https://dx.doi.org/10.4314/jnoa.v26i2.5

A SURVEY OF WORKERS' KNOWLEDGE OF OCCUPATIONAL HAZARDS AND EYE-PROTECTIVE DEVICE USE IN A BOTTLING COMPANY

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Abstract

Purpose: Occupational hazards pose a considerable threat to the health and safety of workers in bottling companies particularly in cases where adequate protective measures are not in place. This study aimed to assess the knowledge of occupational hazards and the use of eye protective devices among workers at the Coca-Cola Bottling Company.

Methods: A cross-sectional study was carried out at the Coca-Cola bottling company in Benin City, Edo State using a well-structured questionnaire administered to the entire 349 workers of the Coca-Cola bottling company. The result was tested using the statistical package for social science (SPSS statistics for Windows, version 22.0), and the P value was set at (P=0.05). Chi-square test was used to determine relationships between relevant variables. A p-value of <0.05 was regarded as statistically significant.

Results: Results showed that majority of the participants (99.4%) had knowledge of the use of eye protective devices while (0.6%) had no knowledge of their uses. No significant association was found between the different demographics, constant use of eye protective devices during work was not significantly associated with gender (p=0.376), marital status (p=0.680), level of education (p=0.359), or duration of employment (p=0.695).

Conclusion: Despite the increased awareness of the use of eye-protective devices among the workers, majority of the participants do not make use of these eye-protective devices when working. It is recommended that there should be a collective effort to enhance workplace safety, align knowledge with the use of eye-protective devices, and strive for safety excellence..

Keywords: Occupational Hazards, Bottling Company, Eye Injuries, Ocular Safety, Personal Protective Equipment.

Introduction

Occupational hazards are defined by the International Labour Organisation as various factors, conditions, or situations in the workplace that have the potential to cause harm, injury, or adverse health effects

to workers.[1] These hazards encompass physical, chemical, biological, ergonomic, and psychosocial factors present in the work environment. In developing countries, the working population bears a disproportionate burden of occupational hazards with a majority of these hazards occurring in these countries.[2] A study[3] on ocular health and safety assessment among mechanics of the Cape Coast metropolis estimated that a substantial proportion of adult workers in these regions are highly exposed to workplace-related dangers, with occupational injuries accounting for about 70% of ocular injuries.[3]

The eyes are susceptible to serious threats from physical or chemical injuries, which may result in temporary or permanent vision loss if not treated promptly and adequately, [4] these injuries encompass a spectrum ranging from mild eye injuries to severe ocular trauma. However, the majority of eye disorders that workers may experience in their workplace can be prevented by employing appropriate eye protective devices, including safety goggles, face shields, and eye wash centers in cases of chemical splashes. According to Alvi *et al*,[5] industrial ocular injuries can be largely prevented through strict adherence to the use of well-fitted and visible protective eyewear. In the sector of bottling companies, which are industrial sites focused on mass-production and packaging of beverages like soft drinks, similar occupational hazards exist,[6] these risks predominantly originate from the machinery, chemicals, and operational processes integral to the manufacturing procedures.

This study attempted to find out how much a particular bottling company's employees know about the risks of eye injuries at work and how strictly they follow safety procedures, especially wearing of eye protective devices. This study aimed to provide insights into the current procedures, shortcomings, and possible areas for development in guaranteeing the ocular safety and well-being of workers in this company by examining these variables.

Methodology

This was an observational and cross-sectional research design utilizing a convenient sampling technique for the selection of participants for this study. The study population was made up of factory workers at the Coca-Cola bottling company, in Benin City, Edo state, and well-structured questionnaires with both closed and open-ended questions were administered to the subjects, and a total of 349 responses were obtained.

INCLUSION CRITERIA

All factory workers in the Coca-Cola bottling plant who were willing and consented to take part in the study.

