

OCUPPATIONAL HEALTH PERSPECTIVE OF VISION HEALTH IMPERATIVES

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Abstract- The study examined the occupational health perspective of vision health imperatives of workers in Owerri Municipal Council of Imo State. The research also concentrated on the identification of those diseases, their causes and health implications on employees. The study aimed at determining the levels of employees' adherence to the use of personal protective equipment in their work places. The study also probed to ascertain the causes of occupational health hazards at work places. Survey research design was used for this study. Data collection was done by Random sampling technique in the selection of participants in Owerri Municipal Council. Analysis of Covariance (ANCOVA) was used in testing the hypotheses at 0.05 level of significance. Statistical summarization technique (Pearson correlation co-efficient) was used in the data analysis. The sample size is determined using the Taro Yamane formula. The study made use of self constructed and validated questionnaire in the gathering of primary data among selected participants. Also, the study made use of hospital dispensary file records as secondary data gathering technique to augment information for data analysis. The results of the study showed wide scale negative impact on environment, the physical and psychological health of the workers, the productivity and efficiency of the workers. It is recommended that adequate education, awareness campaigns, seminars, workshop and training should be stepped up to sensitize employees on occupational health and vision health imperative hazards hosts by the quarry activities and also routine free medical examination of workers to determine their health status at all times should be consistently implemented and enforced.

Key Words: Vision, Health imperative, Eye, Occupational health, Hazards

INTRODUCTION

The ability to see deeply affects how human beings perceive and interpret the world around them. For most people, eyesight is part of everyday communication, social activities, educational and professional pursuits, the care of others, and the maintenance of personal health, independence, and mobility. Functioning eyes and vision system can reduce an adult's risk of chronic health conditions, death, falls and injuries, social isolation, depression, and other psychological problems. Worldwide, about 314 million people are visually impaired. Of these, approximately 14% (45 million) are blind. Most people (87%) who are visually impaired live in developing countries. In developing countries, cataracts (a cloudy area that forms in the lens of the eye) are responsible for most cases of blindness (48%). With the right treatment, about 85% of visual impairment cases are avoidable, and approximately 75% of all blindness can be treated or prevented.

Census population in the United States estimates that approximately 90 million of the 142 million adults over the age of 40 in the United States experienced vision problems attributable to vision impairment, blindness, refractive error (i.e., myopia and hyperopia), age-related macular degeneration (AMD), cataract, diabetic retinopathy, and glaucoma. Avoidable vision impairment occurs too frequently in the United States and is the logical result of a series of outdated assumptions, missed opportunities, and manifold shortfalls in public health policy and health care delivery. The ability to see affects how human beings perceive and interpret the world. The sense of sight is critically important to an individual's communication, physical health, independence and mobility, social engagement, educational and employment opportunities, socioeconomic status, and performance of daily activities, such as reading, driving a car, and caring for family members (Alberti *et al.*, 2014; Bowers *et al.*, 2009; Bronstad *et al.*, 2013; Brown *et al.*, 2014; Rahi *et al.*, 2009; Sengupta *et al.*, 2014; Whitson *et al.*, 2007, 2014; Wood *et al.*, 2012).

Uncorrectable vision impairment can lead to a progressive inability to participate in family, social, and community activities and is associated with a higher prevalence of chronic health conditions, death, falls and injuries, social isolation, depression, and other psychological problems (Court *et al.*, 2014; Crewe *et al.*, 2013; Crews *et al.*, 2016; Kulmala *et al.*, 2008, 2012; Lord, 2006; Rees *et al.*, 2010; van Landingham *et al.*, 2014). In early childhood, any condition that prevents an eye from focusing clearly (e.g., misalignment of the eyes, pronounced differences in refractive error between the two eyes, or obstruction or deformation of the light into the eye) may result in physiological alterations to the visual pathway that can lead to ongoing visual impairments (Birch, 2013; Davidson and Quinn, 2011). This can significantly affect an infant's or child's development and health, restricting participation in social, physical, and educational activities and, later, employment opportunities (Davidson and Quinn, 2011).

