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BRIEF COMMUNICATION

Visual health in the workplace: evaluation of corporate responsibility and its impact on productivity

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ABSTRACT

Introduction: employer responsibility in workers' visual health involves the duty to protect employees from risks inherent to their occupational activity, whether professional diseases or work-related accidents affecting vision.
Objective: to characterize employer responsibility in the visual health of workers.
Methods: a descriptive and cross-sectional study was conducted in 2025 with 30 employees from Universidad Uniandes Quevedo, Quito, Ecuador. Data were collected through a questionnaire designed by the authors, which assessed employer responsibility regarding workers' visual health.
Results: 90 % of participants perceived institutional concern for their visual health, although 40 % reported ocular irritation and 23,3 % visual fatigue. Ocular dryness affected 13,3 %, while blurred vision and photosensitivity were present in 10 % each. Regarding ergonomics, 66,6 % expressed dissatisfaction with their workstation. Additionally, 80 % indicated not having received training on visual health prevention in the workplace. These findings reveal a discrepancy between perceived corporate responsibility and actual preventive and ergonomic conditions.
Conclusions: The study identified ocular irritation and visual fatigue as the most common pathologies among workers, highlighting the need for preventive interventions. High dissatisfaction with workstation ergonomics emerges as a critical area requiring immediate attention.

Keywords: Working Conditions; Ergonomics; Work Performance; Eye Health.

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INTRODUCTION

Employer responsibility for workers' visual health implies a duty to protect employees from risks inherent to their occupational activities, whether occupational diseases or work-related accidents affecting vision. Fulfilling this responsibility requires employers to anticipate and prevent occupational hazards; promoting employee well-being and care contributes to creating a safe, healthy, and productive work environment regarding ocular health.[1]

Thus, compliance with occupational safety and health regulations is essential. Employer negligence or lack of oversight regarding this responsibility may lead to visual problems for workers and potential workplace hazards, potentially resulting in sanctions by labor authorities. Recent labor jurisprudence increasingly holds employers accountable for work-related accidents or occupational diseases. Employers can benefit from reduced vision-related accidents and illnesses, increased productivity, and enhanced employee well-being.[2]

Most people spend approximately six to eight hours daily using a computer. While some workers already engaged in remote work, 2020 saw a global proliferation of such arrangements due to social isolation measures. The post-pandemic era has normalized remote work across industrial and other sectors, where excessive computer use leads to computer vision syndrome. Ocular symptoms may progress to serious visual health issues, including potential vision loss.[3]

Occupational hazards remain a global problem. According to the latest data from the International Labour Organization (ILO), nearly 3 million people worldwide die annually from work-related accidents and diseases, and approximately 395 million non-fatal injuries occur in the workplace—many leading to absenteeism, disability, and lost productivity. Challenges are also significant in Ecuador.[2,3]

In 2023, Ecuador's Social Security Institute recorded 20,597 occupational accidents, of which 50,6 % occurred at the usual workplace and 31,9 % on roads. Sectors with the highest accident rates include manufacturing, commerce, agriculture and livestock, public administration, and social and health services.[4]

Currently, much of our daily activity occurs through digital devices. Both professional and academic responsibilities require prolonged screen exposure. Excessive technology use can cause injuries that do not manifest immediately but develop gradually due to improper use and insufficient rest. Television screens emit more radiation than computer monitors.[5] Given these considerations, this study was conducted to characterize employer responsibility for workers' visual health.

METHODS

An observational, descriptive, cross-sectional study was conducted. This design was selected because it allowed characterization of corporate responsibility for workers' visual health at a specific point in time, without direct intervention in working conditions.

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The research was carried out at the Autonomous Regional University of the Andes (Uniandes), Quevedo campus, Ecuador, during 2025. The population consisted of administrative and teaching staff.

- Inclusion criteria: Workers with active contracts who voluntarily agreed to participate.
- Exclusion criteria: Workers with prior ophthalmological conditions or incomplete questionnaires.

The final sample comprised 30 participants, selected via non-probabilistic convenience sampling.

Procedures and techniques
Data were collected using a structured questionnaire developed by the authors and administered in person. Direct observation and documentary analysis complemented the data collection. Variables included: workers' visual health, employer responsibility, ophthalmological pathologies, workplace ergonomics, and visual health training.

Statistical analysis
Descriptive statistics were applied, using absolute and relative frequencies and percentages to summarize the data. An academic-use digital statistical package was employed. Incomplete data were excluded, and quality controls were implemented during data entry to minimize bias. Results were presented in frequency and percentage distribution tables, processed using an educational statistical package for epidemiological research.