EXCLUSION CRITERIA

Workers whose job activities fall outside the Coca-Cola bottling plant, and workers in the Coca-Cola

1. International Labour Organization. Physical Hazards and Risk (online). Available: https://www.ilo.org/global/topics/safety-and-health-at-work/areasofwork/workplace-health-promotion-and-well-being/lang--en/index.htm. [Assessed 26 Dec 2023].
2. Disease control priority project. Developing control can reduce occupational hazards. 2007 (online). Available: https://pria-academy.org/pdf/OHS/DCPP-OccupationalHealth.pdf. [Assessed Dec 29 2023]
3. Abu EK, Boadi-Kusi SB, Opuni PQ, Kyei S, Owusu-Ansah A, Darko-Takyi C. Ocular Health and Safety Assessment among Mechanics of the Cape Coast Metropolis, Ghana. J Ophthalmic Vis Res. 2016;11(1):78-83. doi: 10.4103/2008-322X.158890.
4. Awunor NS, Isiah EC. (2014). A Comparative Assessment of Safety Practices Among Factory Workers in a Bottling and a Brewing Industry in Benin City, Edo State, Nigeria. Occup and Environ Health J. 2014; 3(1): 29-34.
5. Dhabaan WA, Almutairi KH, Alzahrani AA, Almutlaq AH, Jali Asiri AAH, Hasan Alshahrani RS, Hadi Jali MA, Alqahtani AMA. Assessing knowledge and practice about eye injuries first aid, with awareness about the importance of early management among general population in Asser Region, 2020. J Family Med Prim Care. 2021;10(5):2022-2027. doi: 10.4103/jfmpc.jfmpc_2223_20.
6. Alvi RH, Hassan M, Sial N, Qidwai U, Aurangzeb Z. and Rehman A. (2011). Visual Outcome and Pattern of Industrial Ocular Injuries. Pak J Ophthalmol. 2013: 29(2): 8-11.

bottling plant who did not wish to participate in the study.

Description of procedure

Before commencing the study, a letter requesting permission to conduct the study was submitted to the Coca-Cola bottling company in Benin City, Edo State. This signed approval letter was duly obtained and the employees were also given consent forms, which they signed and agreed to participate in the study. The questionnaires were then presented to the participants to obtain their responses. Five final year (600 level) optometry students of the University of Benin were recruited to assist with the distribution of the study questionnaires. They offered non-influential assistance to any of the respondents who had difficulty understanding the survey questions.

Study questionnaires

The questionnaires employed in this study were duly pretested among a cohort of 10 factory workers at the study location. The survey questions were adapted from a study on occupational injuries among factory workers at the Nigerian Institute for Oil Palm Research (NIFOR) Palm Wine Brewery, Edo State.[4]

The questionnaires consisted of four sections:

Part A: gathered socio-demographic data.

Part B: focused on participants' education level, training for their current work, and work experience in the plant.

Part C: workers' knowledge of occupational hazards and work-related ocular injuries

Part D: The use of eye protective devices, and sources of eye safety information.

Data analysis

The Statistical Program for Social Sciences (SPSS), version 22.0 was used to collect and analyze the data. Descriptive statistics such as frequencies, mean, standard deviation, percentages, and cross-tabulations were used to analyze data. Chi-square test was used to determine relationships between relevant variables. A p-value of <0.05 was regarded as statistically significant.

Results

Figure 1 shows the gender distribution of the participants. It reveals that majority of the participants were males, accounting for 76.5%, while females made up 23.5%.

Table 1 shows the age distribution of the participants. It indicates that the mean age of the participants was 34 years, with a standard deviation of 8.55.

Table 2 presents the demographic details of study participants. The highest age group was 26-30 years (18.6%), followed closely by 31-35 and 36-40 years (each 18.3%). Most participants were male (76.5%), with females making up 23.5%. Marital status showed that 52.1% were single, 45.0% were married, 2.9% were widowed, and none were divorced. Regarding religion, 96.0% were Christians, 3.7% were Muslims, and 0.3% practiced African Traditional Religion.

Table 3 summarizes participants' training and work experience. Most had tertiary education (45.6%),

4 . Awunor NS, Isiah EC. (2014). A Comparative Assessment of Safety Practices Among Factory Workers in a Bottling and a Brewing Industry in Benin City, Edo State, Nigeria. Occup and Environ Health J. 2014; 3(1): 29-34.

with secondary (28.1%) and primary education (26.1%) following. Employment duration was predominantly 6-10 years (50.4%) and 1-5 years (47.9%), with very few working 11-15 years (1.4%) or over 15 years (0.3%). Nearly all were full-time employees (98.9%), with a small percentage part-time (1.1%) and noncasual. Most participants worked 7-8 hours per day (57.3%), and the rest worked 5-6 hours per day (42.7%).