In children, properly maintained eye and vision health contributes to a child's social development, academic achievement, and better health across the lifespan. The public generally recognizes its reliance on sight and fears its loss, but emphasis on eye and vision health, in general, has not been integrated into daily life to the same extent as other health promotion activities, such as teeth brushing; hand washing; physical and mental exercise; and various injury prevention behaviors. A larger population health approach is needed to engage a wide range of stakeholders in coordinated efforts that can sustain the scope of behavior change. The shaping of socioeconomic environments can eventually lead to new social norms that promote eye and vision health.

MATERIALS

Study Area

This study focuses on occupational health perspective of vision health imperatives of workers in Owerri Municipal Council of Imo State. Owerri Municipal Council is a Local Government Area in Imo State, Nigeria. Its headquarters is in the city of Owerri. It has an area of 58 km² and a population of 127,213 according to the 2006 census. The postal code of the area is 460. Owerri city sits at the intersection of roads from Port Harcourt, Onitsha, Aba, Orlu, Okigwe and Umuahia. It is also the trade center for palm products, corn [maize], yams and cassava. Owerri Municipal Council formerly the headquarters of Old Owerri Local Government Area (comprising present day Owerri, Owerri North, Owerri West, and Ngor-Okpala Local Government Areas) became a Municipal Council on 15th December, 1996. Before the advent of the British in 1901-2, Owerri town (anglicized Owerri) was and still is today made up of five villages namely – Umuororonjo, Amawom, Umuonyeche, Umuodu and Umuoyima (collectively known as Owerri Nchi Ise). Historically, the indigenes of Owerri trace their ancestry to a man called Ekwem Arugo. With British influence and colonization in the early 1900s Owerri town was the headquarters for Owerri Division and later old Owerri Province. Also, when Imo State was created on the 3rd of February 1976, Owerri city was chosen as its capital. Within the municipality, the Elders Council is called “Oha Owere”. These elders mediate in disputes over land and housing matters. In accordance with Owerri tradition, from each kindred only one person emerges as an Oha. When an Oha council member dies, the next person following by age takes up the position as an Oha, and is thereafter initiated into the Oha Owere Council. The appointment of an Oha according to Owerri tradition is a divine appointment, hereditary, non-contestable and does not rotate, just as the village headships.

Population of the Study

Essentially, this study sought to investigate the occupational health perspective of vision health imperatives of workers in Owerri Municipal Council of Imo State. Although, the result of this study is to be generalized, it is not designed that all habitants of the municipal council would participate in the study, given the nature of the topic. However, the target population is all the inhabitants of Owerri Municipal Council which is currently put at 127, 213 according to the 2006 census. Target population of 400 workers drawn from the various health care centers in Owerri municipal.

Instruments for Data Collection

The research instrument which was the questionnaire comprised of sixteen (16) items, all of the likert type 4-point scale. The respondents were required to tick their level of agreement for each statement. The primary instrument for data collection was the questionnaire and the questionnaire was divided into two sections.

Section A, which contains preliminary information designed to collect the respondents’ personal data while section B sought for questionnaire items. The questionnaire was carefully designed for the respondents to answer the questions.

A four point liberty scale was used for the questionnaire. The reliability index of the instrument ranges from 0.76 to 0.83.

Research Design and Procedure

The design that will be adopted for this study is survey research design, which is most appropriate in studying relationship variables. The rationale for adopting this method is not far-fetched. Under this survey design one correlates variables to determine the index on occupational health perspective of vision health imperatives of workers in Owerri Municipal Council. This design will be adequate in collecting data that will address the intended research questions for this study as it will be able to measure all factors under investigation at once. The simple random sampling technique was adopted and used to select the sample for the study.

