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# The Extent of Occupational Health Hazard Impact on Workers: Documentary Evidence from National Occupational Disease Statistics and Selected South African Companies' Voluntary Corporate Social Responsibility Disclosures

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**Abstract:** This paper explores the potential of Corporate Social Responsibility disclosures in providing alternative information on the extent of occupational health hazard impact on workers, by selected South African companies operating within the manufacturing and utilities sectors amidst an absent national occupational disease surveillance system. An online internet search was used to retrieve publicly available national occupational disease statistics published between 2001 and 2020, and Corporate Social Responsibility reports of selected South African case companies, published between 2015 and 2020. Content analysis was used to analyse the retrieved documents for both descriptive and numeric data. The collection and reporting of occupational disease data in South Africa is inconsistent. Corporate Social Responsibility disclosures related to occupational health metrics vary between companies. Occupational disease incidence was the least reported of the social aspects in Corporate Social Responsibility disclosures, and/or were reported as a single statistic or combined into occupational safety incidence rates in some instances, obfuscating the true extent of the impact caused by occupational health hazards on workers. Furthermore, noise-induced hearing loss remains the most prevalently reported occupational disease, in general. Corporate Social Responsibility reports point to occupational health hazards requiring regulatory intervention, whilst also providing an alternative information source for occupational disease statistics.

**Keywords:** corporate social responsibility; incidence rate; noise-induced hearing loss; occupational disease; occupational health; occupational safety



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## 1. Introduction

The provision of a healthy and safe workplace is a universally recognised human right and also a sustainable development goal [1]. To sustain this right and development goal, companies are under increasing pressure from various internal and external stakeholders to evaluate the impact of their operations on workers and the environment alike [2,3], over and above to prevent worker physical harm from exposure to occupational health hazards [4]. To show commitment to preserving this right, companies are required to initiate appropriate occupational health and safety (OHS) programmes and management systems that address aspects such as worker consultation and participation, hazard identification and risk assessment, and worker training, amongst others [1,5]. These management actions are expressly and unambiguously used for demonstrating the commitment to provide a safe and healthy workplace as well as observing employment standards as required by OHS and labour laws [6]. The outcomes that derive from these initiatives are reported in voluntary Corporate Social Responsibility (CSR) reports [7], providing a documentary of progress

that companies with CSR commitment and goals make in so far as OHS programme management is concerned [7,8].

Although there currently exists no universal convention on its definition, CSR refers to the "responsibility of an organisation for the impacts of its decisions and activities on society and the environment, through transparent and ethical behaviour that contributes to sustainable development, including health and the welfare of society; takes into account the expectations of stakeholders in compliance with applicable laws and consistent with international norms of behaviour; and is integrated throughout the organisation and practised in its relationships" [9]. The importance of OHS within CSR is highlighted by its inclusion in guidelines and tools that report and measure CSR performance [10]. Examples of these guidelines and tools include the South African National Standard (SANS) 26000 standard [9] and the Global Reporting Initiative (GRI) [1,4]. CSR reporting on the other hand refers to "an organisation's practice of reporting publicly on its economic, environmental, and/or social impacts, and hence its contributions—positive or negative—towards the goal of sustainable development" [3]. CSR reporting is thus used as a communication tool by companies to convey a companies' social and environmental performance information to affected and interested stakeholders [11,12]. The CSR reporting is done through publication of annual CSR or sustainability reports [3,11]. In South Africa, companies registered in terms of the Companies Act [13] are required to publish annual reports that can include CSR performance metrics. Moreover, companies listed on the Johannesburg Stock Exchange also have continuing disclosure obligations per the listing requirements, including the publication of annual integrated reports [14]. The size, legal form of the company, and industry type, however, affects company uptake and commitment to CSR reporting [11]. Even though there are standardised CSR tools, globally, none of these tools have currently been agreed as reference standards for CSR reporting [11,12].

In the case of South Africa in particular, which has no national occupational disease (OD) surveillance system, social and operational performance metrics communicated by companies within CSR reports provide a potentially useful alternative information source [15] for OD incidence emanating from industry continuing operations. The transparent reporting and full disclosure of OD prevalence within CSR disclosures also provides information to various stakeholders on the efficiency and success of implemented OHS law-induced programmes at a company level. In cases with an increase in national OD prevalence statistics, corresponding enforcement strategies to addresses industry non-compliance will be required [16], a response not clearly discernible in the case of the historically and pervasively high noise-induced hearing loss (NIHL) prevalence in South Africa [17]. Added to that, though the annual reports of the South African Department of Employment and Labour inspectorate indicates that enforcement of OHS laws is being conducted [18–20], there remains limited reporting on the specific focus of these enforcement activities in view of historically reported ODs.

From another perspective, the publicly available national OD statistics in South Africa, which are derived from compensation claims submitted by industries from the manufacturing, utilities, and related sectors (general industry) to the Compensation Fund, are scant in detail regarding issues such as specific industry sources wherein these cases emanate. In recent years, a number of reported and compensated ODs have been omitted in the annual reports from the Compensation Fund [19,20], an information gap that can be filled by a national OD surveillance system if present [17,21]. The omission of reporting and compensated ODs has further resulted in an information dearth amongst public health researchers and OHS specialists on the impact of occupational health hazard exposure. The available historic OD statistics, where available, do, however, provide a basis for investigating the regulatory effectiveness of OHS laws on a national level [22]. Ideally, company OD disclosures should correlate with the national OD statistics, provided there exists an effective national OD surveillance system, supplemented by standardised company CSR reporting on OD metrics.

A bibliographic analysis on CSR research trends indicated that the African continent accounted for less than 1% of research directed towards OHS reporting within CSR disclo-

sures [23], indicating a research gap from an African perspective. In general, there is also a growing need for specific or differentiated reporting within CSR disclosures in regard to occupational health and occupational safety matters [24], as advocated by the Global Reporting Initiative [1] 403 standard. In regard to occupational health reporting especially, the exclusion of specific information such as investigated cases indicates that companies are failing to protect employee health and safety [25]. In adopting a research strategy singling out the specific reporting of ODs and OD incidence rates, this current study highlights the importance of occupational health management within industry implemented OHS programmes and their intended purpose of protecting workers from occupational health hazards impacts, as well as protecting companies from unwanted reputational and litigation risks. On the point of litigation risk, various mining houses in South Africa have recently settled an industrial class action lawsuit initiated by former mine employees who contracted silicosis and TB from historical dust exposure [26,27], highlighting the importance of occupational health programmes for preventing occupational health hazard exposure.