Table 4 highlights participants' knowledge and awareness of occupational hazards and safety measures. All participants (100%) were aware of occupational hazards and risks of eye injury in their workplace. The most common hazards reported were broken bottle/burst injuries and noise (60.2%), followed by broken bottle/burst injuries, chemical burns, and noise (39.8%). The primary safety measures used were safety goggles, safety boots, and overalls (47.9%), with other combinations including ear plugs (34.1%) and just safety boots and overalls (18.1%). The most frequently used protective gear included helmets (35.0%), safety goggles (32.7%), and face shields (32.4%).

Table 5 details the awareness and usage of protective eye devices among participants. Most participants (98.0%) received training on using these devices, with 99.4% aware of their purpose. However, only 42.1% consistently used eye protection, while 57.9% did not. Among users, 24.1% always wore the devices, and 18.1% wore them occasionally. Non-compliance reasons included dislike (16.0%), unavailability (16.0%), discomfort (11.7%), and work slowdown perception (6.0%). All participants replaced their eye protective devices annually. Opinions were split on whether proper safety equipment availability encouraged use, with 50.7% agreeing and 49.3% disagreeing.

Table 6 shows the relationship between the use of protective devices and some demographics: for gender, the chi-square test yielded a p-value of 0.376, indicating that there was no significant relationship between gender and the constant use of protective devices during work. The p-value for marital status was calculated as 0.680, suggesting that there is no significant relationship between marital status and the constant use of protective devices during work. With a p-value of 0.359, the chi-square test results indicate that there is no significant relationship between the level of education and the constant use of protective devices during work. The p-value for duration of employment was determined to be 0.695, indicating that there is no significant relationship between the duration of employment and the constant use of protective devices during work. No significant association was found between the different demographics tested.

DISCUSSION

Demographic Characteristics

During the course of the study, a total of 375 questionnaires were distributed among the designated participants. After a thorough and comprehensive review of the collected questionnaires, a total of 349 were determined to be suitable for inclusion in the subsequent phase of data analysis. The exclusion of certain questionnaires was necessitated by the presence of incomplete or inadequately filled responses, which had the potential to introduce confounding factors into the analytical process.

One noteworthy demographic trend that emerged from the data relates to the gender distribution

among the participants accounting for 76.5% of the total participants were identified as male. The significant majority of male participants likely reflects the demanding and complex technical nature of the job central to this study. In contrast, 23.5% of participants were female, reflecting historical gender imbalances and occupational stereotypes often seen in technical fields. These stereotypes suggest a lower representation of women compared to men within the workforce of technical fields.[8]

When considering the distribution of participants across age groups, a clear and distinct pattern becomes evident. The age group that notably stood out was the cohort aged 26 to 30 years, constituting 18.6% of the total participant pool. Remarkably, this was closely followed by two similar age groups, specifically those aged 31 to 35 and 36 to 40, with each group accounting for 18.3% of the participant demographic. This distribution within these age ranges signifies the diverse stages of professional development and the wealth of experience represented within the study sample. Some studies have found knowledge about occupational risks and hazards to be significantly associated with age among workers,[9,10] participants in the age group of <18 years reported higher exposure to occupational risks and hazards. Reasons for this might include lack of information, lack of training, lack of supervision, lack of experience on the job, lack of knowledge and skills among these age groups.[11]

The mean participant age was 34.01 ± 8.55 years, showing a wide range of ages and offering insights into age diversity within the study. Additionally, 96% identified as Christian, possibly due to the company's location in a Christian-majority area. A smaller percentage, 3.7%, identified as Muslim, indicating cultural diversity, and 0.3% adhered to traditional beliefs, reflecting a rich variety of beliefs within the study group.

Training and Work Experience

The analysis of participant qualifications reveals a clear distribution that provides insights into the educational backgrounds of those involved. It is that the largest portion, making up 45.6% of all participants, held university or college degrees. This proportion represents individuals who have pursued higher education, equipping them with a strong academic foundation, and potentially positioning them as holders of specialized knowledge and advanced skills relevant to their fields. A similar study conducted by Bhattachergee *et al*[12] reported that majority of respondents in the bottling industry (67.1%) had tertiary education while most of the respondents in the brewing industry had secondary education (45.2%). The production department employed the largest proportion of respondents in both industries with (75.6%) bottling and (58.2%) in the brewing industry respectively, this was expected of a factory.