Method of Administration of the Instrument and data collection

The questionnaires were administered to the respondents in their respective offices. Based on the random sampling techniques adopted by the researcher, 400 copies of the questionnaire were randomly administered to the respondents with occupational health perspective of vision health imperatives in Owerri Municipal Council, Imo state.

Methods of Data Analysis

The data that were collected from the random sampling techniques adopted by the researcher were statistically analyzed. Mean statistics, bar charts, pie charts, tables and percentages was used to answer the research questions while Analysis of Covariance (ANCOVA) was employed in testing the hypothesis at 0.05 level of significance. The ANCOVA was used due to its most robust nature and effectiveness in removing those differences which may be linearly correlated with the covariate from the counseling. It also adjusted the statistics means from the differences between the various groups used in the experiment. Therefore, ANCOVA corrected errors arising from covariate (t-test).

RESULTS

Socio-Demographic Data of Respondents

The Table 4.1 shows that 7(6.03%) respondents were aged 15-20 years, 34(29.31%) were aged 21-25 years, 41(35.34%) were aged 26 – 30 years, 23(19.83%) were aged 31 – 35 years and 11(9.48%) were 36 years and above. On marital status of the respondent, 31(26.72%) were single mothers, 67(37.76%) were married, 13(11.21%) were widow and 5(4.31%) were divorced. The frequency count on religion showed that 83(71.55%) of the respondents were Christian, 9(7.76%) were Muslim, 16(13.79%) were paganism while 8(6.90%) were under religion not listed but label “Others”. Considering the profession of the respondents, 43(37.07%) of respondents are nurses, 9(7.76%) are auxiliary nurse, 12(10.34%) were midwives, 17(14.66%) were medical doctors, 5(4.31%) were resident technicians, 21(18.10%) were therapists, 2(1.72%) were nursing students, 3(2.59%) were medical students, while 4(3.45%) were under profession not listed but label ‘Others’. With respect to the number of children, 23(19.83%) of the respondents had no children, 48(41.38%) had 1 - 3 children, 32(27.59%) had 4 - 6 children, while 13(11.21%) had 7 children and above. The frequency count for monthly salary of respondents, 51(43.97%) of the respondents earned between 50 - 100, 39(33.62%) earned between 100 – 150, 19(16.38%) earned between 150 - 200, and 7(6.03%) earned between 200 and above.

Table 4.1 Socio-demographic characteristics of the participants

Variables	Response options	Frequency(N)	Percentage (%)
Age	15 – 20years	7	6.03
	21 - 25years	134	29.31
	26 - 30years	141	35.34
	31 – 35years	23	19.83
	36years & above	11	9.48
	Total	400	100
Marital Status	Single mother	131	26.72
	Married	167	57.76
	Widow	13	11.21
	Divorced	5	4.31
	Total	400	100
Religion	Christianity	183	71.55
	Muslim	9	7.76
	Paganism	116	13.79
	Others	8	6.90
	Total	400	100
Profession	Nurse	143	37.07
	Aux.Nurse	9	7.76
	Midwife	12	10.34
	Medical Doctor	117	14.66
	Resident Technician	5	4.31
	Therapist	121	18.10
	Nursing Students	2	1.72
	Medical Students	3	2.59
	Others	4	3.45
	Total	400	100
No of Children	None	23	19.83
	1 - 3 children	48	41.38
	4 - 6 children	32	27.59
	7 – above	13	11.21
	Total	400	100
Monthly Salary	50 – 100	151	43.97
	100 – 150	139	33.62
	150 – 200	99	16.38
	200 and above	7	6.03
	Total	400	100

Source: Field survey, 2023

Research Question One: What are the levels of employees' adherence to the use of personal protective equipment in their work places?