The dual purpose of this study was firstly, to examine the extent of occupational health hazard impact by a review of the national OD statistics amidst an absent OD surveillance system. Secondly, the study examined the format and extent of occupational health reporting, reflected as ODs and OD incidence rates within CSR disclosures by specific South African companies from the manufacturing and utilities sectors, as a potential alternative information source for OD prevalence statistics.

## 2. Literature Review

Companies adopt CSR organisational principles in support of sustainable development goals, and the recognition of the need and benefits of socially responsible behaviour, as well as in part to ward off stakeholder pressure in relation to operating environmentally-friendly operations [9,28]. According to the SANS 26000 standard [9], the CSR organisational principles include subjects such as human rights, labour practices, the environment, consumer issues, and community involvement and development. Adoption of the CSR standards, such as those specified in SANS 26000, reflects the ongoing need to preserve healthy ecosystems, social equity, and organisational governance [9].

Studies on CSR reporting in South Africa date back to the Apartheid years, during which multinational companies such as General Motors were faced with investor pressure to divest from the country due to concerns about the prevailing discriminatory human rights at the time [29,30]. Since then, CSR reporting has generally seen an increase over the years [31], and is strongly linked to its compatibility to a company's operations [32]. This operationalisation, often incorporated into company short-term incentives schemes, indicates its acceptance as a business value [33,34]. The CSR reporting increase has also extended to an increase in disclosures related to OHS performance metrics [23], and is integrated to include disclosures on ODs, injuries, accidents, and work absenteeism, based on a company's chosen reporting indicators. However, some companies are lagging in adopting CSR values including commitment to OHS performance, an indicator of limited accountability and transparency [35]. The lag is blamed on complexities related to social compliance costs associated with the adoption of CSR, especially within small medium enterprises [32]. Furthermore, the lag also extends to companies with internal views that OHS is a meaningless, though necessary, indicator of responsible business practice [10].

By virtue of the voluntary nature of the CSR system and related reporting, it still remains unclear, however, as to what drives companies' CSR strategies [33]. There also remains scepticism about its effectiveness without any form of supervision and operational discipline as that arising from government regulation and enforcement. In an attempt to establish the motivation behind company CSR reporting, Campbell [36] argued company affiliation to industry associations, whilst Hajmohammad and Vachon [34] argued that safety culture are influencing factors in companies' uptake of CSR activities. Moreover, companies use the information contained in CSR reports to close the operational knowledge gap between

management and investors; and create symmetry in interpretation [37]. In addition to being seen as doing the right thing, implementing CSR initiatives shows that a company's leadership assumes a responsibility beyond creating profit for stakeholders [38]. Furthermore, the pressure and demands exerted by stakeholder groups on companies to implement OHS strategies is also important. In this regard, companies engage in OHS and CSR reporting activities, within the institutional theory, to demonstrate the ecological sustainability of an organisation [39], as well as to negate the pressure and demands of stakeholder groups by demonstrating legal compliance with OHS laws [12,40]. Most recently, companies are drawn into implementing voluntary OHS management systems due to publicly stated CSR commitments [41], providing a decision-making tool for use by both internal and external stakeholders. This is in line with the stakeholder and accountability theories [12,40].

Some companies also include OHS performance metrics within CSR reports, highlighting its prioritisation [7], whilst also increasing risk awareness amongst both internal and external stakeholders [42]. Within CSR reports, the concept of OHS, defined as the "the discipline dealing with the prevention of injuries and diseases of workers resulting from materials, processes, or procedures used in the workplace" [43], often misconstrues and/or conflates occupational health and occupational safety as a single concept. Technically, occupational health deals with chronic, repeated exposure patterns to occupational health hazards that occur during routine activities and unusual plant conditions, leading to an OD. Conversely, occupational safety is characterised by acute exposure events from safety hazards resulting from accidents and routine activities, leading to physical injuries of various degrees [43]. Undoubtedly, current OHS laws have had a positive impact on improving occupational safety performance by regulated industry. However, the improvement of occupational health performance still remains a challenge as companies view it as an insignificant risk, which could lead to future legal and reputational risk [10]. Occupational health, a specialised field within OHS programmes, is intended for OD prevention and its improvement goes beyond legal compliance with OHS laws. To highlight the importance of occupational health programmes, the Health and Safety Executive [10] reported that a majority of workers absent from work are absent due to ill health, an occupational health issue compared to occupational safety-related incidents, a fact oblivious to some companies. Occupational health management and CSR are, however, managed by different company structures using different value systems, which may lead to a lack of interface and coherence between the two specialist fields [44].

The reporting of OHS metrics within CSR disclosures varies widely and includes reporting formats that categorise using indicators such as injury rates, amount of lost time, illness and sickness rates, accidents, health and safety, inspections, certifications, penalties, awards, incident-induced medical treatment, exposure to hazards, corporate management on health and safety, and health and safety training [24]. Quantifiably, the extent of the variance of the stated OHS indicators, which vary between companies, can number between 12 to 50, depending on the chosen format [45,46]. The variance makes comparisons of the quality of company OHS reporting within CSR disclosures cumbersome, with Chan [47] reporting 13 different definitions of accident rates as an example. The variance of the indicators as well as the adopted definition of a chosen performance indicator result in differences in the OHS reporting formats within CSR disclosures as well as making the standardisation of reporting themes cumbersome [24].

Previous studies into OHS reporting within CSR disclosures [7,24,48–51] focused on content analysis in broad terms, and omitted reporting of specific occupational accidents [49], which according to the South African Occupational Health and Safety Act [52] and the General Administrative Regulations [53], include ODs listed in Schedule 3 of the Compensation for Occupational Injuries and Diseases Act [54]. The specific reporting of OD incidence is a central focus of this study. Due to the broad scope of OHS, aggregated reporting of OHS metrics in CSR disclosures as a single statistic is viewed by some researchers, as an attempt by companies at worker "safewashing" [25,55], as it conceals the actual state of health of the employees exposed to occupational health hazards. The scholarly claim of

company attempts at worker "safewashing" is supported by the characterisation of CSR reports as being biasedly and inaccurately written, and being classified as incomplete [24]. CSR disclosures on OHS metrics that are objective, accurate, and complete can be beneficial to both workers and employers alike, in that management decisions and the impact of these decisions can be continuously and tangibly monitored [25].

