



JOB-RELATED HAZARDS ASSOCIATED WITH TRAFFIC WARDEN IN PORT HARCOURT METROPOLIS, RIVERS STATE

¹Ogbuehi Desmond

pstdesmond7@gmail.com

School of Environmental Health Technology,
Rivers State College of Health Science and Management Technology, Port Harcourt, Rivers
State, Nigeria

&

²Ntegun Emmanuel Lawson

ntegunmansion1@gmail.com

School of Environmental Health Technology,
Rivers State College of Health Science and Management Technology, Port Harcourt, Rivers
State, Nigeria

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ABSTRACT

The study job-related hazards associated with traffic wardens in Port Harcourt metropolis sought to examine the physical hazards, chemical hazards, psychosocial hazards, biological hazards and the ergonomic hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State. Three objectives, three research questions and three hypotheses guided the study. The study was carried out in Rivers State. This study adopted a Descriptive cross-sectional survey design. The population of the study was 846 traffic wardens and the sample size was 400 respondents, comprising 280 Male Wardens and 110 Female wardens' officers in Port Harcourt metropolis. The instrument for data collection was a structured questionnaire titled "Occupational Hazards Associated with Traffic Warden". The instrument was structured on five point likert type rating scale of Strongly agree (SA), Agree (A), Undecided (U), Disagree (D) and Strongly Disagree (SD). The instrument was subjected to face and content validation by three experts. A reliability coefficient of 0.76 was established with the aid of SPSS software. The findings reveals that traffic wardens are associated with physical hazards with a grand mean value of 3.982 and 3.983 for male and female wardens, psychosocial hazard with grand mean value of 3.955 and 3.933, biological hazards with grand mean value of 4.202 and 4.117 and ergonomic hazard with grand mean value of 4.011 and 3.992 for male and female wardens respectively. Based on the findings of the study, the following recommendations were made: Federal Road Safety Commission (FRSC) should embark on road traffic education, training and prevention of hazard, which are the best methods for managing the adverse health effects that are common among male and female traffic wardens, Ministries in charge of labour and productivity should from time to time go for inspection of male and female traffic wardens on duties and ascertain the hazards that are prevalent to them and adopt proper preventive measures and suggestion for further studies were also made.

Keywords: Job-related hazards, traffic wardens.



INTRODUCTION

Background to the Study

A hazardous chemical is any substance that poses a physical or health hazard to you or others in the workplace. Traffic wardens are mostly exposed to noise pollution that poses psychological hazards to the man and woman warden (Tabraiz, et al, 2015). Such psychological disorders that affect traffic officers could be depression, public conflicts, stress, speech interference (Tabraiz et al, 2015). One of the factors that determine the rate of occupational hazards among traffic warden is training. Training is a non-formal way of developing workers with requisite skills and knowledge so as to improve their well-being. However, traffic warden who had quarterly training on traffic service would likely have less exposure to occupational hazards and could employed several protective measures towards occupational hazards as compared with the untrained warden. The level of knowledge of job-related hazards could be obtained through quarterly training which may determine the rate of exposure to other occupational related hazard like ergonomics hazards. Health and safety is an inevitable aspect of workplace because the only time an employee will perform his duties is when the employee is in good health and is sure of a safe working environment. Any rational worker or employee will perform his or her duty diligently when he knows that even in case of an injury or accident he will be taking care of. One of the efforts in trying to prevent occupational hazard in workplace is ergonomics (Al-Swaity and Enshassi 2012).

Ergonomics is one of the procedures that eliminate the hazards and risk in the workplace. Ergonomics produces and integrates knowledge from the human sciences to match jobs, systems, products, and environments to the physical and mental abilities and limitations of people (Oostakhan, et al, 2012). Ergonomics seeks to safeguard safety, health and well-being of workers whilst optimizing efficiency, productivity, comfort, health and performance. Ergonomic is the science of designing the job to fit the worker, rather than forcing the worker to fit the job. It takes account of the capability and limitation of the human body. It applies information about human behaviour, abilities and limitations and other characteristics to the design of tools, machines, tasks, jobs and environments for productive, safe, comfortable and effective human use.