Levels of employees' adherence to the use of personal protective equipment in their work places are shown in Fig. 1. The surveyed workers among selected small industries reported the use of safety glasses (33.3%), earplugs/muffs (8.8%), gloves (27.5%), safety shoes (10.8%), and face masks (26.5%). The reported usage of welding shields/screens and mats for knee joints protection was 50% and 50% among welders, and mechanics respectively. Nevertheless, the type and quality of mats used were poor and unsatisfactory as the rags, plastic, and paper sheets etc. were used for this purpose at many sites which cannot provide adequate protection.

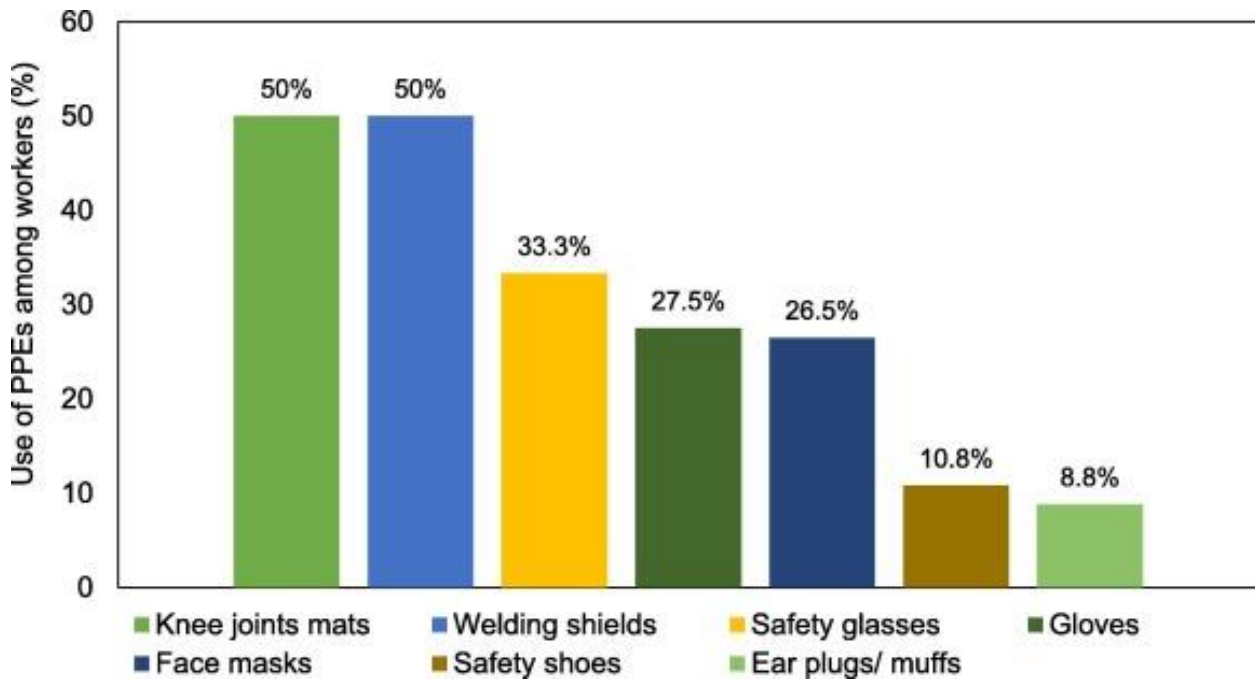


Fig. 1: Persons protective adherence of the Respondents.

Research Question Two: What are the causes of occupational health hazards at work places?

Table 4.2 above shows that 60 (73.2%) of the respondents agreed that Noise at work place can predispose an occupational health perspective while 22(26.8%) disagreed. 102 or 63.4% of the respondents agreed that Vapors/fumes can lead to vision health impalement while 30 or 36.6% disagreed. The research sought to find out whether or not dust/smoke can predispose occupational health hazards; 74 or 53.5% of the respondents agreed while 38 or 46.3% disagreed. 64 or 58.5% of the respondents agreed that direct sunlight/heat are more likely to cause occupational health issues while 34 or 41.5% of the respondents disagreed.