## 3. Materials and Methods

### *3.1. Search Strategy*

The search strategy adopted for this study is shown in Figure 1. As a departure point, a desktop hazard identification study was conducted through the analysis of the United States' National Institute of Occupational Safety and Health's (NIOSH) Health Hazard Evaluation (HHE) reports, to establish and link specific industry types within the manufacturing and utilities sectors with specific inherent occupational health hazards. No similar repository to the United States' NIOSH HHE currently exists in South Africa. In turn, the extent of exposure to the identified occupational health hazards is reflected in compensated ODs on a national level and OD incidence at a company level. The results of the desktop hazard identification study have been previously reported in Rikhotso, Morodi [56], where companies operating in the steel, automotive, food, utilities, pulp and paper, cement, and petroleum manufacturing were found to have inherent occupational health hazards with varying exposure levels. Examples of specific occupational health hazards from the included case companies are shown in Table 1. The outcome of the desktop hazard identification study informed the purposive selection of companies included in this current study in view of prevailing occupational health hazards. In this regard, companies within the South African manufacturing, utilities and similar sectors operating in the same industry type as those identified in the desktop hazard identification study were purposely selected, as shown in Table 1.

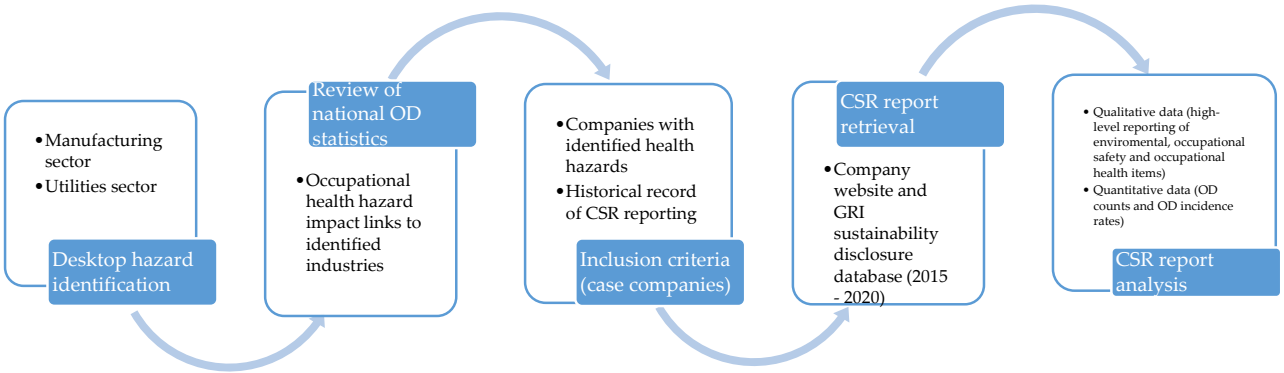


**Figure 1.** Research strategy adopted.

To appraise the extent of the impact of exposure to the occupational health hazards from the desktop hazard identification study, national OD statistics from the South African Compensation Fund annual reports up to 2020, where available, were searched online. South Africa as of 2022 has no national occupational hazard, OD, and injury surveillance system. The South African Compensation Fund annual reports have historically been the source of OD and injury compensation claims submitted by the manufacturing, utilities, and other sectors, excluding mining. National OD statistics are useful in increasing both worker and employer understanding of work-related risks and can also inform policy decisions. The collection and collation of these statistics is, however, unstructured or non-existent in many developing countries, South Africa included. This is compounded by the fact that many exposed workers are employed in the informal sector with no formalised OHS programmes [22]. In view of that, company voluntary CSR disclosures offer an alternative information source for identifying industries having the most prevalent OD impacts [17], and clarifying specific occupational health hazards requiring urgent intervention.

**Table 1.** Case companies included and sectoral classification.

| Company Name (Web Address) | Sector | Health Hazard Example | Company Name (Web Address) | Sector | Health Hazard Example |
|---|---|---|---|---|---|
| AECI (https://www.aeciworld.com/ (accessed on 2 February 2022)) | Chemical | Noise, ammonia, nitric acid, mineral oils, lead, other various hazardous chemical agents | Mondi (https://www.mondigroup.com/en/home/ (accessed on 2 February 2022)) | Paper | Noise, heat, sulphur dioxide, sodium hypochlorite, hydrogen peroxide, sodium hydroxide, etc. |
| African Oxygen Limited (https://www.afrox.co.za/en/index.html (accessed on 2 February 2022)) | Chemical | Noise, industrial and medical grade gases (simple asphyxiant and chemical asphyxiant gases) | Nampak (http://www.nampak.com/ (accessed on 2 February 2022)) | Packaging material | Noise, ergonomic extremities, high density polyethylene, polyvinyl chloride, aluminium, etc. |
| ArcelorMittal South Africa (https://arcelormittalsa.com/ (accessed on 2 February 2022)) | Steel | Noise, heat, coke oven emissions, polyaromatic hydrocarbons, etc. | Omnia (https://www.omnia.co.za/ (accessed on 2 February 2022)) | Chemical | Noise, chlor-alkali, sodium salts, ethanolamines, amino acids, etc. |
| Berry Astrapak (https://www.rpc-astrapak.com/ (accessed on 2 February 2022)) | Packaging material | Noise, ergonomic extremities | PetroSA (http://www.petrosa.co.za/Pages/Home.aspx (accessed on 2 February 2022)) | Chemical and petroleum | Noise, various hazardous chemical agents including petroluem vapours, etc. |
| Distell (https://www.distell.co.za/home/ (accessed on 2 February 2022)) | Food and beverage products | Noise, heat, sand, silica, soda ash, limestone, etc. | PPC (https://www.ppc.africa/ (accessed on 2 February 2022)) | Cement | Noise, lime, limestone, calcium flouride, etc. |
| Engen (https://engen.co.za/ (accessed on 2 February 2022)) | Petroleum refining | Noise, various hazardous chemical agents including petroluem vapours, etc. | SABMiller (https://www.sab.co.za/ (accessed on 2 February 2022)) | Food and beverage products | Noise, heat, carbon dioxide, ammonia, ergonomic extremities |
| Eskom (https://www.eskom.co.za/ (accessed on 2 February 2022)) | Electricity generation | Noise, coal dust, fly ash, crystalline silica, nitrogen oxides, etc. | Sappi (https://www.sappi.com/ (accessed on 2 February 2022)) | Paper | Noise, heat, sulphur dioxide, sodium hypochlorite, hydrogen peroxide, sodium hydroxide, etc. |
| Hulamin (https://www.hulamin.com/ (accessed on 2 February 2022)) | Aluminium products | Noise, aluminium, metal dusts from extrusions including copper, manganese, magnesium, etc. | Sephaku (https://sephakuholdings.com/ (accessed on 2 February 2022)) | Cement | Noise, lime, limestone, calcium flouride, etc. |
| LafargeHolcim Limited (https://www.lafarge.co.za/ (accessed on 2 February 2022)) | Cement | Noise, lime, limestone, calcium flouride, etc. | Sasol Limited (https://www.sasol.com/ (accessed on 2 February 2022)) | Chemical, petroleum and coal products | Noise, various hazardous chemical agents including petroluem vapours, etc. |
| Metair (https://www.metair.co.za/ (accessed on 2 February 2022)) | Machinery | Noise, heat, polypropylene, polycarbonate, acrylonitrile-butadiene-styrene, ergonomic extremities | Tongaat-Hullet (https://www.tongaat.com/ (accessed on 2 February 2022)) | Food and beverage products | Noise, bagasse, heat |

