

BINDURA UNIVERSITY OF SCIENCE EDUCATION
FACULTY OF SCIENCE AND ENGINEERING
DEPARTMENT OF OPTOMETRY



**REGULATORY COMPLIANCE AND EYE SAFETY: A REVIEW OF INDUSTRIAL
STANDARDS IN MASHONALAND CENTRAL PROVINCE.**

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**THIS RESEARCH PROJECT IS SUBMITTED IN PARTIAL FULFILMENT OF THE
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DEGREE IN OPTOMETRY.**

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DECLARATION

I declare that the research titled **REGULATORY COMPLIANCE AND EYE SAFETY: A REVIEW OF INDUSTRIAL STANDARDS IN MASHONALAND CENTRAL PROVINCE**, hereby submitted to the Bindura University of Science Education in partial fulfilment of the requirements for the Honours degree in Optometry, is my original work. It has not been submitted for any degree at this or any other university. The study was entirely designed and carried out by me, and all sources used have been properly acknowledged.



Tafara Claudias Mutumwa (Student) signature

Date: 23/07/2025

APPROVAL FORM

The undersigned certify that they have read and recommend to Bindura University of Science Education for acceptance, a dissertation entitled “**REGULATORY COMPLIANCE AND EYE SAFETY: A REVIEW OF INDUSTRIAL STANDARDS IN MASHONALAND CENTRAL PROVINCE.**” submitted by Tafara Mutumwa Registration No B213295B in partial fulfilment of the requirements for the degree of Bachelor of Science Honours Degree in Optometry (HBScOpt)

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Date...23/07/2025

DEDICATION

I wholeheartedly dedicate this work to the Mutumwa family. To my parents, my father, Mr. Chokera Mutumwa, and my mother, Mrs. Ireen Mudoti, thank you for your endless love, strength, and support. A special dedication also goes to my elder brother and junior parent, Jackson Mutumwa, whose presence and encouragement have meant so much to me. I also extend this dedication to the Makotore family, with heartfelt gratitude for their role in my journey.

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First and foremost, I thank the Almighty God, whose steadfast love and faithfulness endure forever. His mercy, protection, and wisdom He has granted me have sustained me throughout my studies and daily life. I am truly grateful to the LORD for blessing me with a loving family and supportive parents and friends.

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To my elder brother, Jackson Mutumwa, thank you for your love and support. I sincerely dedicate this Optometry degree to you. I am profoundly grateful and honoured to share this milestone with you.

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ABSTRACT

Background: Occupational eye injuries remain a concern in many industrial settings, despite most industries complying with safety training protocols and personal protective equipment (PPE) wear enforcement. Although these injuries can be prevented, the actual compliance level of employees to prevent such instances is still unclear.

Purpose: To determine regulatory compliance and eye safety in accordance with industrial standards in the Mashonaland Central Province.

Methods: A cross-sectional study approach using questionnaires was conducted at Freda Rebecca Gold Mine in Mashonaland Central Province, Zimbabwe. The questionnaires were used to gather information on workers' use of protective eyewear, employee training experiences, and how safety culture is perceived in the workplace. Data on workers' personal and professional details, including age, sex, educational attainment, work experience, job function, use of eye protection, and a subjective rating of workplace safety, were collected with their consent.

Results: The study comprised 178 participants from the Freda Rebecca Gold Mine. The workforce was predominantly male (91.6%) and ranged in age from 18 to 64 years. About 39.3% (n=70) held a bachelor's degree, 36% (64) had either a diploma or certificate, and 24.7% (n=44) completed high school. Of these, 88.8% (n=158) had received eye safety training, with only 66.9% (n=119) reporting always using eye protection, reflecting a gap between awareness and practice. A total of 80.9% (n=144) were comfortable reporting eye-related injuries, and 80.3% (n=143) reported receiving regular safety feedback from their colleagues or supervisors.

Conclusion: Regardless of work experience or educational level, workplace safety compliance is still an issue, indicating a significant gap between knowledge and its consistent implementation. There is still a need to close the gap between knowledge and knowledge implementation.

