

# An evaluation of the occupational health programmes of the on-site clinic at a newspaper production industry in South Africa

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## ABSTRACT

The aim of the study was to evaluate the relevance, efficiency and effectiveness of occupational health (OH) programmes implemented at the on-site clinic for a specific newspaper production industry in South Africa. Donabedian's structure, process and outcome model was the framework for this contextual descriptive survey using a mixed method approach. A random sample (N=180) of 600 full-time employees completed a structured questionnaire. A workplace survey using a checklist for identifying hazards, controls and surveillance was used to collect data. Data were analysed using content analysis, frequencies and percentages were calculated for categorical data. The results of the study showed that OH programmes implemented were not based on the nature of hazards prevailing in various departments, the focus was on curative care and employees were not satisfied with many aspects of the service. It was thus concluded that the OH programmes needed to be adjusted and address the nature of hazards associated with newspaper production activities.

**Keywords:** On-site clinic, occupational health programme evaluation, newspaper production, workplace survey

## INTRODUCTION

In South Africa, for many years the provision of occupational and primary health care services has been closely intertwined. The restructuring of the entire health system by the democratic government in 1994, has put more emphasis on the adoption of the primary health care approach in the delivery of health care services in order

to promote the availability of basic health care services to all South Africans, both at the workplace and in the community. Occupational health (OH) programmes aid in ensuring and enhancing better health for all employees in the workplace thus promoting a high morale and increased productivity.

OH care is defined as health care that is concerned with the absence of unhealthy environmental factors or diseases in the workplace, thus promoting a healthy worker. It should aim at the promotion and maintenance of the highest degree of physical, mental and social well-being of workers in all occupations.<sup>1</sup> The WHO, in its 60th World Health Assembly in May 2007, endorsed the Global Plan of Action on Workers' Health (2008–2017). The plan incorporates all aspects that deal with workers' health, which include the protection among workers of departures from health caused by their working conditions and a better response from health systems to workers' health.<sup>2,3</sup>

OH programmes have the potential to improve employees' health, work motivation and job satisfaction and ultimately productivity, product quality and shareholder value will be improved. It has been estimated that good workplace health programmes could reduce lost production due to poor workplace health by two-thirds, equating to as much as 20% of the Gross Domestic Product in some countries.<sup>2</sup> It is thus important for OH nurse



practitioners to check from time to time if the OH and safety policies, set standards and planned OH programmes are adhered to in order to protect and promote the health of employees in the workplace.<sup>4,5,6</sup> An increase in the rate of occupational injuries and sickness absence among employees of a specific newspaper production industry, and the consequent decline in productivity, prompted this study. The researcher examined existing OH programmes implemented at the on-site clinic for a

the nature of hazards associated with the newspaper production process. This consisted of an employee survey and a workplace survey.

#### **Employee survey**

A pre-tested structured questionnaire, based on the reviewed literature, was developed by the researcher. In addition to collecting data on demographics and the occupational hazards, the questionnaire also measured

**“ ... good workplace health programmes could reduce lost production due to poor workplace health by two-thirds...”**

specific newspaper production industry in South Africa to establish if they were relevant to the nature of the hazards and associated risks of newspaper production, efficient and effective or if they required some adjustments or improvements.

#### **METHODOLOGY**

Donabedian’s model for evaluation, as cited in Stanhope and Lancaster,<sup>7</sup> formed the major framework for this study (see Figure 1). The model emphasises a comprehensive means of evaluating and improving health care programmes through a quality management approach. The essential elements of the model concern structure, process and outcome. In this study, structure pertains to factors associated with the setting in which care is provided, e.g. facilities, organisational structure, policies and procedures. Process relates to the manner in which the specific health care programmes are implemented and their relevance to the organisation’s corporate goals, and examines efficiency on an ongoing basis. According to Donabedian’s theoretical framework, outcome is a form of summative evaluation as it determines the programme’s effectiveness, and the satisfaction of the provider and the recipient of health care.<sup>7, 8, 9</sup>

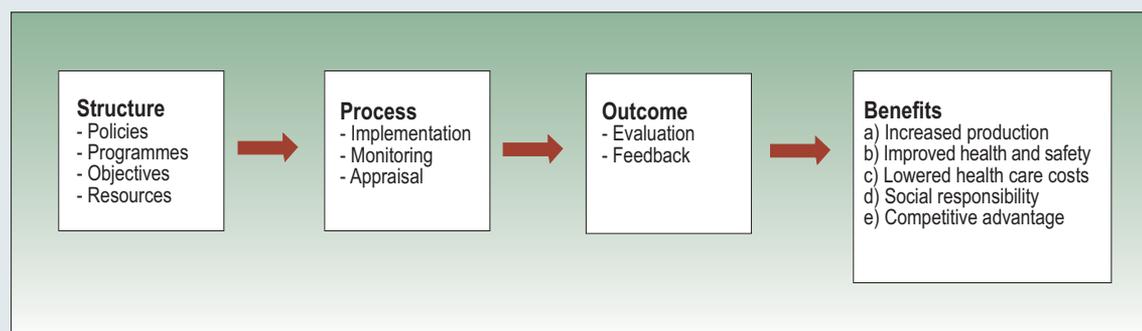
Using a mixed method approach, a contextual descriptive survey was conducted to identify the nature of and evaluate the OH programmes implemented in relation to