8. Aliyu SU, Auwal I. Occupational risk and hazards exposure, knowledge of occupational health and safety practice and safety measures among workers of a Nigerian bottling company plc, Maiduguri, Borno State. J Harmon Res in Med and Health Sc, 2015:2(3):92-101.
9. WORLD ECONOMIC FORUM. Global Gender Gap Report 2023 (online). 2023. Available: https://www.weforum.org/publications/global-gender-gap-report-2023/in-full/gender-gaps-in-the-workforce/. [27 Dec 2023].
10. Chau N, Ravaud JF, Otero-Sierra C, Legras B, Macho-Fernandez J, Guillemin F, Sanchez J, Mur JM; GROUPE LORHANDICAP. Prévalence des déficiences et disparités sociales [Prevalence of impairments and social inequalities]. Rev Epidemiol Sante Publique. 2005;53(6):614-28. French. doi: 10.1016/s0398-7620(05)84741-8.
11. Volberg V, Fordyce T, Leonhard M, Mezei G, Vergara X, Krishen L. Injuries among electric power industry workers, 1995-2013. J Safety Res. 2017;60:9-16. doi: 10.1016/j.jsr.2016.11.001.
12. Takele T, and Abera K. Prevalence and factors affecting work-related injury among workers engaged in Small and Medium-Scale Industries in Gondar wereda, north Gondar zone, Amhara Regional State, Ethiopia. Ethiopian Journal of Health Development, 2007:21(1):25-34.

Shifting our focus to the temporal dimension of participants' work histories, a significant aspect emerges regarding their tenure within the professional sphere. It is evident that the majority of participants, constituting 50.4% of the collective workforce, had a work history spanning 6 to 10 years. This category represents a pool of seasoned professionals who have accumulated significant experience and expertise over an extended period. This accumulation of work experience can contribute to heightened proficiency, leadership skills, and a comprehensive understanding of the intricacies of their respective fields. Simultaneously, a notable segment of participants, comprising 47.9%, reported having been employed for a duration of 1 to 5 years. This group likely includes early-career professionals and mid-career entrants who have joined the workforce more recently. This diversity in work history duration introduces a dynamic interaction among participants at different stages of their professional journeys, fostering an environment conducive to knowledge exchange, mentorship, and the cultivation of fresh perspectives. A study by Maji[13] showed that a strong factor contributing to injury on the job is the number of years of service. It shows the highest number of injuries (57.1%) occurred in those whose years of service are more than 15 years as compared to 39.3% in those less than 5 years on the job, an obvious cumulative effect.

Regarding daily work hours, a significant consideration arises concerning the allocation of participants' efforts over time. Notably, a substantial 57.3% of the workforce engaged in daily work commitments spanning 7 to 8 hours. This arrangement allows participants to operate within distinct shifts, promoting operational continuity while also ensuring a manageable workload. The practical structuring of work hours, as indicated by this distribution, reflects an organization's efforts to optimize efficiency while prioritizing the well-being and work-life balance of its workforce. This trend was also noticed in a study conducted by Ezinne *et al*.[14] They reported that most (55.3%) of the participants in a sawmill worked more than 7 hours per day and were aware of the occupational ocular hazards (78.6%) at the sawmill but did not use eye protective devices (82.3%).

Knowledge and Awareness

The data analysis revealed a widespread awareness among all participants, with a unanimous 100% demonstrating knowledge of the various occupational risks prevalent in their work environment, particularly those related to potential eye injuries. This collective acknowledgment of potential hazards underscores the participants' recognition of the importance of occupational safety within their respective professions.

In this context, a substantial portion of the workforce, comprising 60.2% of the participants, displayed familiarity with the primary hazards associated with their line of work. These hazards primarily included risks related to broken glass or piercing injuries, chemical burns, and noise-related dangers. Recognizing these potential

13. Bhattacherjee A, Chau N, Sierra CO, Legras B, Benamghar L, Michaely JP, Ghosh AK, Guillemin F, Ravaud JF, Mur JM; Lorhandicap Group. Relationships of job and some individual characteristics to occupational injuries in employed people: a community-based study. J Occup Health. 2003;45(6):382-91. doi: 10.1539/joh.45.382.
14. Maji, TJ. Occupational Hazards among workers of seven-up bottling company plc. Kaduna plant (internet). 2006. Available: https://kubanni.abu.edu.ng/items/e62c6604-8002-4a37-96cf-7348aebf866c. Assessed: [Dec 29 2023].