INTRODUCTION

1.0 INTRODUCTION

This chapter outlines the analysis of ocular safety and regulatory compliance within the context of industry standards in the Mashonaland Central Province. It explains the aim and objectives of study, describes the researcher's motivations and the reasons for his decision to conduct this investigation. It demonstrates the study's significance for the optometry field and the industry at large.

1.1 BACKGROUND OF STUDY

Regulatory compliance refers to adherence to applicable laws, policies, procedures, and requirements governing an organisation's functions. The relationship between occupational safety and regulatory compliance has grown more important in today's industrial environment, especially in fields where ocular safety is crucial. Workers can avoid the majority of eye injuries by wearing protective eyewear (Mohan et al., 2024). Also, certain standards have been set in a number of industries like manufacturing, construction, healthcare, and laboratories to reduce these dangers.

One of the most susceptible areas of the human body is the eye, particularly in settings where exposure to dangerous substances, bright light, or flying debris is common. The majority of occupational eye injuries are caused by tiny particles or foreign objects entering the eye and causing abrasions (Atuanya & Onaghise, 2024), such injuries may penetrate the eye, resulting in permanent vision impairment. As an individual health issue, work-related ocular trauma is a leading cause of blindness, often leading to serious financial hardship for both the worker and their dependents (Ho et al., 2007). Therefore, maintaining eye safety is an important part of workplace safety guidelines along with an issue of personal protection.

Most industrial eye injuries can be prevented provided visual safety procedures are followed at work and the proper eye protection is used. However, occupational eye injuries can cause irreversible damage or even blindness. But visual safety in the workplace goes beyond preventing accidents. Pre-placement and recurring employee vision assessments (screenings, exams, and surveys) should be carried out to guarantee the minimal degree of ocular efficiency

required to complete visual tasks, taking into consideration the particular job needs.(Kovin S Naidoo et al., 2011).

Having a solid understanding of health is always linked to positive health behaviours and results, which can encourage full compliance with wearing personal protective equipment to prevent injuries in workplaces. Hence, acquiring knowledge about the factors linked to good eye health leads to advancements in community eye care (Xulu-Kasaba et al., 2021).

1.2 PROBLEM STATEMENT

Despite comparable studies being done in Africa and elsewhere, there hasn't been any research of this kind done in Zimbabwe, Mashonaland Central province to be exact. Despite the presence of occupational safety regulations in Zimbabwe, the extent of compliance with eye safety measures in industries within Mashonaland Central province remains unclear. By evaluating current practices, and attempting to reduce noncompliance and ignorance with eye safety measures, this study will highlight some gaps in regulatory compliance and ocular safety in industries and strive to reduce the number of eye injuries. There is still much to be done in enhancing the work environment and strengthening safety education among workers (Wong, 1994).

Consequently, it is necessary to identify the common barriers that keep these standards from being adhered to in various industrial settings. By evaluating current practices, and attempting to reduce noncompliance and ignorance with eye safety measures, this study will highlight some gaps in regulatory compliance and ocular safety in industries and strive to reduce the number of eye injuries. Modernising equipment and respecting workplace regulations (Kyriakaki et al., 2021), are tasks that deserve continuous attention. Analyse how well-received eye safety training programmes and resources are now, as well as strategies for enhancing occupational eye safety protocols and legal compliance in light of emerging technologies and the risks they bring.

1.3 AIM OF STUDY

To determine regulatory compliance and eye safety in accordance with industrial standards in Mashonaland Central province.

1.4 OBJECTIVES OF STUDY

- To assess common compliance barriers and identify the factors influencing protective measure adherence related to eye safety.
- To evaluate how effective safety protocols and personal protective equipment are in minimising the occurrence and severity of occupational eye injuries.
- To investigate relationship between workplace ocular injury causes and demographics.

1.5 SIGNIFICANCE OF STUDY

The research will evaluate ocular safety and regulatory compliance in accordance with industry norms. Since no such study has been conducted in Mashonaland Central, this will be a significant step that can be used to determine the common obstacles that prevent industrial standards pertaining to ocular safety from being followed in various industrial settings, which can result in ocular injuries or challenges in general.

Additionally, this study is being conducted to partially fulfil the prerequisites for the Bindura University of Science Education Bachelor of Honours in Optometry degree. This study aims to offer important insights into the existing ocular safety conditions in Mashonaland Central Province, which can guide the development of focused strategies to enhance workplace eye health and reduce the occurrence of occupational eye.