### *3.2. Company Inclusion and Exclusion Criteria*

The purposely-selected companies included Johannesburg Stock Exchange-listed and two unlisted state owned enterprises. Due to their public nature, the selected companies have legal and voluntary reporting obligations on matters related to CSR disclosures. In this regard, annual CSR reporting, retrieved from either the companies' web address and/or the GRI Sustainability Disclosure Database, where available, provides insights of a company's OHS performance. The study considered historic CSR disclosures of the case companies covering reports published from 2015 to 2020.

Table 1 also shows sectoral classification of each case company included, covering the manufacturing and electricity, gas, and utility sub-industries. Typical across the selected case companies is the use of machinery and equipment, often resulting in noise emission that expose workers. The included case companies manufacture an array of industrial products ranging from chemicals, fertilisers, electricity, gas, packaging material, beverages, paper and pulp, cement, aluminium products, and steel, for both local consumption and export. Due to the international footprint of some of the case companies, only CSR reports from their South African operations were considered for inclusion in this study, with differences in global OHS regulatory frameworks informing these criteria.

### *3.3. Data Managemegent and Analysis*

Document analysis, a type of qualitative research method [57] and a data collection method [58], was used to extract specific qualitative and quantitative data from the enlisted CSR reports and the Compensation Fund reports, where available. According to Bowen [57], document analysis as a research method can be systematically applied in the evaluation or review of documents that are in print or electronic form. The longitudinal analysis [30] using the READ approach to document analysis was used in extracting meaningful data from the CSR reports by (1) readying the materials, (2) extracting the data, (3) analyzing the data, and (4) distilling the findings [59].

Following document analysis, the results were themed into qualitative data (overall CSR reporting and motivation for reporting by enrolled companies, evaluation of enrolled company occupational health, environment, and occupational safety reporting) and quantitative data (national OD statistics and OD incidence rate CSR reporting by enrolled companies). As the study central focus was restricted to OD impacts on workers, combined OHS indicators reported as a single statistic were duly excluded from the final analysis, due to the obscure nature of such data.

#### 3.3.1. Qualitative Data

The qualitative data of the study are shown in Tables 2 and 3. The company CSR reporting status and the stated motivation for reporting are summarised in Table 3. Table 4 provides a summary of company reporting on occupational health, occupational safety, and environmental aspects. In total, 118 CSR reports were examined.

#### 3.3.2. Quantitative Data

Descriptive counts of the compensated OD were read from the annual Compensation Fund reports, where publicly available, and are summarised in Table 4. The quantitative counts of ODs and OD incidence rates reported by the case companies are summarised in Tables 5 and 6, aggregated per corresponding year.

**Table 2.** Company CSR reporting status, 2015–2020.

| | | CSR Report Availaility | | | | | | Stated Motivation for Reporting |
|---|---|---|---|---|---|---|---|---|
| | Year | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | |
| Company name | AECI [60] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ GRI G3 Guideline<br>■ SHEQ management systems (site certifications, SHEQ framework)<br>■ Environmental reporting standard |
| | African Oxygen Limited [61] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ SHEQ targets and policy<br>■ Human rights statement |
| | ArcelorMittal South Africa [62] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ ISO 14001 certification<br>■ SHE policy<br>■ ISO 31000<br>■ ISO 22301 |
| | Berry Astrapak [63] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ ISO 14001<br>■ ISO 50001 |
| | Distell [64] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ SDGs<br>■ Companies Act No. 71 of 2008<br>■ Industry social compact |
| | Engen [65] | n/a | n/a | n/a | n/a | n/a | n/a | ■ n/a |
| | Eskom [66] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ SHEQ policy<br>■ UN global compact |
| | Hulamin [67] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ Aluminium Steward Initiative Certification<br>■ SDGs |
| | Lafarge South Africa [68] | n/a | ✓ | n/a | n/a | n/a | n/a | ■ Sustainable development targets<br>■ Compliance with governance, social and environmental requirements and standards |

**Table 2.** *Cont.*

| | CSR Report Availaility | | | | | | Stated Motivation for Reporting |
|---|---|---|---|---|---|---|---|
| **Year** | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** | |
| Metair [69] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ Local and international legislation and frameworks<br>■ Johannesburg Stock Exchange (JSE) listing requirements<br>■ International Integrated Reporting Council (IIRC) Framework<br>■ UN Global Compact<br>■ Seeking future ISO 45001 certification<br>■ ISO 14001<br>■ SHE policy |
| Mondi [70] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ Mondi Action Plan 2030<br>■ SDGs<br>■ Recognition in external corporate ratings and indices |
| Nampak [71] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ Environmental, Social and Corporate Governance rating (JSE Socially Responsible Investing Index)<br>■ ISO 14001<br>■ Legislative compliance and internal standards<br>■ OSHAS 18001 certification |
| Omnia Holdings Limited [72] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ SDGs<br>■ IIRC framework<br>■ GRI standards<br>■ King IV reporting on Corporate Governance for South Africa 2016 (King IV)<br>■ JSE listing requirements<br>■ Companies Act No. 71 of 2008 |
| PetroSA [73] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ Legislative compliance<br>■ HSEQ management plan<br>■ ISO 9001 certification<br>■ Gearing towards ISO 45001 certification by 2022 |

