 years, still finds herself in the field of occupational health nursing. Sandy shared some of the attributes that the OHNP needs to add value to her continued employment. Four of the most important consumer requirements to demonstrate to top management include the cost to company, that middle management would focus on management issues, that employees had a "safe place" to go for help, and the ability of the OHNP to market one's added professional value. In order to do this, Sr de Wet imparted some valuable information on developing emotional intelligence.

The conference organisers were pleased to be able to include two research papers. Dr Shahieda Adams from the City of Cape Town presented her research on TB in the Western Cape and the risk to healthcare workers. The second research paper was presented by one



Ian Webster Silver Medal Award to Jo Goebel (Western Cape)



Ian Webster Gold Medal to Margot Pretorius (Western Cape)



OHNP of the Year Individual Award to Annamarie Maré (Vaal)

of SASOHN's own, Sr Theresa Bosman, who proposed the necessity of an occupational health controlling body in South Africa.

Mr Nick Bryant from Beyer Safety Footwear spoke on the ISO 20345 standards of safety boots and ISO 20347 standards for occupational shoes, and illustrated this with a video presentation. The afternoon session was concluded by Ms Karen Theunissen, an occupational therapist, speaking on psychiatric impairment in the workplace, focusing on challenging perceptions of psychiatry and mental health, guidelines in understanding concepts, and assessment and management of psychiatric impairment.

The highlight of the conference festivities was the gala evening, and delegates arrived smart and dashing with a touch of gold. Entertainment was provided by the very vibrant Elsabe Allridge who used plants and humour to illustrate some of life's everyday situations and got a very pertinent message across to her audience. DJ Clive from Occasions provided the delegates with music to get everyone in the mood for a good evening.

Awards were presented by President Kim Davis to very deserving candidates, and included:

- Janet Taylor Award for the highest marks in an occupational health diploma programme in South Africa to Hanli Cloete (Eastern Cape)
- Ian Webster Silver Award for the highest marks in a Bachelor of Technology occupational health programme in South Africa to Jo Goebel (Western Cape)

- Ian Webster Gold Medals for SASOHN members who successfully completed a Masters or Doctoral qualification based on an occupational health topic to Thandi Kumalo (Port Natal) Masters, Margot Pretorius (Western Cape) Masters, and Valencia Benjamin (Eastern Cape) Masters
- Journal Article of the Year was awarded to Agnes Huiskamp (Gauteng Central)
- OHNP of the Year was awarded to Annamarie Maré (Vaal)
- OHNP of the Year corporate award went to Hermina Nyepela (Gauteng Central)
- Mentor of the Year was awarded to Karin Meyer (Border Discussion Group)
- Honorary Life Membership went to Penny Orton (Port Natal)
- Merit Certificate was awarded to Theresa Bosman (Western Cape)
- EXCO Region of the Year was awarded to the Western Cape Region

The conference concluded on the Friday with the 35th SASOHN Annual General Meeting.

The exhibitors and sponsors play a very important part in the annual SASOHN conferences and, without them, no conference would be a success, so a very big thank you goes to each and every one of the sponsors.

*Prepared by Bev Beute & Judy Hendra
SASOHN Western Cape Committee
e-mail: mwhendra@iafrica.com*



Honorary Life Membership of SASOHN to Penny Orton (Port Natal)



Ian Webster Gold Medal to Valencia Benjamin (Eastern Cape)



OHNP of the Year Corporate Award to Hermina Nyepela (Gauteng Central)



Journal Article of the Year to Agnes Huiskamp (Gauteng Central)



The Mentor of the Year to Karin Meyer (Border Discussion Group)



The Ian Webster Gold Medal Award to Thandi Kumalo

SAIOH news



I would like to take this opportunity to wish all our SAIOH members, partners and stakeholders a prosperous 2016.

Considering that we are now entering a new year, we at SAIOH also want to especially thank Cas Badenhorst, the outgoing President, for his dedication, commitment and hard work during 2015. Cas will continue to serve on SAIOH Council and Exco as SAIOH's Past President. SAIOH Council and Exco of 2015 also want to thank our administrative staff, Kate Smart and Lee Doolan, for their efforts and commitment in 2015, in achieving SAIOH's goals and objectives.

2015 IN REVIEW

For SAIOH and us in general, 2015 could be considered a very successful and memorable year in terms of growth and development. As you know, SAIOH adopted a five-year strategy in 2014, and is therefore committed to achieving certain strategic goals (focus areas) with the onset of each year, until the year 2020.