LITERATURE REVIEW

1.0 INTRODUCTION

The chapter explored other researchers' analysis of ocular safety and regulatory compliance in accordance with industry standards. It synthesises global, American, African, and Zimbabwean researches on the topic.

1.1 GLOBAL VIEW

The eyes are still among the organs most frequently injured in occupational accidents (Susilo Joko et al., n.d.). The ILO (International Labour Organisation) and the IAPB (International Agency for the Prevention of Blindness) estimated that 13 million people worldwide suffer from job-related vision impairment. Occupational eye injuries represent a significant public health concern, often leading to vision impairment, reduced productivity, income loss particularly among vulnerable populations and increased risk of workplace litigation (De Silva et al., 2022). The global challenge of work-related eye injuries necessitates strict regulatory enforcement and proactive preventive measures. Ensuring the availability and proper use of protective eyewear in various industries is essential to mitigate eye injuries, preserve productivity, and prevent economic hardships. Protecting workers and minimising the long-term effects of these hazards requires a high priority for worker safety. These figures do, however, give a helpful summary, and the studies frequently don't go into great detail about how socioeconomic status or local safety regulations may influence these data.

As a common and preventable occupational hazard, Occupational Eye Injuries (OEIs) account for an estimated 3.3% to 6.1% of all workplace compensation claims globally, underscoring the need for improved safety measures (Riccò et al., 2020). All occupational eye injuries (OEI) that were reported from 2000 to the year 2013 in the Autonomous Province of Trento, Italy, were examined in a retrospective analysis. The information, which came from an institutional repository, covered settings, injury features, and demographics. OEI made up 5,065 (3.6%) of the 141,139 work-related injuries collected. Males made up the vast majority of cases (91.9%), with an average age of 38.4 ± 11.7 years, and the majority were of Italian origin (77.2%). While the industrial sector accounted for 70.7% of OEI, agricultural workers had higher incidence rates (6.04 vs. 3.85 per 1,000 workers annually). Additionally, older workers (45.6 ± 13.3 vs. 37.1 ± 11.0 years) were more likely to experience OEI, and it was more commonly linked to

lacerations (OR 2.386, 95% CI 1.877–3.033) and contusions (OR 2.042, 95% CI 1.602–2.602), whereas exposure to chemicals, gases, and vapours was less common (OR 0.478, 95% CI 0.279–0.817). The authors came to the conclusion that, despite being largely preventable, OEIs still occur frequently in both developing and highly developed nations, with notable variations in annual rates and injury settings. This highlights the necessity of focused interventions to improve preventive measures. Although this study's retrospective analysis yielded insightful information, its applicability to other areas may have been limited by its concentration on a particular province.

Eye injuries constitute approximately 10% of all work-related injuries and are largely preventable through the proper use of safety eyewear. This cost-effective intervention has the potential to save up to \$59 million annually in both domestic and occupational settings across Australia (Fong & Taouk, 1995). This demonstrated how crucial it is to follow regulations and practice eye safety at work in order to lessen the financial burden caused by occupational eye injuries, the majority of which are preventable. Ocular injuries in industrial settings can be reduced by implementing global safety protocols and adhering to regulations, which include enforcing the use of personal protective equipment and implementing work safety education programmes.

Enforcing regulatory compliance and requiring the use of protective gear is essential in reducing eye injuries because, according to a study (Almoosa et al., 2017), assessing the role of eye protection in occupational injuries, the majority of incidents were caused by neglect and failure to wear safety eyewear. This suggests that injuries continue to occur when people disregard proper safety practices even with targeted education and preventive measures. However, the study's design failed to fully account for organisational or environmental factors that could have contributed to the negligence and failure to wear safety eyewear.