**Table 2.** *Cont.*

| Year | CSR Report Availaility | | | | | | Stated Motivation for Reporting |
|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | |
| PPC [74] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ IIRC framework<br>■ King IV reporting on Corporate Governance for South Africa 2016 (King IV)<br>■ JSE listing requirements<br>■ Companies Act No. 71 of 2008<br>■ GRI standards |
| Sappi [75] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ SDGs<br>■ GRI standards<br>■ External corporate ratings and indices |
| Sasol Limited [76] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ SDGs<br>■ GRI standards<br>■ UN Global Compact Reporting<br>■ Legislative compliance<br>■ SHE policy |
| Sephaku Holdings [77] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ ISO 9001 certification<br>■ Legislative compliance |
| South African Breweries [78] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ UN Global Compact<br>■ SDGs<br>■ GRI standards<br>■ JSE Socially Responsible Investing Index |
| Tongaat Hulett [79] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ■ SDGs<br>■ JSE Socially Responsible Investing Index<br>■ Legislative compliance<br>■ King IV reporting on Corporate Governance for South Africa 2016 (King IV) |

✓—Report available| n/a–country-based CSR report not available| IIRC—International Integrated Reporting Council| ISO—International Standardisation Organisation| JSE—Johannesburg Stock Exchange| SDGs—Sustainable Development Goals| SHE—safety, health, and environment| SHEQ—safety, health, environment, and quality.

**Table 3.** Overview of company social activity reporting in CSR reports, 2015–2020.

| | | CSR Reporting Types | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Specific Occupational Health Reporting | | | | | | Occupational Safety Reporting | | | | | |
| | Year | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| Company name | AECI [80–85] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | African Oxygen Limited [61] | × | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | ArcelorMittal South Africa [86–90] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Berry Astrapak [63] | × | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Distell [91] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Engen [65] | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | Eskom [92–95] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Hulamin [96,97] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Lafarge Sout Africa [68] | n/a | ✓ | n/a | n/a | n/a | n/a | n/a | ✓ | n/a | n/a | n/a | n/a |
| | Metair [69] | × | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Mondi [70] | × | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Nampak [71] | × | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Omnia [98–102] | ✓ | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | PetroSA [103–106] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | PPC [107] | × | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Sappi [75] | × | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Sasol Limited [108–111] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Sephaku [77] | × | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | South African Breweries [78] | × | × | × | × | × | × | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Tongaat Hulett [112–117] | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

✓ aspect reported | × aspect not reported | n/a country-based CSR report not available.

**Table 4.** Compensated ODs in South Africa [118–120].

| | Year | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014/2015 *** | **2016** | **2017** | **2018** | **2019** | **2020 *** |
| Occupational disease | | | | | | | | | | | | | | | | | | | |
| Noise-induced hearing loss (NIHL) | 1465 | 1952 | 2549 | 2724 | 1823 | 3228 | 2644 | 785 | 1123 | - | - | - | - | - | 145 | 279 | 249 | 118 | - |
| Tuberculosis of the lungs (in health care workers) | 211 | 500 | 384 | 384 | 323 | 119 | 69 | 54 | 223 | - | - | - | - | - | 141 | 184 | 257 | 191 | - |
| Occupational diseases caused by chemical agents | 715 | 573 | 736 | 706 | 476 | 609 | 800 | 460 | 349 | - | - | - | - | - | 88 | 96 | 62 | 61 | - |
| Diseases caused by physical agents, excluding noise | - | - | - | - | - | 14 | 10 | 27 | 31 | - | - | - | - | - | - | - | - | - | - |
| Diseases caused by biological agents, excluding TB | - | - | - | 75 | 228 | 275 | 144 | 75 | 63 | - | - | - | - | - | - | - | - | - | - |
| Others | 970 | 1664 | 1349 | 1469 | 972 | 105 | 21 | 12 | 45 | - | - | - | - | - | - | - | - | - | - |
| Total | 3361 | 4689 | 5018 | 5358 | 3822 | 4564 | 3720 | 1443 | 1895 | 1111 | 1475 | 2579 | 2579 | - | 374 | 559 | 568 | 370 | - |

* Information not publicly available.

**Table 5.** Descriptive count of company annual OD incidence rates, 2015–2020.

| Company Name | Annual OD Incidence Rate * | | | | | |
|---|---|---|---|---|---|---|
| | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| AECI [80–85] | 0.01 | 0.02 | 0.03 | 0 | 0.02 | - |
| Arcelormittal South Africa [86–90] | 0.19 | 0.02 | 0.18 | 0.16 | 0.0 | - |
| Sasol Limited [108–111] | - | 0.06 | 0.05 | 0.03 | 0.070 | 0.095 |
| African Oxygen Limited [61] ** | - | - | - | - | - | - |
| Berry Astrapak [63] ** | - | - | - | - | - | - |
| Distell [91] ** | - | - | - | - | - | - |
| Engen [65] ** | - | - | - | - | - | - |
| Eskom [92–95] ** | - | - | - | - | - | - |
| Hulamin [96,97] ** | - | - | - | - | - | - |
| LafargeHolcim Limited ** | - | - | - | - | - | - |
| Metair [69] ** | - | - | - | - | - | - |
| Mondi [70] ** | - | - | - | - | - | - |
| Nampak [71] ** | - | - | - | - | - | - |
| Omnia [98–102] ** | - | - | - | - | - | - |
| PetroSA [103–106] ** | - | - | - | - | - | - |
| PPC [107] ** | - | - | - | - | - | - |
| Sappi [75] ** | - | - | - | - | - | - |
| Sephaku [77]** | - | - | - | - | - | - |
| South African Breweries [78] ** | - | - | - | - | - | - |
| Tongaat Hulett [112–117] ** | - | - | - | - | - | - |

* Annualised rates factoring various metrics | ** None reported.