employees’ experiences and satisfaction with the on-site OH programmes in order to evaluate their effectiveness. The inclusion of employees is an essential component of programme evaluation. The questionnaire addressed the process and outcome aspects of Donabedian’s model.

Participants (200) were randomly selected by department from the employer’s payroll list of 600 full-time employees, whereby every third employee number was selected for inclusion in the study. Contractors and temporary workers were excluded from the study. The final response rate was 90% (N = 180).

#### **Workplace survey**

Workplace surveys are a mandatory part of the OH service activities, and help OH personnel to plan OH programmes, define the goals of their work, direct and follow-up their activities.<sup>5,6,7,8</sup> A checklist, based on Donabedian’s model<sup>7</sup> and relevant literature, was developed for the workplace survey. The latter included the ILO Convention No. 161 Guidelines<sup>10</sup> which prescribe the standards for surveillance of the working environment. The intention was to identify the nature of the work, work processes and the work environment associated with the newspaper production process, thus assessing the relevance of OH programmes implemented by the selected industry. This was used to assess the hazards and risk



**Figure 1. Adapted Donabedian’s model for programme evaluation**

factors and evaluate the control standards in place (structure and process components). Aspects such as health and injury records, as well as surveillance reports were evaluated as the outcome component of the model.

The following methods were used to collect data for the checklist, during the workplace environmental survey.

- Direct observation using a hazard inventory, in each department during full operation of the work processes, to estimate exposure time and compare it with established occupational exposure standards; spot checks of employees' practice and their adherence to safety procedures as prescribed in the procedure manuals; employee interviews to obtain their views regarding current and potential hazards and non-conformances to safety practices that were identified. It was envisaged that data on potential effects caused by each hazard could be used to recommend priorities for preventive and appropriate control measures.
- Inspection of audit reports to obtain the baseline information on the nature of occupational hazards and OH programmes.
- Review of employees' clinical records to identify the nature of health problems or complaints, link them to the occupational hazards identified and assess the relevance of the surveillance programme rendered.
- Review of statistical reports to identify absenteeism rates, patterns and trends due to ill-health (occupational and non-occupational) among employees as workplace health research relies on epidemiology and biostatistics, in order to establish links between hazardous exposures and adverse outcomes.<sup>11,12</sup>
- Review of OH and safety policies and procedure manuals, to evaluate their alignment to corporate goals in order to ensure coherence in the planning, implementation and evaluation of OH interventions or programmes.

Written informed consent was obtained from senior management and participants when they were asked to participate. The Ethics Committee of the Faculty of Arts, University of Zululand approved the study. Confidentiality (with respect to the workplace survey) and anonymity (with respect to the questionnaires) were maintained throughout the study. Data was analysed manually by means of content analysis. Content analysis refers to "the procedure for analysing written or verbal communications in a systematic and objective fashion".<sup>5</sup> Frequencies and percentages were calculated for categorical data.

## RESULTS

### *Employee survey results*

Half of the participants were aged between 18–39 years, 44.4% were between 40–59 years and only 5.5% were at 60 years and above. The majority (62.2%) were males. They were drawn from all the departments in the company. The study revealed that employees had access to OH programmes as part of their employment conditions,



but there were some obstacles in the provision of efficient and effective health care programmes that were rendered by the on-site clinic, due to the problems outlined hereafter.

- The accessibility, size and physical layout of the on-site clinic were not suitable.
- Some of the health programmes provided were not comprehensive as they focused more on a curative than preventive approach and they were not offered after hours in order to cater for shift workers.
- Health information resources, awareness and education about health promotion for employees' benefit were minimal and only available in one language (English).
- Most participants (72.4%) indicated that they were not utilising the on-site clinic as it did not cater for their individual health needs. For example, annual medical check-ups were not offered to them and they had to take time off work to consult their private doctors for that purpose.
- Some participants (34.6%) stated that they were suffering from chronic illnesses and were on long-term medication. Such medication was not provided by the on-site clinic and they had to take time off work to collect the necessary treatment. This is supported by that fact that nearly half (49.9%) of the participants were at the age of 40 years and above.