1.2 AMERICA

The OSHA (Occupational Safety and Health Administration) is the chief enforcement body overseeing comprehensive workplace safety regulations in the United States. Employers are required by OSHA to supply sufficient eye protection in order to guarantee adherence to safety regulations. However, according to advocacy literature, 90% of workplace eye injuries are avoidable, with an estimated 20,000 injuries occurring annually and costing \$300 million (Dang, 2014). According to these data, gaps that contribute to occupational eye injuries persist

despite stringent regulatory enforcement, highlighting the necessity of focused intervention programmes that precisely address these deficiencies. In addition, the literature urges a more thorough examination of the reasons why current safety protocols are not consistently adopted across industries, as the high rate of injuries, even under strict regulations, suggests that factors like insufficient compliance monitoring and differences in safety culture may undermine regulatory effectiveness.

1.3 AFRICA

(Abu et al., 2016) carried out a descriptive cross-sectional investigation to assess eye health and safety within mechanics in Ghana, the Cape Coast Metropolis to be specific. The study featured 500 mechanics selected using multistage sampling, with 433 participants investigated, resulting in an 87% response rate. Among these, 408 (94.2%) were male and 25 (5.8%) were female. 2.1% of people had vision impairment, which is defined as having a presenting visual acuity (VA) of less than 6/18. The large percentage of workers (72.5%) who did not wear eye protection gear may be related to the 171 (39.5%) mechanics who reported having eye injuries. Pterygia was a common anterior segment disorder, whereas retinochoroidal lesions and glaucoma suspects were common posterior segment conditions. (Abu et al., 2016) came to the conclusion that eye injuries were frequent among mechanics, primarily as a result of their poor usage of eye protection, and they underlined the importance of eye safety in the Cape Coast Metropolis' public health agenda. Furthermore, while the study identifies prevalent ocular disorders such as pterygia and retinochoroidal lesions, it does not address the larger socioeconomic or cultural variables that contribute to poor PPE usage.

(Ezisi, 2019) used a questionnaire-based cross-sectional ophthalmic survey to assess the prevalence, types, and risk factors of work-related eye injuries among stone quarry and stone processing workers in Abakaliki, southeastern Nigeria. Using descriptive and comparative statistics (statistical significance set at $P < 0.05$), the study gathered information on sociodemographic traits, job specifics, clinical ophthalmic symptoms, and histories of prior work-related eye injuries. The sample consisted of 384 participants, with an average age of 32 years (± 11.8 SD, ranging from 14 to 68 years), consisting of 158 males and 226 females. Two workers (0.52%) suffered uniocular vision loss as a result of industrial accidents, and 140 (36.5%) of these workers reported having experienced an eye injury at work in the past. Blunt ocular trauma was the most common injury, occurring in 106 cases (58.2%). Remarkably, 379, or 98.7%, of the participants did not wear eye protection. The following were risk factors for

these injuries: the time of day, with the highest incidence of injuries occurring in the afternoon (99 cases at quarry sites and 103 at stone processing sites); unprotected eye exposure, as reported by 85 workers (46.2%) at quarry sites and 117 workers (62.2%) at stone processing plants. Injuries were also more common among nontechnical workers, those working in the afternoon, younger workers, males at stone processing sites, and those without wearing personal protection eye devices (PPED). The author concluded that, to increase eye safety and reduce work-related eye injuries, adjustments to the workplace and the provision of standard, comfortable eye protection devices should be required, as well as thorough health education that emphasises these risk factors.

1.4 ZIMBABWE

Despite the high incidence of occupational eye injuries in developing countries, there is very few data on eye safety and regulatory compliance in Zimbabwe. This gap underscores the need for further studies to evaluate the efficacy of current regulatory frameworks, the accessibility of protective equipment, and the general safety culture in Zimbabwean workplaces.

METHODOLOGY

1.0 INTRODUCTION

Details in this chapter included methods employed in the study on Regulatory Compliance and Eye Safety: A Review of Industrial Standards in Mashonaland Central Province. The study population, sample size, research design, and environment are all covered, along with the tools and instruments used for data collection, the strategy for obtaining data, and the methods for managing and analysing data. It also covers the ethical issues that influenced the course of the investigation.

1.1 SETTING

The study took place at Freda Rebecca Gold Mine in Bindura. It was selected because it is one of Zimbabwe's biggest gold producers and a significant industrial mine in the Mashonaland Central province.

1.2 STUDY DESIGN

This study adopted a cross-sectional design to gather information at a certain point in time, which is economical and time-efficient, enabling the methodical recording of current circumstances and the detection of discrepancies between accepted industry norms and real-world behaviours throughout the targeted places.