threats highlights the participants' astuteness in identifying key risks to their well-being in the workplace. In response to their awareness of occupational risks, all participants took proactive measures by adhering to safety precautions. They demonstrated this commitment through the use of essential protective equipment, such as safety boots, goggles, and earplugs. Additionally, participants exhibited a conscientious dedication to safeguarding themselves against radiation risks, as evidenced by their use of helmets, safety goggles, and face shields. This commitment to following safety protocols reflects a culture of responsibility and accountability regarding individual well-being and the broader work environment. A similar study by Aliyu and Saidu[15] showed that there was a good level of knowledge of occupational hazards among workers and this increased awareness necessitated good adoption of safety precautionary measures and use of personal protective equipment (57.6%) among the participants.

While the overwhelming majority of participants, totaling 98% of the workforce, reported receiving training on the proper use of eye protection devices, a small subset of 2% indicated otherwise. This highlights the widespread emphasis on training initiatives aimed at equipping employees with the necessary knowledge for the optimal use of safety equipment, potentially fostering a comprehensive understanding of the rationale behind safety measures. This is consistent with a study conducted by Isah *et al*[16] where they reported that the response of workers with regard to training in correct use of PPEs revealed that more workers in the bottling industry 74.6% compared to 41.2% in the brewing industry received training in correct use of PPEs.

However, an interesting observation arises from the analysis of participant behaviors regarding the utilization of protective gear. Notably, a significant proportion, accounting for 57.9% of the workforce, mentioned instances where they chose not to wear protective gear. This decision was attributed to factors such as equipment unavailability, discomfort associated with its use, and a perceived lack of necessity under specific circumstances. This contrast between awareness and behavior underscores the complex interplay of practical considerations, comfort, and individual judgment when it comes to adhering to safety protocols.

A notable finding relates to the impact of the presence of safety devices on participants' compliance with safety measures. Approximately half of the participants, totaling 50.7%, affirmed that the availability of safety equipment positively influenced their use of such devices. This highlights the crucial role that the accessibility and visibility of safety tools play in encouraging responsible practices, ultimately contributing to the development of a safety-conscious environment.

The comprehensive examination of participants' awareness, responses to occupational hazards, adoption of safety precautions, training exposure, and factors influencing adherence to safety protocols provides a comprehensive understanding of the intricate dynamics within the studied workforce.

15. Ezinne NE, Ekemiri KK, Nwanali Daniel MA. Occupational Ocular Injuries and Utilization of Eye Protective Devices among Sawmill Workers in the Ojo Local Government Area of Lagos State, Nigeria. Vision (Basel) (internet). 2021;9;5(4):60. doi: 10.3390/vision5040060.
16. Aliyu AA, Saidu S, Pattern of Occupational Hazards and Provisions of Occupational Health Services and Safety among workers of Kaduna Refinery and petrochemical company ltd (krpc), Kaduna, Nigeria. Cont J of Tropic Med. 2011: 5 (1), 1 - 5.

This nuanced insight serves as the foundation upon which strategies can be formulated to further enhance workplace safety and promote a culture of vigilance and protection. This was also noted in a similar study by Faremi *et al*[17] where they found that more than 10 % of the participants minimally make use of personal protective equipment and safety precautionary measures at the workplace.

The findings presented in Table 6 indicate that there is no significant relationship between various demographic factors (gender, marital status, level of education, and duration of employment) and the consistent use of protective devices during work. This suggests that factors such as gender, marital status, educational background, and length of employment do not influence an individual's adherence to safety protocols in the workplace.

These results have several implications. Firstly, they suggest that promoting workplace safety and encouraging the consistent use of protective devices should be universal and not tailored specifically to certain demographic groups. Safety initiatives should be implemented across the board, regardless of gender, marital status, education level, or tenure within the company.

CONCLUSION

Despite increased awareness of the importance of using eye protective devices among workers, the majority of participants do not consistently wear them while working, with only about 42.1% adhering to this safety measure. This highlights the significant gap between awareness and actual implementation of eye protection in the workplace.

In conclusion, this study underscores the critical importance of workplace safety and the necessity of eye protection for employees. It emphasizes the need for bridging the disparity between awareness and consistent utilization of eye protection measures.

Furthermore, beyond research, this study serves as a catalyst for continual enhancement in occupational safety, stressing the importance of ongoing improvement in safety protocols and practices to adapt to evolving workplace environments. It calls for a collective effort to enhance workplace safety, align knowledge with action, and strive for safety excellence. The research urges stakeholders to embark on a journey of safety refinement and continual improvement.