In 2015, our strategic focus area was to provide sustainable support systems to nurture (or foster) growth (or progression) of SAIOH and the occupational hygiene discipline. It is with pleasure that we announce that, as part of our strategic focus area for 2015, SAIOH (with specific reference to our Chief Administrative Officer, Kate Smart) has managed to successfully implement the MySAIOH membership management system. Kate presented this initiative at SAIOH's annual conference in Cape Town in October 2015, explaining the system and its benefits to attendees. Julie Hills, the PCB chairperson, and team also put in a lot of hard work and effort in updating and renewing the PCB's assessment system for assessing and certifying Occupational Hygiene Professionals in South Africa.

As part of our strategic focus area, SAIOH Council and Exco also managed to update SAIOH's QMS and Manual, aligning it with SANS/IEC 17024 requirements, and aiming at South Africa National Accreditation System (SANAS) accreditation in the near future.

It is also my great pleasure to announce that we had a very successful and well attended annual SAIOH Conference in 2015. The conference was held from 28 to 30 October 2015, at the Lagoon Beach Hotel (Hotel and Conference Centre) in Cape Town. The Conference covered keynote, topical and technical papers, presented by local and international presenters. The abstracts will be published in the next issue of *Occupational Health Southern Africa*.

In November 2015, SAIOH and the American Industrial Hygiene Association (AIHA) signed a Memorandum of Understanding, paving the way for closer cooperation between the two professional bodies, but also with the aim to share information to the advancement of the occupational hygiene profession in southern Africa. One of SAIOH's

former presidents, Peter (Jakes) Jacobs, played a pivotal role in seeing the process through until the Memorandum of Understanding was signed.

PROSPECTS FOR 2016

In 2016, our strategic focus area will shift to build SAIOH's capacity on all levels and to strengthen branches in order to



Jaco Pieterse.

engage members at grassroots level (ownership through involvement). This means that we will revisit our branch structures to ensure that we engage our members in the advancement of the occupational hygiene profession. This will require some structural changes to be made to SAIOH branches to ensure that we maximize our efforts in support of our vision and mission. As part of our commitments, vision and mission, we will consider establishing new branches in some of our provinces and neighbouring countries, e.g. Namibia and Botswana.

SAIOH will hold its 2016 annual conference in the beautiful setting of Mpumalanga Province, from 26 to 28 October 2016. We hereby invite all our members, partners, stakeholders and other interested parties to attend the conference to promote the occupational hygiene profession and OH practice in southern Africa.

A formal announcement will be made on SAIOH's Council composition for 2016, after the Council meeting to be held on 29 January 2016. We want to thank everyone who nominated and voted for member(s) to serve on the Council for 2016.

THE WAY FORWARD

It needs to be reiterated that SAIOH Council and Exco, with the support of our members, partners and stakeholders, will continue to strive to improve and commit SAIOH in advancing occupational hygiene in southern Africa. In 2016, SAIOH will also strive for accreditation in terms of the SANS/IEC 17024 requirements. Most of the groundwork for this was performed in 2015 when updating SAIOH's QMS and Manual.

As part of the QMS update, and in alignment with SANS/IEC 17024 requirements, some structural name changes with regard to certain SAIOH structures were proposed. An official announcement will be made once these changes are officially endorsed by SAIOH Council and Exco.

SAIOH COUNCIL MEETING AND ASSESSMENT DATES

For Council meeting and assessments dates for 2016, please visit our website <http://www.saioh.co.za>.

Report by Jaco (NW) Pieterse

SAIOH President 2016

e-mail: saiohpresident@saioh.co.za



SASOM news

The SASOM Western Cape Chapter hosted the SASOM Annual General Meeting and preceding conference in Stellenbosch on 20 November 2015.

AGM 2015

At the AGM, the 2015 annual report by the Honorary Secretary, Dr Frank Fox, highlighted several meetings held with the Department of Labour (DoL), during which SASOM was recognised as the official voice of occupational medicine in South Africa, and a memorandum of understanding with the DoL was signed. It was agreed that SASOM and the DoL would collaborate in the development of occupational health at national, regional and global levels. The report included several meetings held with colleagues from SASOHN, regarding the certificate of fitness to work, and with the administrators of SAIOH, SASOHN and SASOM to discuss closer co-operation between the organisations, and also the MMPA. The possibility of a combined conference in the future was discussed.