Statement of the Problem

Majority of accidents on the road occurs due largely to inadequate adherence to traffic signs administered by the traffic warden. It is noted that most workers who are casual staffs had little or no exposure to traffic training which has led to poor performance and confusion at the traffic junctions. Evidence shows that the exposure to job-related hazards varies among gender disposition of workers as observed in Port Harcourt metropolis. It is obvious that motorists' exhibits act of intimidation on the side of female warden and neglect their traffic instruction, all which is hazardous to the traffic warden. Negative attitude of motorists towards traffic warden is on the increase and has paved way for danger such as hit and run accident, smokes from the exhaust, over speed above the speed limit amongst others. In the recent times, the metropolis of Port Harcourt is faced with the challenges of road congestion due to poor adherence to traffic rules and instruction given by the traffic warden which hither to has constituted a great hazards especially towards the traffic officers and it is in the light of the foregoing, that the researcher seems to bridge the gap by ascertaining the occupational hazards associated with traffic warden in Port Harcourt Metropolis, Rivers State.



Aim and objectives of the Study

The aim of this study was to investigate the job-related hazards associated with traffic warden in Port Harcourt metropolis, Rivers State. Specifically the study sought to:

1. Determine the psychosocial hazards associated with male and female traffic wardens in Port Harcourt metropolis, Rivers State.
2. Ascertain the biological hazards associated with male and female traffic wardens in Port Harcourt metropolis, Rivers State.
3. Investigate the ergonomic hazards associated with male and female traffic wardens in Port Harcourt metropolis, Rivers State.

Research Questions

The following research questions were made to guide this study.

1. What are the psychosocial hazards associated with male and female traffic wardens in Port Harcourt metropolis, Rivers State.
2. What are the biological hazards associated with male and female traffic wardens in Port Harcourt metropolis, Rivers State.
3. What are the ergonomic hazards associated with male and female traffic wardens in Port Harcourt metropolis, Rivers State.

Hypotheses

The null hypotheses were formulated and tested at 0.5 alpha level.

HO₁ There is no significant difference between the mean response of male and female traffic wardens on the psychosocial hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State.

HO₂ There is no significant difference between the mean response of male and female traffic wardens on the biological hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State.

HO₃ There is no significant difference between the mean response of male and female traffic wardens on the ergonomic hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State.

Literature Review

Concept of Traffic Wardens in Nigeria

When two or more traffic flows are competing for the same road space at a junction, some form of control or set of rules is needed to minimise delays and the risk of accidents. Due to the fluctuating nature of electricity supply and at times total black outs experienced in some developing cities, operation of traffic signals has become an onerous task. The use of traffic wardens is a welcome idea, to replace existing but non-functional traffic signals. The research question then is how effective are these traffic wardens in controlling traffic? This paper therefore aims at highlighting the problems encountered by the traffic warden in his quest to control traffic as well as proffer some measures to assist authority in traffic management especially during peak hours.



This is concerned with short- term measures to improve the efficient and safe movement of both pedestrians and vehicular traffic on the existing road network. The function of a street or highway is to serve the travelling public. One of the most fruitful applications of traffic management lies in the improvement of highway intersections. Minor improvements can be carried out which will reduce accidents and improve highway safety: 3-way intersections: and carried out extensive work on accidents at rural 3-way intersections. The results showed that 25 percent of accidents were the result of collisions between vehicles turning right from the main road and vehicles travelling in the same direction on the main road (for left hand drives).