To address the identified issues, it is recommended that managers of bottling companies provide targeted eye safety guidance to address negative attitudes toward occupational eye safety among workers. Additionally, ensuring the availability of high-quality Personal Protective Equipment (PPE), especially eye protection devices for plant workers, is crucial. Encouraging and enforcing the consistent use of these safety devices during factory work that necessitates their use is essential for promoting a safer work environment.

17. Isah EC, Asuzu MC, Okojie OH. Occupational health services in manufacturing industries in Nigeria. Occup Med (Lond). 1996;46(5):333-6. doi: 10.1093/occmed/46.5.333.

Ethics approval and consent to participate:

Ethical approval for this study was obtained from the Research and Ethics Committee of the Department of Optometry, University of Benin; REC approval number: EC/UBEN/LSC.OPT/23/27. All procedures conducted in this study adhered with the Tenets of the Declaration of Helsinki for human subjects. Subjects or the public were not involved in the design, or conduct, or reporting, or dissemination plans of our research.

Tables and Figures

Figure 1 Gender distribution of participants

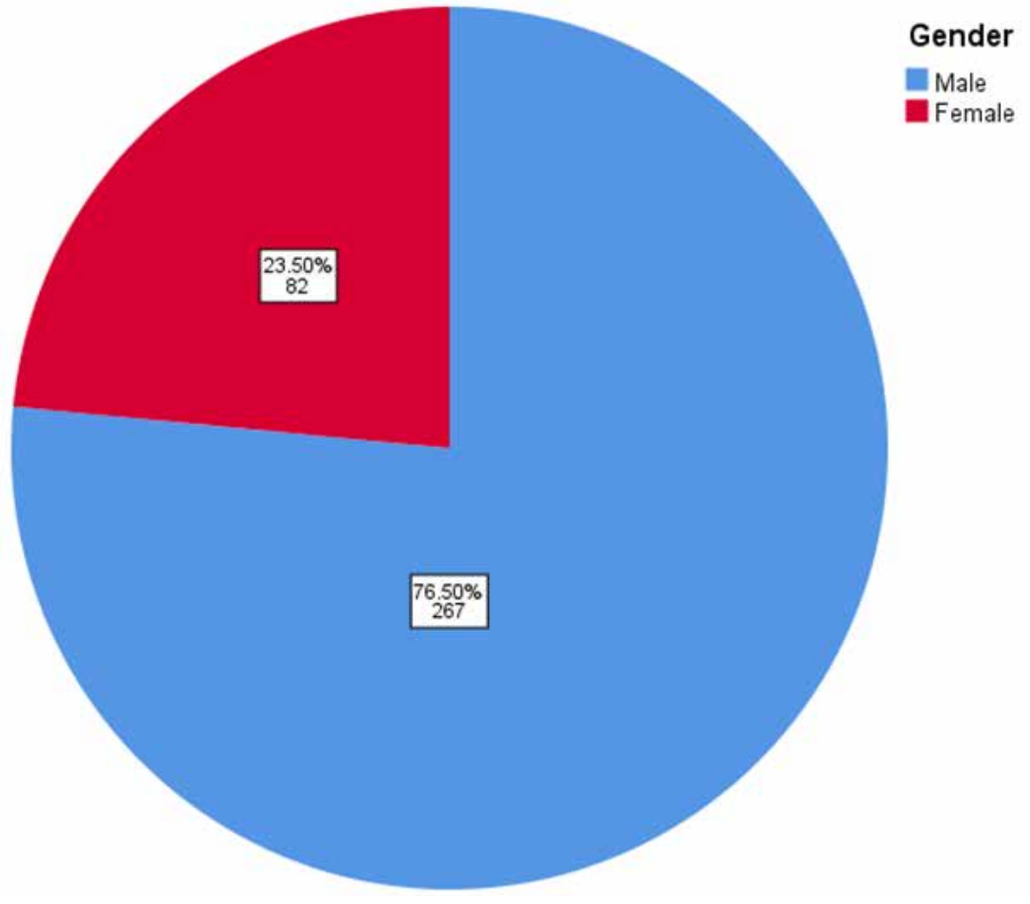

Table 1. Mean Age of Participants

Mean	Number	Standard Deviation
34.007	349	8.54602

Table 2: Demographics of Participants

		FREQUENCY	PERCENT
AGE	15-20	14	4.0
	21-25	54	15.5
	26-30	65	18.6
	31-35	64	18.3
	36-40	64	18.3
	41-45	49	14.0
	46-50	39	11.2
	Total	**349**	**100.0**
GENDER	Male	267	76.5
	Female	82	23.5
	Total	**349**	**100.0**
MARITAL STATUS	Single	182	52.1
	Married	157	45.0
	Divorced	0	0
	Widowed	10	2.9
	Total	**349**	**100.0**
RELIGION	Christianity	335	96.0
	Islam	13	3.7
	African Traditional Religion	1	0.3
	Total	**349**	**100.0**

Table 3: Training and Work Experience

		FREQUENCY	PERCENT
LEVEL OF EDUCATION	Primary	91	26.1
	Secondary	98	28.1
	Tertiary	159	45.6
	None	1	0.3
	Total	**349**	**100.0**
DURATION OF EMPLOYMENT	1-5	167	47.9
	6-10	176	50.4
	11-15	5	1.4
	>15	1	0.3
	Total	**349**	**100.0**

EMPLOYMENT STATUS	Full time	345	98.9
	Part-time	4	1.1
	Casual staff	0	0
	Total	**349**	**100.0**
HOURS PER DAY	1-2	0	0
	3-4	0	0
	5-6	149	42.7
	7-8	200	57.3
	9-10	0	0
	>10	0	0
	Total	**349**	**100.0**

Table 4. Knowledge and awareness of the occupational hazards and safety measures in the workplace.

		FREQUENCY	PERCENT