Table 4.2 Causes of Occupational Health Hazards at Work Places.

S/N	Variables Items	Responses		Percentages	
		Yes	No	Yes %	No %
1	Noise at work place can predispose an occupational health perspective.	160	22	73.2	26.8
2	Vapors/fumes can lead to vision health impalement.	102	30	63.4	36.6
3	Can the Dust/smoke predispose occupational health hazards?	74	38	53.5	46.3
4	Direct sunlight/Heat are more likely to cause occupational health issues.	64	34	58.5	41.5

Source: Field Data, 2023

Research Question Three: What are the health implications of occupational health and vision health hazards in Owerri Municipal Council?

Table 4.3 shows that 132 or 82.9% of the respondents agreed that eye injuries can be a consequence of occupational health hazards while 14 or 17.1% disagreed. The result sought to know whether occupational health hazards are more likely to cause headache and backache, 154 or 92.7% of the respondents agreed to the question, while 6 or 7.3% of the respondents disagreed. 72 or 87.8% of the respondents agreed that cough and catarrh can be a consequence of occupational health hazards, while 10 or 12.2% of the respondents disagreed. The study states that tuberculosis and asthma can be a consequence of occupational health hazards. 22 or 26.8% of the respondents agreed to this question, while 60 or 73.2% of the respondents disagreed.

Table 4.3 Health implications of Occupational Health and Vision Health Hazards in Owerri Municipal Council

S/N	Variables Items	Responses		Percentages	
		Yes	No	Yes %	No %
1	Eye injuries can be a consequence of occupational health hazards	132	14	82.9	17.1
2	Occupational health hazards are more likely to cause headache and backache	154	6	92.7	7.3

3	Can cough and catarrh be a consequence of occupational health hazards	72	10	87.8	12.2
4	Tuberculosis and asthma can be a consequence of occupational health hazards	42	60	26.8	73.2

Source: Field Data, 2023

The research results presented here are predicated on the three hypothesis tested to guide the study.

Hypothesis One:

There is no statistically significant relationship between occupational health and vision health hazards of employees' health.

TABLE 4.4:

Variables	N	DF	P. Level	Calculated Value	Critical Value	Remarks
Occupational Hazards (X)	60	58	0.05	0.95	0.25	S
Employee Health (Y)	60	58	0.05	0.09	0.25	S

Decision:

Since the computed $r=0.95$ is greater than the critical value of 0.25 at 0.5, it means that the perception of stone crushing boosts the level of industrial health hazards experienced by workers. Therefore, we accept that there is strong relationship between stone crushing activity and impairment of employee's health. The null hypothesis is however rejected and the alternative hypothesis is therefore accepted. This result however confirms earlier findings by Isah (2019) and Nwankiti (2018) who reported that mining/quarrying activities increased susceptibility of employees to risks and impairment of health and in turn reduce employee's job satisfaction.

Hypothesis Two:

There is no statistically significant relationship between occupational health and psychological well-being of employees and their efficiency at work.

TABLE 2

Variables	N	DF	P. Level	Calculated Value	Critical Value	Remarks
Occupational Hazards (X)	60	58	0.05	0.32	0.25	Significant
Psychological Health & Efficiency	60	58	0.05	0.32	0.25	Significant

Decision:

Since the computed $r=0.32$ is greater than the critical value of 0.25 at the probability level of 0.05, the null hypothesis was therefore rejected. This means that the alternative hypothesis was therefore accepted indicating that there was a statistically significant relationship of occupational health risk on employee's psychological health and efficiency at work. This result is similar to the findings reported by Karasek and Theorell (2019), that employees working in the high strain jobs like that of quarry and mining activities have high risk in psychological ailments such as anxiety, depression, stress and fatigue which could in turn predispose employees to physical hazards on the job. This study reveals that more women than men were affected in the susceptibility level of occupational hazards. Also the result supports the findings of Fulekar (2019), who reported that exposure to dust causes temporary disabilities and deaths.