**Table 6.** Descriptive count of company reported ODs, 2015–2020.

| Company Name | Occupational Disease | Attributable Occupational Health Hazard | Yearly OD Tally | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| AECI [80–85] | Occupational asthma | Fatty acid | - | 1 | 2 | - | - | - |
| | Skin sensitisation | Isothiazolin (biocide) | - | 1 | - | - | - | - |
| | Noise-induced hearing loss (NIHL) | Noise levels >85 dBA | - | - | 1 | - | 2 | 1 |
| Arcelormittal South Africa [86–90] | Noise-induced hearing loss | Noise levels >85 dBA | 8 | 1 | - | - | - | NP |
| Distell [91] | All occupational diseases | - | - | 4 | 6 | 0 | 6 | 1 |
| | Upper-limb disorders | Repetitive actions | 6 | - | - | - | - | - |
| Eskom [92–95] | All Occupational diseases | - | 35 | 14 | 20 [a] | 28 [b] | 38 [b] | 19 [b] |
| | Noise-induced hearing loss | Noise levels >85 dBA | - | - | 15 | 22 | 30 | 15 |
| Hulamin [96,97] | Noise-induced hearing loss | Noise levels >85 dBA | - | - | - | 3 | 3 | NP |
| Omnia [98–101] | All Occupational diseases | - | - | 34 | - | 0 | 0 | 1 |
| | Irritant contact dermatitis | Chemical exposure | - | - | 1 | - | - | |
| | Allergic contact dermatitis | Chemical exposure | - | - | - | - | 0 | 1 |
| PetroSA [103–106] | Noise-induced hearing loss | Noise levels >85 dBA | - | - | 7 | 3 | - | - |
| Sasol Limited [108–111] | Noise-induced hearing loss | Noise levels >85 dBA | 31 | 35 | 21 | 15 | 31 | 35 |
| | Asbestosis | Asbestos fibres | 0 | 1 | 2 | 0 | - | 0 |
| | Mesothelioma | Asbestos fibres | - | - | - | 1 | 0 | 0 |
| | Tuberculosis | Mycobacterium tuberculosis | 37 | 26 | 29 | 34 | 34 | 33 |
| | Pneumoconiosis | Coal dust | 14 | 9 | 9 | 14 | 12 | 7 |
| | Other lung diseases | Hazardous chemical substances | 18 | 12 | - | - | - | 1 |
| | Heat-related disease | Heat exposure | - | NR | 2 | - | - | 2 |
| | Chronic obstructive airway disease (COAD) | Various particulate | - | - | 6 | - | 21 | 16 |
| | Occupational asthma (including allergic sensitisation) | Respiratory sensitisers | - | 12 | 1 | 2 | 1 | 3 |
| | Reactive airway dysfunction syndrome (RADS) | Chemical exposure | - | NR | - | 1 | 4 | 6 |
| | Allergic reaction other than RADS | Chemical exposure | - | NR | 1 | 5 | 1 | 9 |
| | Chronic work-related upper limb disorder (WRULD) | Workplaces factors | - | NR | 1 | 0 | 0 | 16 |
| | Work-related upper limb disorder (WRULD) | Workplace factors | - | NR | 3 | - | 1 | 3 |
| Tongaat Hulett [112–117] | Reversible occupational diseases | - | 12 | 10 | 12 | 7 | 0 | 0 |
| | Noise-induced hearing loss | Noise levels >85 dBA | 0 | 0 | 0 | 0 | 1 | 0 |

[a] NIHL reported to account for 75% of cases | [b] NIHL reported to account for approximately 80% of cases | NR Not reported | NP Not yet published (as of 31 March 2021).

## 4. Results

### *4.1. Company Overall CSR Reporting*

Table 3 shows the qualitative summary of the case companies' CSR reporting from 2015 to 2020 and also provides an overview of the motivators for engaging in CSR reporting. Eighteen of the twenty case companies had country-specific annual CSR reporting. The two case companies with no country-specific annual CSR reporting were headquartered outside South Africa, with no stated country-specific reporting obligations. The stated motivators for voluntary reporting on CSR activities, across the companies broadly, include system certifications, UN commitments, legal compliance with OHS laws and regulatory financial filings, and internal company policies.

### *4.2. Company Occupational Health and Occupational Safety CSR Reporting*

Table 4 shows the qualitative descriptive summary of the case companies' CSR reporting, differentiated into occupational health and occupational safety aspects. Specific occupational health disclosures were the least reported within the enlisted CSR reports compared to occupational safety issues in general, with only nine of the 20 case companies distinctly reporting on occupational health metrics. In this regard, companies are at liberty to choose internal reporting formats and to determine the structure and detail of metrics reported, this in view of absent standardised CSR reporting formats.

### *4.3. National OD Statistics*

Data on compensated OD national statistics from publicly available sources are shown in Table 4. The statistics were found to be fragmented, difficult to locate, and differed structurally, year on year. This, was symptomatic of an absent national OD surveillance system. No publicly available data for the reporting periods of 2014, 2015, and 2020 were located from available reports and/or open sources.

The ODs in Table 4, reported as occupational accidents which include both ODs and injuries, are reported to the Compensation Fund, in line with requirements of Section 24 of the Occupational Health and Safety Act [52], as well as Regulation 8 of the General Administrative Regulations [53]. Broadly, compensated injuries and ODs are regulated through the Compensation of Occupational Injuries and Diseases Act within the South African general industry [54]. Noise-induced hearing loss (NIHL) remains the most prevalent OD in South Africa and accounted for >50% of all compensated ODs between 2002 to 2019, where specified. Occupational diseases attributable to other physical agents excluding noise, hazardous chemical exposures, combined, also represented a significant portion of the compensated accidents. Whereas, ODs attributable to hazardous biological agents including TB and other agents, were the least compensated, combined.

### *4.4. Company CSR Occupational Health Disclosures*

The descriptive counts of ODs and OD prevalence rates from the case companies are shown in Tables 5 and 6. Of the considered case companies, only nine of the 20 companies had distinct reporting on occupational health aspects, with only three specifically reporting OD incidence rates in addition to the descriptive counts of specific ODs, as shown in Table 6. The voluntary nature of CSR reporting places no obligation on the 11 companies that did not report OD and OD prevalence rates.

#### 4.4.1. Occupational Disease Incidence Rate

The reporting of the annual OD incidence rate, shown in Table 5, was the least preferred reporting format, with only three case companies adopting this approach. The formulaic computations for determining annual OD incidence rates requires an aggregation of all reported ODs factoring variables such as the total number of workers, total hours worked amongst others, and differs from company to company, making comparisons of the rates across companies arduous. As an example, one of the case companies uses the U.S. OSHA's classification criteria to calculate its recordable incident rate [63]. Companies use annual

OD incidence rates/metrics as a benchmark for overall occupational health programme performance. The three case companies did not make statements regarding conformance of the published incidence rates to their preset internal performance metrics.

Typical of the three case companies specifically reporting on annual OD incidence rates was voluntary certification to OHS management systems, shown in Table 3, an indicator of the motivation in adopting this specific reporting framework. However, OHS management systems also do not prescribe standardised computations of company performance metrics related to company OHS matters.