Do you have an idea of what occupational hazards are?	Yes	349	100.0
	No	0	0
	Total	**349**	**100.0**
Are you aware of any occupational hazards experienced by workers in your company that pose a risk of eye injury?	Yes	349	100.0
	No	0	0
	Total	**349**	**100.0**
What are the occupational hazards experienced by workers in this company?	Broken bottle/ burst injury, Noise	210	60.2
	Broken bottle/burst injury, Chemical burns, Noise	139	39.8
	Total	**349**	**100.0**
What are the safety measures used by workers in this company?	Safety boots, Overall	63	18.1
	Safety goggles, Safety boots, Overall	119	34.1
	Safety goggles, Ear plugs, Safety boots, Overall	167	47.9
	Total	**349**	**100.0**

What do you use for protection against radiation?	Helmet	122	35.0
	Safety goggles	114	32.7
	Face shield	113	32.4
	Sunglasses	0	0
	Total	**349**	**100.0**
Have you had training on the use of eye protective devices?	Yes	342	98.0
	No	7	2.0
	Total	**349**	**100.0**

Table 5: Knowledge and awareness of protective eye devices

		FREQUENCY	PERCENT
What is the frequency of training on the use of eye protective devices at work?	Often	0	0
	Sometimes	342	98.0
	Never	7	2.0
	Total	**349**	**100.0**
Do you have an idea on the use of eye protective devices?	Yes	347	99.4
	No	2	0.6
	Total	**349**	**100.0**
Do you always wear eye protective devices when working?	Yes	147	42.1
	No	202	57.9
	Total	**349**	**100.0**
If yes, how often?	All the time	84	24.1
	Occasionally	63	18.1
	Total	**147**	**42.1**
If no, what are your reasons for not using eye protective devices?	Do not like to use	56	16.0
	Unavailability	56	16.0
	Slows down work	21	6.0
	Unfelt need	28	8.0
	Causes discomfort	41	11.7
	Total	**202**	**57.9**
How regularly are your devices replaced?	Weekly	0	0
	Monthly	0	0
	Yearly	349	100.0
	Total	**349**	**100.0**
Does the availability of proper safety equipment encourage the use of eye Protective devices?	Yes	177	50.7
	No	172	49.3
	Total	349	100.0

Table 6: Relationship between the use of protective devices and some demographics

Categorical variable	Do you always wear protective devices when working (Chi-Square p-value)
Gender	0. 376
Marital Status	0.680
Level of Education	0.359
Duration of Employment	0.695

[How to cite this article: George Nnamdi Atuanya, Presley Oghomwen Onaghise. A Survey Of Workers' Knowledge Of Occupational Hazards And Eye-Protective Device Use In A Bottling Company. Journal of the Nigerian Optometric Association.2024;26(2):*21-33*]