Hypothesis Three:

There is no statistically significant relationship on exposure to occupational health perspective and vision health imperative between trained and untrained workers.

TABLE 3:

Variables	N	DF	P. Level	Calculated Value	Critical Value	Remarks
Occupational health Vision health exposure to Risk	60	58	0.05	0.58	0.25	Significant
Employee Level of Exposure	60	58	0.05	0.58	0.25	Significant

Decision: Since the computed $r=0.58$ is greater than the critical value of 0.25, it means that the perception of training and creating awareness of health risks among quarry employees actually equips them with the know-how and knowledge to take protective and preventive care of them to minimize attendant occupational risks in the quarry job. Therefore, we reject the null hypothesis and accept the alternative hypothesis. This outcome is however buttressed by the findings of Friedman and Rosenman (2014) who reported that a particular pattern of behaviour like ignorance and unawareness of hazards could predispose employees

prematurely to industrial risks and illnesses such as tuberculosis, asthma, cough, silicosis among other sicknesses. This is when employees who have awareness and knowledge of hazards and could engage in protective behaviour at work are compared with other employees without such advantage.

Discussion

This research provided the opportunity to examine the assessment of occupational health perspective of vision health imperatives on workers in Owerri Municipal Council of Imo State. Result obtained from the research indicates that backache, headache, cough, catarrh, eye injuries, tuberculosis, and asthma were the most prevalent occupational health and vision health imperatives among workers in Owerri Municipal.

This finding is in consonance with previous studies (Isah, Asuzu, & Okojie, 2018) which reported that backache, headache, cough, catarrh, eye injuries, tuberculosis, asthma are the commonest occupational health hazards among workers.

The study further investigated the adherence to the use of personal protective equipment in their work places. Results indicated that face mask, hand gloves, knee joint mats, safety shoes, welding shields and safety glasses were the measures taken against occupational health hazard and vision health imperative among workers.

It also emerged from the research that workers that used the safety measures were insignificant as a result of unawareness about occupational health hazards and safety measures. Majority of the participants reported that, that never used the safety measures. While few number of the respondents accepted to have used it sometimes, negligible number agreed to have used it always.

Conclusion

The statistical analysis of the variables studied in this research indicates that the three null hypotheses formulated were rejected while the alternative hypotheses were accepted and upheld. Thus, it was found that working activity predisposes the employees to multiples of occupational health perspective and vision health imperative if not given job security, training and awareness information on attendant dangers. However, whether the workers perceive industrial hazards or not, employees still show total commitment and dedications to their duties and goal of organization (Achal, 2018). Beckler, (2009), also reports that workers love job security and constant training. The findings also indicate that there are evidences of eye problem, headache and backache and perhaps other diseases among employees as indicated in the medical file records studied. Also, some traces of silicosis, tuberculosis and asthma were found among the participants. However, it is not easy to confirm the incidence levels of the ailments found because of the small number of workers with 10 or more years of exposure to silica dust in the study. Also a wide range of other occupational health perspective and vision health imperative hazards recorded by employees include noise pollution, and even psychological problem such as phobia, anxiety, depression, fatigue and stress among others.

Recommendations

Based on the strength of the above findings and conclusions the study offers the following recommendations for minimizing the attendant occupational health perspective and vision health imperative hazards among workers:

- ❖ Adequate education, awareness campaigns, seminars, workshop and training should be stepped up to sensitized employees on occupational health and vision health imperative hazards posed by the quarry activities.
- ❖ Adoption of supply and use of protective and preventive devices among workers should be encouraged and passed as law.
- ❖ Routine free medical examination of workers to determine their health status at all times should be consistently implemented and enforced.
- ❖ There should be rehabilitation of workers who have been incapacitated as a result of occupational illness.
- ❖ Improved personal hygiene and reduction of duration of contact with dust in line with international standards must be encouraged and adopted by relevant government agencies.

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