#### 4.4.2. Occupational Disease Incidence Rate

Similar to OD incidence rates, specific OD reporting within CSR disclosures is voluntary, inadvertently leading to intercompany reporting format variance. Noise-induced hearing loss, attributable to noise exposure at or above 85 dBA, as shown in Table 6, remains the most reported OD across the nine case companies specifically reporting on this metric, and in South Africa in general, considering the historical fact inferred by statistics shown in Table 2. The OD disclosures resulting from exposure to chemical agents, highlights the wide variety of chemical agents used by industry. Muscular-skeletal disorders, though listed as an OD by the Compensation of Occupational Injuries and Diseases Act [54], were reported by only two of the nine case companies. Nationally, the OD statistics in Table 2 also notably excludes MSD reporting, highlighting the country's need to close this knowledge gap in the areas of diagnosis and reporting standardisation.

## 5. Discussion

### *5.1. National OD Statistics in South Africa*

The reporting of OD statistics in South Africa is inconsistent, with reported data from 2010 to 2013 aggregated to sums, whereas data from 2001 to 2009 were specifically reported to show the contribution of each disease type to the total sum. Furthermore, no publicly available data could be retrieved for the period covering 2014 to 2015 and 2020. The reviewed national OD statistics show that NIHL and diseases caused by chemical exposures are by far the major contributors to worker ill health. Companies in the manufacturing and utilities industries, such as those included in this review, emit noise which is considered the loudest compared to other sectors, according to the Occupational Safety and Health Administration [121]. Workers in these industries are exposed to occupational health hazards such as the emitted noise levels and chemical agents, due to their close proximity to exposure sources, including mechanised equipment [122]. The source industries, wherein these ODs emanate, include the case companies in Table 1. However, the current national OD data excludes musculoskeletal disorders (MSD), health risk of exposure to ergonomic hazards, whose true extent remains largely unknown in South Africa. Without a national OD surveillance system, the extent of specific subindustry contribution to these overall statistics will remain unknown well into the future. This then highlights the pressing need of establishing a national OD surveillance system as part of capacity building efforts in OD prevention [123], as its outputs can be used to quickly pin-point emerging OD trends from specific industries [124].

From another perspective, all ODs, including those reported in Table 2, are preventable. This then points to OD prevalence being a result of neglected unsafe working conditions and a deterioration of implemented exposure control measures [125], including by companies listed in Table 1. With regard to shortcomings in NIHL prevention efforts specifically, the incorrect selection of hearing protection devices, inadequate noise training programmes, and lack of implementing noise engineering controls have been showed as contributory factors in its prevalence from a study conducted at a South African chemical manufacturing company [126–128].

Occupational disease prevalence and impact is an international issue, however, with the International Labour Organisation estimating some 160 million workers to be impacted from work exposures, mainly from developing countries [129]. This protracted OD preva-

lence occurs amidst enacted workplace regulations which give companies guidance on required preventive steps to prevent exposure [52,129,130].

### *5.2. Company CSR Reporting*

The CSR reporting in Table 3, from 2015 to 2020, shows the uptake of voluntary CSR reporting by the case companies. A similar observation was made in a study amongst South African companies by West [130]. The uptake is also an established business practice and relevant for South African companies. However, two of the case companies' country-specific CSR reports, whose parent companies are located outside South Africa, were not available. The CSR reporting is indicative of resources and internal structures that these case companies have invested in implementing CSR activities [131], in this instance OHS programmes. The reporting also highlights the intertwined relationship of company strategies and OHS [132]. In this regard Ruiz-Frutos, Pinos-Mora [133] stated that companies which have subscribed to CSR values tend to have strong OHS management structures, which contribute to achieving these voluntary commitments [134].

In so far as the content of CSR reports is concerned, companies reporting CSR activities provide a narrative on how they identify, analyse, and respond to actual and potential impacts from ongoing operations [135]. Case companies with International Standardisation Organisation's (ISO) 14000 and 45001 voluntary certification report CSR activities as a demonstration of conformance to these systems' communication requirements. In particular, some of the case companies highlight voluntary certification as a motivating factor for making the disclosures. Voluntary CSR reporting gives both internal and external stakeholders an overview of internal initiatives that companies implement to secure legal compliance with labour laws and standards amidst staffing and budget constraints experienced by the labour inspectorate, which limits inspection and enforcement of the labour laws [136,137]. In such an operational environment, CSR reporting affords affected companies corporate self-regulation [138] which, when combined with implemented OHS management systems such as OSHAS 450001, can be used as alternative tools for internal assessment of compliance with regard to managing workplace health hazards. The success of corporate self-regulation in assuring and securing legal compliance can, however, only be measured by comparing changes in data such as illness rates between companies that are implementing and those not implementing the requirements of these voluntary systems [139].

On a perspective of company ownership and CSR reporting motivation, export oriented, public, foreign owned, and listed companies are more likely to disclose CSR performance [140], a result of demands for transparency and disclosure mandates [141,142]. This, in a response to stakeholders, the disclosed information assures that companies perform business in accordance to applicable industry norms [36,143,144]. In developing economies, however, there remains limited convergence on company reporting and CSR due to factors such as unorganised civil society and ineffective regulatory systems [138].

### *5.3. Company Occupational Health and Occupational Safety CSR Reporting*

The case companies' reporting differentiated into occupational health and occupational safety performance aspects in Table 4 shows that occupational safety reporting received more coverage (qualitatively) in eighteen of the 20 case companies, whereas specific occupational health performance was distinctly reported by only nine case companies. The skewed reporting indicating higher coverage of occupational safety performance aspects is a result of historic stakeholder pressure from workers, shareholders, and governments on companies demanding operational transparency on these aspects [145]. That occupational safety received greater coverage than occupational health is in line with study findings made by Koskela [24]. Although OHS aspects are legally regulated and carry mandatory compliance, CSR disclosures, however, often underestimate this fact, leading to less elaborative reporting, argued by Ruiz-Frutos, Pinos-Mora [133].

Case companies reporting ODs that are incorporated into occupational safety statistics, make reading of such disclosures cumbersome regarding occupational health programme performance. On this point, Sheikh Abu Bakar and Ameer [144] argued that companies with poor performance metrics deliberately obfuscate the reporting by choosing highly technical CSR report layouts [144], such as combining both occupational health and occupational safety metrics into a single metric. The data reported in CSR reports should undoubtedly be improved [145].

From another perspective, the benefits that derive from voluntary reporting of OHS aspects, within CSR reports in general, include a greater awareness of risks and opportunities within a company whilst also allowing for sectoral and company performance benchmarking related to applicable regulations; norms and codes; avoidance of bad publicity in regard to environment-related; social and governance failures [8]. For this reason, the reporting of OHS matters in CSR reports presents a value add for companies as it contributes to ongoing CSR efforts [7].