1.3 STUDY PERIOD

The research was carried out between November 2024 and June 2025.

1.4 STUDY POPULATION

All employees at the Freda Rebecca Gold Mine who were present during the point in time of this study. Participants were chosen using a straight forward random sampling procedure, ensuring that eligible employees experienced the same opportunity of being chosen resulting in a decrease of selection bias and also improving researches population representativeness.

1.5 INCLUSION CRITERIA

All workers who agreed to take part in the research.

1.6 EXCLUSION CRITERIA

Visitors or unemployed individuals at the mine during the research period. Workers who declined to take part in the study and those who weren't present when the data was being collected.

1.7 MATERIALS AND METHOD

The necessary data was collected through a survey comprising both closed and open-ended questions. Questions on the demographics of the employees, information about their jobs, information about eye safety, information about their health, and information about safety culture.

1.8 ETHICAL GUIDELINES

Ethical clearance for this research was obtained from the Institutional Review Board of Bindura University of Science Education. Confidentiality, privacy, and anonymity were preserved throughout the study. None of the employees' names were ever released.

RESULTS

1.0 INTRODUCTION

This chapter outlines the outcomes of the gathered data; the findings are based on a structured questionnaire. Information gathered was on demographics, occupational roles, eye protection practices, training, health experiences and workplace safety culture gathered from the study participants.

1.1 DEMOGRAPHICS

The study comprised of 178 industrial employees at Freda Rebecca Gold Mine.

1.1.1 GENDER

Out of the 178 participants to this research from the organisation, majority were male 163 (91.6%) and females account for 15 (8.4%) of the participants. This gap reflected a male dominated nature of mining industry.

Table 1 Gender distribution

Gender	Frequency
Male	163
Female	15

1.1.2 AGE DISTRIBUTION

Participants ranged from 18 up to 64 years of age, having a mean age of approximately 42.5 years (SD = 12.95). the median age was 40 years. The age distribution is broken down as follows:

Table 2 Age distribution

Age Group	Frequency	Percentage
18–24	9	5.1
25–34	48	27.0

35–44	46	25.8
45–54	35	19.7
55–64	34	19.1

This indicates that most workers were in the prime working-age group (25–44 years), suggesting a relatively young and energetic workforce.

1.1.3 MARITAL STATUS

About 77.5% (n=138) participants were married, followed by 19.7% (n=35) singles and a small portion of 2.8% (n=5) widows. This indicates a workforce with relatively stable family structure.

Table 3 Marital status

Marital Status	Frequency
Married	138
Single	35
Widowed	5

1.1.4 YEARS OF SERVICE

The average duration of employment at the mine was approximately 13.0 years (SD = 10.03), with a range from 1 to 42 years. This indicates a mix of both new hires and highly experienced personnel. The service length distribution is summarised below:

Table 4 Years of service

Years of Service	Frequency
0–4 years	41
5–9 years	44

10–14 years	28
15–19 years	23
20–29 years	25

This pattern shows a substantial retention rate, with over half of the workforce having served 10 years or more.

1.2 EDUCATIONAL BACKGROUND

About 39.3% (n=70) held a bachelor's degree, 36% (64) had either a diploma or certificate with 24.7% (n=44) completing high school only. Through this mix in educational levels an insight into the workforce overall training and knowledge could be gained.

Table 5 Educational background

Education Level	Frequency
Bachelor's	70
Diploma/Certificate	64
High School	44

1.3 USE OF EYE PROTECTION

The majority of participants 66.9% (n=119) said they always used eye protection, indicating that many workers take eye safety seriously, with 9% (n=16) reported using it frequently, while 20.2% (n=36) stated they only used it occasionally. Just 3.9% (n=7) of respondents acknowledged that they hardly ever wore eye protection. Even though the majority of workers follow safety procedures, some may still be exposing themselves to possible eye risks.