### *Environmental survey results*

The outcome of the environmental inspection revealed a range of department-specific hazards (see Table 1). With regards to the nature of OH programmes provided by the

on-site clinic in protecting and promoting the health of employees, the programmes listed below were identified.

- A primary health care programme, with the emphasis mostly on curative care.
- An HIV/AIDS awareness and education programme – offered partially voluntary counselling and testing for permanent employees only, as well as ongoing counselling on-site, care and support for HIV positive employees (anti-retroviral therapy was not offered).
- An employee assistance programme, provided by an outside organisation – most employees were dissatisfied as they had to take time off for consultation and follow-up counselling, and it was not extended to their families despite the fact that the effects of work-related stress had an impact on their social well-being.
- OH programmes, although these were not correctly implemented – the medical surveillance programme was partially implemented as only initial medical screening to

establish the baselines was done and no follow-up or periodic screening to identify any deviations from the employee's health as a result of occupational exposure to hazardous substances as required by the Occupational Health and Safety Act.<sup>14</sup> For example, regular hearing tests for employees working in noisy areas were not done in order to detect noise-induced hearing loss, which is a compensatable occupational disease according to the Occupational Injuries and Diseases Act,<sup>13</sup> as stipulated by the Regulation (Instruction 171). Employees were also not examined or screened on termination of employment in order to compare the results with the baseline findings and yet they were exposed to various hazards (see Table 1).

- The environmental standards to monitor and control the various hazards indicated were below the acceptable standards as per the Occupational Health and Safety Act<sup>13</sup> and the International Labour Organization's regulations.<sup>10</sup> For example, hazardous areas were not

**“ ... the ILO Convention No. 161 Guidelines ... prescribe the standards for surveillance of the working environment.”**

**Table 1. Hazard types and classification per department**

Department	Classification	Nature of hazards	Health problems
Human Resources, Marketing, Accounts, Management, Library, Editorial, Advertising, Switchboard	Physical	Computer screens	Eye strain
	Ergonomic	Poor ergonomics; inactivity	Musculoskeletal disorders
	Psychological	Work-related pressure, abusive clientele and deadlines	Stress
Canteen	Physical	Hot and cold temperatures (freezers and hot stoves).	Heat disorders like heat hyperpyrexia and/or fatigue.
	Chemical	Grain dust	Allergic rhinitis
	Psychological	Work-related pressure	Stress
Circulation Publishing Engineering Machine Room	Physical	Noise and vibration from the running machines; sharp objects	Noise induced hearing loss; vibration related disorders; lacerations, cuts, amputations
	Ergonomic	Prolonged standing and carrying heavy loads of newspapers	Musculoskeletal disorders including sprains and strains
	Chemical	Chemicals (isocyanide) in the printing inks	Irritant and allergic dermatitis
	Psychological	Shift work	Disturbed sleeping and eating patterns
Transport	Physical	Fatigue; motor vehicle accidents	Musculoskeletal disorders
	Psychological	Work-related pressure harassment; shift work	Stress
Security	Ergonomic	Prolonged standing and repetitive movements	Musculoskeletal disorders
	Psychological	Harassment, boredom and shift work	Work-related stress
	Physical	Heat/cold (weather elements)	Fatigue, health exhaustion and susceptibility to colds and flu

demarcated in order to warn employees if they entered high risk areas, the use of personal protective clothing and equipment was not enforced and a hearing conservation programme had neither been designed nor implemented. Records lacked evidence of the measurement levels of hazards that were prevalent in various departments, such as the noise levels in the machine room during the printing of the newspaper.

## DISCUSSION

The findings in this study revealed that the on-site clinic was not proactive in its approach to cater for the health needs of the workforce as it focused more on curative than preventive health care services. Such practice is not consistent with the restructured health care delivery system in South Africa which puts more emphasis on the adoption of the primary health care approach to promote the availability of basic health care services in the workplace.

The majority of participants indicated that they were not utilising the on-site clinic because the services offered did not meet their individual health needs. The most essential need for them was routine medical screening. This was a legitimate concern since medical surveillance of employees exposed to hazardous elements in the work environment benefits both the employer and the employee and also complies with prescribed legislation.<sup>4,5, 8, 15</sup>

The majority of the participants (49.9%) were between the ages of 40–60 years and about (34.6%) of them had chronic illnesses and were on continuous medication. Their expectations of having their chronic conditions monitored at regular intervals and arrangement for the provision of chronic medication were not fulfilled by the on-site clinic. As consistent with other studies and the WHO's Global Plan on Action, such expectations are essential for promoting the quality of work life of employees and to enhance health and safety practices of placing the "right" employee for the job, and in that way productivity will be achieved.<sup>3,5,6</sup>