Ethical considerations
The study was approved by the Ethics Committee of the Autonomous Regional University of the Andes. All participants provided informed consent before completing the questionnaire. Confidentiality and participant anonymity were guaranteed. The research adhered to the principles of the Declaration of Helsinki and applicable national ethical standards.

RESULTS

Table 1 shows that 80 % of workers "strongly agreed" that their employer cares about their visual health, while only 3,33 % "strongly disagreed," indicating minimal perception of employer neglect.

Table 1. Workers' perception of employer concern for visual health.

Perception	No.	%
Strongly disagree	1	3,33
Disagree	1	3,33
Neutral	1	3,33
Agree	3	10
Strongly agree	24	80

Table 2 reveals that 40 % of workers experienced ocular irritation. Additionally, 23,3 % reported "visual fatigue," 13,3 % "dry eyes," and 10 % each reported "photosensitivity" and "blurred vision." Only 3,3 % noted "ocular strain."

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Table 2. Ophthalmological symptoms reported by workers at the end of the workday.

Symptom	No.	%
Visual fatigue	7	23,3
Dry eyes	4	13,3
Ocular strain	1	3,3
Photosensitivity	3	10
Blurred vision	3	10
Ocular irritation	12	40

Table 3 shows that 66,6 % of workers were dissatisfied with their workstation ergonomics ("strongly disagree" or "disagree"), while only 13,3 % were satisfied ("strongly agree").

Table 3. Worker satisfaction with workstation ergonomics.

Satisfaction level	No.	%
Strongly disagree	15	50
Disagree	5	16,6
Neutral	5	16,6
Agree	1	3,3
Strongly agree	4	13,3

Table 4 indicates that 80 % of workers ("strongly disagree" or "disagree") had not received visual health training, while only 10 % confirmed they had.

Table 4. Worker perception of visual health training activities.

Satisfaction level	No.	%
Strongly disagree	17	56,6
Disagree	7	23,3
Neutral	2	6,6
Agree	1	3,3
Strongly agree	3	10

DISCUSSION

Regarding employer responsibility for workers' visual health, a large majority (80 %) of respondents believe their employer demonstrates concern for this aspect of occupational well-being. This reflects institutional commitment to preventing visual problems, though it also highlights opportunities to strengthen occupational health policies to ensure a safe and healthy work environment at all levels.[6]

According to Guillén M,[7] "occupational safety and health are fundamental pillars for worker well-being and business success." However, 10 % of workers disagreed with this statement, suggesting gaps in perceived visual protection in certain groups. This underscores the need for more inclusive and effective strategies to ensure all employees feel supported regarding visual health and ergonomic conditions.

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Ocular irritation was the most frequent pathology (40 %), followed by visual fatigue (23,3 %). These issues are primarily linked to prolonged screen use without regular breaks and inadequate ergonomic measures. Such conditions not only affect visual health but may also reduce productivity and increase long-term complication risks.[8]

Piedrahita L et al.[9] note that most individuals spend 6–8 hours daily interacting with computers—a trend intensified since 2020 due to social distancing. In this context, Silva-Sánchez DC et al.[10] warn that visual fatigue in remote work is a significant risk factor, exacerbated by lack of prevention and prolonged screen exposure. In educational institutions—where screen use is even higher—lack of awareness about preventive practices increases asthenopia risk for both students and teachers.

Similarly, Silva-Sánchez DC et al.[11] emphasize that screen use extends beyond work into home recreational activities via other digital devices. This promotes computer vision syndrome—a condition characterized by visual and musculoskeletal symptoms such as neck and shoulder pain from prolonged electronic device use. Compounding this, 66,6 % of workers expressed dissatisfaction with workstation ergonomics, increasing both visual strain and musculoskeletal risks that affect quality of life.

Therefore, comprehensive visual health education, training, and prevention programs are recommended, along with periodic ophthalmological exams to reduce ocular stress and prevent headaches. Providing specialized optical aids—such as computer glasses, screen filters, and adequate office lighting—is also advisable. Incorporating ergonomic and comfortable furniture is essential to ensure workers' physical and visual well-being, contributing to a healthier and more productive workplace.[12]

CONCLUSIONS

The findings provide solid evidence on the importance of strengthening methodological quality and transparency in primary care processes, while revealing persistent barriers limiting intervention effectiveness. Consequently, integrated strategies are needed that link clinical practice with applied research, promote continuous professional training, and enhance accessibility of scientific output in local and international contexts—ensuring sustainable public health impact and supporting future studies.

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