### *5.4. Company Occupational Disease Incidence Reporting*

Compared to descriptive OD counts in Table 6, OD incidence rate reporting in Table 5 was the least preferred reporting format and approach used by the selected case companies. This finding is similar to research findings from a study conducted by Tsalis, Stylianou [12]. Occupational health reporting, in particular, will inadvertently continue to be obscurely reported within CSR disclosures, as some case companies choose to report a single OHS metric that includes OD incidence, this to the detriment of the specialised field of occupational health [12].

From a risk analysis perspective, the reported OD disclosures are an indicator of company inefficiencies related to governance systems for the management of operational risks [146]. These reported ODs pose a reputational, legitimacy, and liability risk to companies [142,146–150]. In a related silicosis and tuberculosis class action lawsuit brought by former mine workers against prominent South African mining houses, the mining companies cited in the litigation suffered reputational damage following adverse judgements criticising their failures to control occupational health hazards [26,27]. The persistent reporting of ODs may also be indicative of the need to optimise company corporate governance systems which may have become homogenous [151]. Exposure to occupational health risks is concerning for workers, employers, and worker representatives [56]. In view of that, it is thus surprising that though OHS management systems address both occupational health and occupational safety, occupational safety continues to be given more prominence compared to occupational health [41]. The major focus on occupational safety is flawed in that, occupational safety only reports on companies' occupational accidents and incidences, argued Koskela [24].

The nine case companies specifically using OD descriptive count and OD incidence rate reporting operate within the chemical sector, utilities, food and beverage manufacturing, and steel industry. It is thus not surprising that the affected case companies, which employ blue-collar workers, have ongoing reported OD prevalence. This, as workplaces with a high proportion of blue-collar workers tend to have a high likelihood of illness due to close proximity to hazards and high exposure levels [152,153]. The case companies in the study specifically reporting OD incidence are export-oriented, publicly owned, and publicly listed companies. Publicly owned companies, in particular, have transparency and disclosure CSR reporting mandates with stakeholders, such as investment houses and governments, in case of government ownership. This finding is similar to findings in other studies [140–142].

From a legal compliance perspective, information contained within CSR reports in regard to OHS informs investors about a companies' state of affairs with regard to legal compliance with OHS legislation [9,48], which should, however, not be equated as compliance determination as this duty is exclusively assigned to labour inspectors [52]. From a monetary perspective, OD prevention failures carry associated economic costs [154],

incurred by exposed workers [123], as well as their employers [155]. Even though the economic impacts of ODs is a subject of continued research [156,157], the economic burden therefrom is shared by society at large [157]. These costs can serve as an indicator of high risk industries for targeted policy intervention [152]. It is against this backdrop that, management commitment to workers' welfare should be well entrenched to achieve improved occupational health performance [34]. In this regard, companies can staff higher management structures with competent, experienced, and knowledgeable members [158], to advise on pertinent issues related to observed OD incidence rates.

From a South African worker perspective, the current beneficial regulation of occupational health hazard calls for workers, through their representatives to increase their efforts of ensuring the ongoing maintenance of worker health rights and employment standards [159].

## 6. Limitations and Future Research

The purposely-selected case companies are not representative of all companies operating within the South African manufacturing and utilities sector, thus the results are not generalisable to excluded companies. There remain limited studies on the analysis of CSR report content [23], especially for OD metrics, which limited the comparative discussions in the paper. Occupational health metric reporting remains inconsistent across companies, further limiting the comparative quality and analysis in the discussion section of the paper.

The case companies reporting OHS metrics as a single statistic in this study normally includes OD counts in such a measure. In such cases, the study could not determine the actual contribution of ODs in such a derived single statistic. The reporting of OHS metrics as a single statistic may be viewed as an attempt by employers at worker "safewashing".

Further research into company OHS disclosures across different sectors is required in South Africa, which provides alternative information sources for the extent of occupational health hazard impact on workers in the absence of a national OD surveillance system. The information derived from studies as this can be used as scientific evidence to prompt legislative amendments in OHS laws, as well to inform targeted inspection and enforcement activities. This study advocates for the disambiguation between occupational health and occupational safety reporting metrics within company voluntary Corporate Social Reporting disclosures.

## 7. Conclusions

In spite of the inconsistent reporting and paucity nature of the national occupational disease statistics from the Compensation Fund, workers from general industry, inclusive of workers from the selected case companies, continue to be exposed to occupational health hazards with subsequent health impacts. In particular, noise-induced hearing loss is highly prevalent amongst the compensated occupational diseases, comparably.

Corporate Social Responsibility reporting amongst the selected South African case companies is prevalent and continuous and is a seeming established business practice. This reporting revealed that occupational safety issues received more coverage compared to the reporting of occupational health issues. Cited literature indicated that pressure groups and prevailing market demands are behind the emphasis and transparency in reporting occupational safety issues.

The scale and scope of specific reporting on occupational health issues within Corporate Social Responsibility reporting varied from company to company. This intercompany variance, wherein some companies report occupational health aspects with or as part of overall occupational health and safety performance, makes reading such reports cumbersome and obfuscates issues.

Similar to the national occupational disease compensation statistics, the case companies' voluntary reports also confirm worker exposure to occupational disease impacts, with noise-induced hearing loss being more prevalent. The reported occupational diseases are indicative of internal company failures in governance systems related to occupational

health hazard and risk control or lack thereof. Regulatory authorities and companies can use occupational disease statistics to direct policy intervention measures as well as resource allocation for worker exposure control. The adoption of voluntary systems by companies and introduction of legislation by governments has seemingly fallen short in preventing the impact of occupational health hazards on workers [160].

Undoubtedly, better risk management strategies are required by the case companies to address worker exposure to relevant occupational health hazards. Although commendable, the reporting of occupational disease prevalence statistics within company disclosures should not be construed as absolute assurance by related stakeholders of legal compliance, as all occupational diseases are preventable. This study highlights the need for greater transparency in the reporting of occupational disease prevalence within company voluntary reporting as an indicator of the health impacts that hazardous operations are having on workers. Notwithstanding differences in reporting frameworks, company voluntary Corporate Social Responsibility disclosures have the potential to provide alternative information on occupational disease prevalence in industry, this against a backdrop of an absent national occupational disease and injury surveillance system in South Africa. However, the current reporting format requires improvements and standardisation in order to reveal a realistic extent of the impact of their operations on workers.

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