Table 6 Use of eye protection

Responses	Frequency
Always	119

Sometimes	36
Often	16
Rarely	7

1.4 TRAINING AND SAFETY AWARENESS

It is obvious that training is crucial to promoting eye safety at work. It is evident that its being taken serious with majority of the workforce about 88.8% (n=158) said they had received formal training on eye safety and 11.2% (n=20) said they have not. The fact that 93.8% (n=167) respondents believed that eye safety is actually handled seriously at work is even more reassuring. While these numbers show that the message is getting through, they also gently remind us that safety isn't a one-time effort, it needs constant encouragement and a workplace culture that keeps eye protection top of mind every day.

1.5 HEALTH HISTORY

A few employees disclosed private or health-related concerns that would impact their eye health. Of the 178 participants, 19 (10.7%) had pre-existing medical illnesses that could affect their eyesight, and 24 (13.5%) reported having dealt with eye issues in the past. Five more individuals (2.8%) were using medications that could affect their eye health. These findings emphasise the value of routine eye exams and tailored safety assistance, particularly for individuals who may be more vulnerable at work.

1.6 SAFETY CULTURE AND COMMUNICATION

1.6.1 PERCEPTIONS OF SAFETY CULTURE

Participants were asked to score the safety culture at their place of employment on a scale of 1 (poor) to 5 (excellent). The majority expressed positive feelings, characterising it as good or excellent (86.5%; n = 154). But a smaller group gave it a low rating roughly 13.4% (n=24). This implies that although the vast majority are comfortable with the safety regulations at work, some people are nevertheless worried and might not feel completely secure there.

1.6.2 COMFORT AND FEEDBACK

Most participants about 80.9% (n=144) said yes about feeling comfortable reporting eye related incidents or near misses, and 80.3% (n=143) said yes about receiving regular feedbacks from their supervisors or colleagues. This shows a positive and open safety culture where communication is encouraged, making it easier to learn from mistakes and continuously improve workplace safety.

DISCUSSION

1.0 INTRODUCTION

This study looked into how workers at industrial level in Mashonaland Central show compliance eye safety on the job. This discussion chapter was made based on the results focused on what workers know, how they put that knowledge into practice and behavioural challenges faced. The findings gave a view on the real-life factors both personal and workplace related that push on how eye safety is managed in a demanding and often hazardous industrial environment.

1.1 DEMOGRAPHICS

91.6% of the participants were male employees, with most employees aged between 30 and 49 and most of them (76.7%) being married. This shows most patterns seen in the industrial environments worldwide, where the physically demanding nature of the work tends to draw more men. Despite older workers bringing a mature sense of hazard awareness at workplaces, this doesn't always ensure they follow safety procedures consistently and also younger workers in their 20s might also show strong awareness influenced mostly by recent training and educational programmes. However, younger workers are a risk group for occupational injuries (Salminen, 2004) despite their knowledge, they may still lack the hands-on experience needed to fully grasp why consistent use of protective gear matters in the long run.

1.2 SAFETY AWARENESS AND EDUCATION

40% of the workers from the study who participated had earned a university degree, with 36% having obtained a diploma or equivalent while many others had only finished secondary school. There is a higher potential for workers with more education to carefully follow safety procedures but that doesn't rule out the fact that they might be negligent in following safety procedures. However, due to the fact that more educated workers seem to better understand why protective wear matters giving more affinity to wear eye protection regularly.

1.3 WORK EXPERIENCE

Approximately 60% of the workers had five years' work experience, and with such time and experience on the job, many had built up a strong sense of how to be safe in a working environment, placing their reliance mostly on experience. But that same familiarity might work

against them, with workers not always wearing their safety gear due to relaxed attitudes and reduced attention to formal procedures. More years in the same environment may promote too much comfortability and negligence.

1.4 TRAINING AND EYE PROTECTION PRACTICES

The implementation of health education and safety training programmes is critical to minimising the risk of eye injuries in the workplace (Yu et al., 2004). Over 80% of the workers received training on eye safety, showing a more positive safety culture, hence more likely better the OHSM (occupational health and safety management) practices (Nordlöf et al., 2017), but when it comes to practice and behaviour, only 66%, about two-thirds, reported always wearing eye protection. That is a clear sign showing a gap between knowledge and putting it into practice. This shows a need for reminders or a way to enforce such beneficial habits of wearing protective gear always to be implemented consistently or maybe support that makes safety feel like part of the job and not just a rule to follow. Safety training is important, but on its own it cannot fix everything.