A review by Foote (as cited in O'Donnell, 1997<sup>5</sup>), indicated that between 60 and 85% of hypertensive employees reported pressure control to normal limits while chronic disease management programmes were in place. However, education without medical treatment is ineffective. Furthermore, some businesses lack resources to mount their own OH programmes, thus traditional worksite-based programmes may miss many of the employees most in need of health promotion services.<sup>5</sup> Research findings have discovered that although OH programmes proliferate, they are often criticised for being haphazard, ambiguous and poorly evaluated and also for being limited to information pamphlets.<sup>16</sup> These findings are consistent with the results of this study, as most participants indicated the lack of awareness and education

and minimal health information resources about health promotion.

Results from the checklist revealed a lack of environmental control standards to monitor and manage the various hazards associated with the newspaper production process. Records inspected also lacked evidence of the measurement in order to quantify the exact levels of prevalent hazards like noise and dust as stipulated in the ILO Convention 161 for surveillance of the working environment.<sup>10</sup> Such findings indicate a gap in the industry's identification and management of OH hazards and risks as the WHO's Global Plan of Action has stipulated a need for basic set of OH standards whereby the minimum requirements for health and safety protection of employees, enforcement and regular inspection must be set and achieved respectively.<sup>3</sup>

The most prevalent hazards identified were noise, and poor ergonomic practices and prolonged standing leading to musculoskeletal disorders. Occupational stress was also problematic among employees in most departments, due to the nature of the activities associated with newspaper production. There were no specific programmes to address these hazards, indicating a need for the revision of existing OH programmes in order to address the types of hazards identified. Of particular relevance are the processes for addressing the psychosocial risks and work-related stress in countries in economic transition, in newly industrialised, and in developing countries.<sup>17</sup>

Chemicals in the inks were used during the newspaper printing process. Three colours used were magenta, cyan and yellow. These are generally free of heavy metals including lead due to newspaper publishers having established global standards for printing inks, which effectively banned compounds of lead or other heavy metals. Some cyan inks still contain copper, which is an essential trace element. For this particular organisation, the inks that were used had isocyanides but did not contain any heavy metals. However, the material safety data sheets (MSDS) for each department where such chemicals were used were not readily available. This is in breach of the Hazardous Chemical Substances Regulation under section 43 of the Occupational Health and Safety, 1993 as amended.<sup>14</sup>

The primary prevention of occupational hazards and appropriate and essential interventions for hazards prevention are crucial aspects in promoting the health and safety of employees in the workplace.<sup>3</sup> Other documents examined included the organisation's health and safety policy and procedure manuals, which revealed fairly good alignment with the company's other corporate policies and applicable South African Labour legislation.<sup>18</sup> This complied with WHO's plan to incorporate workers' health into other policies or in the context of trade policies.<sup>3</sup>

The significance of this study for OH nursing practice

*“ ... although OH programmes proliferate, they are often criticised*

*for being haphazard, ambiguous and poorly evaluated.”*

is the recognition that OH programmes are part of the overall health promotion programme and must aim at changing employees health practices (both at work and in the community) with a view to improving the overall health status of the entire workforce, thus reducing ill-health and the related health care costs. Therefore, such programmes should be evaluated and improved to ensure effective and efficient service delivery. The study describes an evaluation approach based on Donabedian's model.<sup>7</sup>

### VALIDITY

The random selection of participants and representation of all the departments reduced the threat to internal validity. The threat to external validity from untrue answers of employees regarding their satisfaction and experience of the OH programmes was minimised by requesting them to answer honestly and also by using triangulation of methods to collect data (the checklist for observation of the work processes, employee interviews and a retrospective review of clinical records, audit reports, policies and procedures).

### CONCLUSION

The results of the study revealed that the onsite clinic provided curative focused programmes, many of which were not comprehensive, were partially implemented and were not based on the nature of the hazards prevailing in various departments. Thus it was concluded that if the OH programmes were improved and fully implemented at the on-site clinic, the problem of increased ill-health and drop in productivity could be greatly reduced.

### RECOMMENDATIONS

The following recommendations were based on the findings of the study:

- improvement of the on-site clinic facility;
- a 24 hour service, with a focus on preventive health care;
- promotion of compliance with the Occupational Health and Safety Act and related regulations<sup>14</sup> (environmental surveys, with hazard identification and risk assessment, regularly conducted by qualified persons, and results available for employees and management; medical surveillance and biological monitoring);
- implementation of hearing conservation, accident prevention, chronic illnesses, stress management and

employee assistance programmes;

- ongoing awareness, education and training for employees working in hazardous areas and encouragement of the use of personal protective equipment.

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