CONFERENCE PROGRAMME

Delegates at the conference agreed that valuable information was gained from the following presentations:

- A review of the literature on *HIV associated neurological deficit in professional drivers* led to a proposal for new research, as discussed by Dr Hetta Gouse
- Mr Peter Strasheim gave a legal update on *Reasonable Accommodation, Access and Retention of Disabled and Incapacitated Employees* and the definition of disability in the Employment Equity Act
- Dr Anne Raynal presented *Current issues in health and safety regulations in the United Kingdom and the implications for occupational health services*
- Dr Anita Edwards discussed a study done on the legal compliance of the Kuduwave audiometer
- A life coach, Ms Karin Pratt, gave a unique view on finding your positive core
- Advocate Gerrit Augustyn presented his view of the importance of occupational health and safety from a legal perspective

- Dr Adriaan Combrinck introduced the delegates to the *Medichem Scientific Committee of the International Commission on Occupational Health* and their activities in South Africa

Where the presenter agrees, presentations are uploaded on the SASOM website eight weeks after the conference. We respect the wishes of those presenters who are reluctant to have their presentations placed on the website.

MEMBERSHIP SUBSCRIPTIONS 2016

As usual, the membership subscription was set for the new year and a recommended tariff for sessional work by an occupational medical practitioner was agreed upon in the Annual General Meeting. This information is available on the SASOM website.

SASOM PROGRAMME 2016

The SASOM Annual Congress will take place on 10 and 11 June 2016. The 16 SASOM branches in South Africa, Namibia and Zimbabwe will again arrange academic programmes in March and September this year. Usually held in the evening, each meeting will have an allocation of CPD points.

CPD POINTS

CPD points may also be earned by completing the questionnaires that appear in every *Occupational Health Southern Africa* Journal issue, and sending the answer sheets to the SASOM National Office. Each questionnaire is worth three CPD points if 80% of the answers are correct. By completing six Journal CPD questionnaires, SASOM members can earn 18 CPD points in one year.

For more information, contact Jenny Acutt, Project Co-ordinator in the SASOM National Office. e-mail: info@sasom.org

*Report by Jenny Acutt
Project Co-ordinator in the SASOM National Office
e-mail: info@sasom.org*

MMPAnews



The MMPA has planned a number of interesting events for the first half of 2016. The first one is the hosting of a workshop on Setting Standards in Noise Induced Hearing Loss (NIHL) in Kathu, Northern Cape on 10 and 11 March 2016. This will be first event of the year with the main objective being to discuss, in detail, all aspects relating to the hearing conservation programme, including the management of NIHL. All key stakeholders, including the Department of Mineral Resources, the Chamber of Mines, Rand Mutual Assurance, specialists working with employees with NIHL, and the management of mining houses, will be taking part. Among issues that will be addressed are the implementation of the standard threshold shift (STS), review of audiometric baselines, the role of percentage loss of hearing (PLH) shift, and a detailed step-by-step review of the hearing conservation programme. The programme is being finalised and will be sent to all MMPA members at the end of January.

During the 2015 Annual Congress, Dr Sophia Kisting, Executive Director of the NIOH, challenged all attendees to

consider including research as part of their ongoing occupational activities. There was overwhelming support for this idea, but members also expressed a need to review and refresh their skills in research methodology. To that end, the MMPA is arranging a workday research seminar with the NIOH, which will take place in May 2016. This interactive seminar will capacitate colleagues with key and pertinent tools to carry out research, and embark on academic writing and publishing. We strongly believe that there is a lot of good work that is currently being undertaken in the mining industry, that deserves wider communication, and this effort will greatly enhance the delivery of this objective.

Plans are currently afoot to finalise the preparations for the 19th Annual Congress which is scheduled for 2 and 3 September 2016. As always, we encourage all members (as well as non-members) to submit papers for presentation. The acceptance of abstracts will commence on 1 April 2016. Further information will be communicated in due course.

*Report by Dr Vusumuzi Nhlapho, MMPA President,
e-mail: VusumuziN@discovery.co.za*

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reached their destinations within the planned journey time. It is ideal for people who spend time outdoors, and those who exercise or travel on their own.

The mySOS app is able to geo-locate users and provide emergency services with accurate incident information, and an exact location of the incident with direct links to emergency call centres. It will benefit corporates, tourists, schools, security estates, travellers, and the general public in South Africa. mySOS partnered with Medpages for access to up-to-date healthcare information. mySOS recently launched the National mySOS myStroke Emergency Hotline in partnership with Boehringer Ingelheim and ER24. mySOS also launched a national ambulance emergency campaign with Netcare 911 in early 2016. mySOS has already helped save lives after activation for road traffic accidents, industrial accidents, mountain rescues, police emergencies and many more. The mySOS smartphone app is free for users and available for both iOS and Android. (<https://www.mysos.co.za/download.html>). For further information about the mySOS app, visit <http://www.mysos.co.za>, contact Dr Fanie Hattingh +27 (0)82 308 0951 or Albert van Urk +27 (0)82 909 0900, or e-mail info@mysos.co.za.

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