1.5 OCULAR HEALTH AND PREVENTIVE MEASURES

Only a handful of workers about 13.5% shared that they had some kind of eye injury or vision problems in the past. While that number is not high, it does not mean the risk is small. In an industrial place like a mine, occupational ocular hazards are part of the daily reality, damage might not always be immediate but sometimes it builds up slowly, without anyone noticing. That is why regular check-ups are important, especially for workers dealing with other health conditions or using medication that might affect their eyesight. Therefore better-fitting or more comfortable eye protection might make a real difference in getting more workers to wear protective gear more frequently with consistence.

1.6 STUDY LIMITATIONS

Limitations in the study included information relying solely on participants to honestly report their own behaviours and experiences. This might give biased results, with some workers not saying exactly they do but slightly exaggerating the information to fit how well they follow safety rules, just to sound more responsible or to avoid judgement. Also, the study was only in Mashonaland Central Province, hence it might not reflect the case in the whole of Zimbabwe.

CONCLUSION

1.0 CONCLUSION

According to the study, it is clear that workers in industrial environments are trained and are also aware of occupational ocular safety protocols, but despite high awareness and training levels, a significant gap remains between knowing what is right and actually implementing it consistently. A clear view of a strong occupational safety culture is there but not really flawless, with some workers being over comfortable with safety compliance. This shows that effective occupational safety goes far beyond equipment, experience, and policy but is also centred around behaviour, habits, and working environment that make safety a priority.

1.1 RECOMMENDATIONS

To improve compliance and protect workers' vision more effectively, several steps are recommended. Offering more regular ocular health check-ups should be implemented, especially to those employees with underlying conditions, as this might help identify issues early and support a more proactive safety culture. Safety training should not only be done once or be a one-time thing but be done more often as a way to promote safety compliance. Also, there is need to adopt anonymous reporting procedures and regular safety audits, as this will assist in shaping future safety policies.

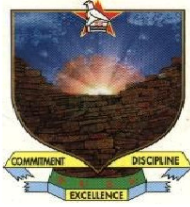
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LIST OF APPENDICES

APPENDIX I: REQUEST LETTER FOR DATA COLLECTION



BINDURA UNIVERSITY OF SCIENCE EDUCATION

P. Bag 1020 Bindura,
Zimbabwe

Tel: +263 788443782

**FACULTY OF SCIENCE AND ENGINEERING
DEPARTMENT OF OPTOMETRY**

Date 16 April 2025

Dear Sir/Madam

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH PROJECT AT YOUR COMPANY

I am writing to respectfully request permission to collect educational data from your organization for my undergraduate research project in Optometry at Bindura University of Science Education. It is a requirement that all university final year students must carry out research projects in partial fulfilment of the degree's requirements. I am hereby kindly requesting for access to your company, where I intend to conduct my research project. The title of my study is, **Regulatory Compliance and Eye Safety: A Review of Industrial Standards in Mashonaland Central Province.**

The project is focused on investigating the effectiveness of safety protocols and personal protective equipment in reducing the incidence and severity of occupational eye injuries, and your company's operations present a unique opportunity to gain valuable insights. Data will be collected primarily through questionnaire. I assure you that all information collected will be treated with the utmost confidentiality and used solely for academic purposes. I am committed to adhering to all ethical guidelines and regulations regarding data collection and usage.

Thank you for considering my request.

Yours sincerely

Tafara Claudias Mutumwa
Mobile +263-785615313
Email: tafaramutumwa@gmail.com

Optometry Chairperson and Supervisor

Dr Claudio N Mtuwa (OD).
Mobile +263-772680401
Email claude2see@yahoo.com

APPENDIX II: INFORMED CONSENT FOR DATA COLLECTION

INFORMED CONSENT FORM

Title of the study

Regulatory Compliance and Eye Safety: A Review of Industrial Standards in Mashonaland Central Province.

Primary researcher

Tafara Claudias Mutumwa

Department of Optometry, Bindura University of Science Education

Mobile: +263-785615313 Email: tafaramutumwa@gmail.com

Purpose of study:

The purpose of this study is to examine ocular safety and regulatory compliance in Mashonaland Central province in accordance with industry standards. This study aims to uncover common compliance challenges and factors impacting the adherence to eye safety preventative measures. In order to improve occupational health practices in the industrial sector, safety procedures and personal protective equipment are also beneficial in lowering the frequency and severity of occupational eye injuries.

Procedures:

To address this research question, I invite you to participate in this research project by completing a questionnaire focused on the availability, awareness of regulatory compliance, and eye safety, with an emphasis on industrial standards in Mashonaland province. Participation is voluntary; if you prefer not to answer any of the questions, you may skip them and proceed to the next one. The questionnaire is self-administered, and guidance will be provided to ensure clarity. Please note that all information you provide will be kept confidential and will only be accessible to Mr. Claudio Mtuwa, the supervisor, and I Mr. Tafara Mutumwa, the researcher.

Voluntary contribution

Your involvement in this research is completely voluntary. Without facing any repercussions, you are free to decline participation or to leave the study at any moment. All of your provided data will be removed from the study analysis if you decide to withdraw.

Risks and Discomforts:

There will be no risk and/ or discomfort associated with participating in this study

Benefits:

There is no financial remuneration for this participation.

Confidentiality:

Your name will not appear in any published study reports, and the confidentiality and anonymity of study participants will be maintained throughout the investigation. All information gathered will be kept under strict confidentiality.

Contact information

If you have any questions or concerns regarding your participation in this study or require additional information, please contact:

Principal Investigator:

Name: Tafara Mutumwa

Email: tafaramutumwa@gmail.com

Phone: +263-785615313

Consent

By granting access and/or data for this study, you consent to participate in this research under the conditions specified here and attest that you have read and comprehended the information above.

☐ I agree to participate in this research study.

Volunteer's Signature: Date.....

By signing this, I attest that the person above was fully informed of the study's objectives, potential advantages, and potential hazards.

Researcher's Signature: Date.....

APPENDIX III: DATA COLLECTION QUESTIONNAIRE

REGULATORY COMPLIANCE AND EYE SAFETY: A REVIEW OF INDUSTRIAL STANDARDS IN MASHONALAND CENTRAL PROVINCE.

QUESTIONNAIRE

Section A: Demographic Information

1. Age
2. Sex ☐ Male ☐ Female
3. Marital status ☐ Single ☐ Married ☐ Divorced ☐ Widowed
4. Highest level of education
 - ☐ High school or equivalent
 - ☐ Diploma or certificate
 - ☐ Bachelor's degree
 - ☐ Master's degree
 - ☐ Doctoral degree
5. Job title
6. What department do you work in.....?
7. How many years have you been working.....?
8. What are your primary job responsibilities? (Check all that apply)
 - ☐ Operating heavy machinery
 - ☐ Maintenance and repairs
 - ☐ Supervision and management
9. Do you work underground, on the surface, or in an office?
 - ☐ Underground
 - ☐ Surface
 - ☐ Office
10. Do you wear eye protection (e.g., safety glasses, goggles) while working?
 - ☐ Yes ☐ No
 - If yes, what type of eye protection do you use?.....
 - If no, (**WHY**).....
11. How often do you wear eye protection while working?
 - ☐ Always ☐ Most of the time ☐ Some of the time ☐ Rarely
12. Have you received training on eye safety procedures? ☐ Yes ☐ No
13. Do you think eye safety is a priority in your workplace? ☐ Yes ☐ No ☐ Maybe
14. Have you experienced any eye-related health issues (e.g., blurred vision, eye strain)?

- ☐ Yes ☐ No
15. Do you have any pre-existing medical conditions that may affect your eye health?
☐ Yes ☐ No
16. Are you taking any medications that may affect your eye health?
☐ Yes ☐ No ☐ Maybe
17. How would you rate the safety culture in your workplace?
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
18. Do you feel comfortable reporting safety incidents or near-misses?
☐ Yes ☐ No ☐ Maybe
19. Do you receive regular safety feedback from your supervisors or colleagues?
☐ Yes ☐ No
20. Is there anything else you'd like to share about eye safety or regulatory compliance in your workplace?
.....
.....
.....
.....
.....

Thank you for taking the time to complete this questionnaire! Your input is valuable to us.



ONLINE (<https://forms.gle/wPMa2TSwr7BXffeC8>)