Occupational Health and Safety

There is a need to confront the common challenges to job-related hazards, health & safety (OHS) including illiteracy, lack of the basic infrastructure, deficient qualified human resource in occupational health and safety, poor sanitation, inadequate nutrition, lack of research and decreased interdisciplinary cooperation between the social sciences and medicine (Mishra, & Purushothana 2019). As the health and safety of the workers has been recognized as a fundamental human right, hence all possible measures including medical, engineering as well as legislative and occupational surveillance need to be strengthened, especially in developing countries (Kolo, 2015) .The triad of Knowledge, Attitude and Practice (KAP) together make up the dynamic system of life itself. KAP study serves as an educational diagnosis of the community. KAP surveys today are widely used to investigate health behavior and health-seeking practices for effective health promotion required safety training was considered in the past a burden bared by companies. However, recent trends show that injury reduction is not the only benefit of safety training. Better management and employee relations, improved worker morale, increased production, and lower workers' compensation insurance costs can be achieved as well (McKinley 2014). Some reasons for not implementing the safety policy by most developing countries are lack of effective enforcement system, lack of information and accurate records of occupational diseases and accidents, and lack of basic professional training in occupational health and safety (World Bank, 2007).

Job-related Hazards

Traffic wardens are the victims of both verbal and physical abuse by public. Due to the nature of their job and debatable public perception regarding them, they are vulnerable to abuse. Johnson & Kemei, and Nyerere. (2016), reported that there have been over 80 incidents of sheer violence against traffic policemen in a year. Out of which 16% included physical abuse with 19% being racial abuse. Various incidents of verbal abuse have been reported on the streets of Karachi (Chaudhry, 2016). People become furious and even try to physically attack the traffic police officer and/or the equipment he is carrying like camera, e-challan book etc. and attempts on their lives. Traffic wardens are exposed to vehicle exhausts, which contain lead, during their long duty hours. Pervez et al. (2015) carried out a research to evaluate the lead levels in traffic wardens in Lahore, Pakistan. It was found that a considerably high level of lead (18.76) in the wardens on traffic duty than those on administrative duty (12.00).

Physical Hazards

A physical hazard is an agent, factor or circumstance that can cause harm with contact. They can be classified occupational hazard or environmental hazard Physical hazards include ergonomic hazards, radiation, heat and cold stress, vibration hazards, and noise hazards. Engineering



controls are often used to mitigate physical hazards. (Mitchel, 2010). Physical hazards are a common source of injuries in many industries. They are perhaps unavoidable in certain industries, such as construction and mining, but over time people have developed safety methods and procedures to manage the risks of physical danger in the workplace. Employment of children may pose special problems.

According to Nwankwo et al (2018), there are various safety measures exist to minimize these hazards, including lockout-tagout procedures for machine maintenance and roll over protection systems for vehicles. Personal protective equipment, engineering, and administrative controls such as the provision of shade cover, and rotating job shifts can minimize the risk of sun exposure for outdoor workers. In case of non-solar sources of UV radiation, suitable engineering controls and administrative controls such as safety signs and training of employees can useful (Ministry of Health 2008). Vibration has long been recognized as a serious occupational hazard. Continuously repeated exposure to high levels of vibration results in injuries or illnesses. Vibration exposure is classified into two general types: hand-arm and whole-body vibration. Hand-arm vibration causes direct injury to the fingers and hand and affects feeling, dexterity, and grip of the hand. It is a known causative factor for other ergonomic-related fatalities. Mohd Kamaret al (2014), affirm that hand-arm vibration injury associated with use of appliances or equipment with vibration such as grinders, impact drills, chipping hammers, pavement breakers, dental tools, sanders, air-powered wrenches, and saws of all types.

Psychosocial Hazards

Psychosocial refers to the interrelationships between individuals' thoughts and behaviours, and their social environment. In most literatures outside the Occupational Health and Safety (OHS) field, this term is often narrowly but diffusely viewed and refers to social environments such as family of origin, socioeconomic status and level of education (Stansfeld & Candy 2006). Whilst it is important to take cognizance of individual and non-work psychosocial factors and environment, in the OHS context, psychosocial hazards have come to refer only to hazards created by work, work design, work structure and regulation and the entire work environment (Stansfeld & Candy 2006). Psychosocial hazards consistently show enormous impact on workers' health, public health and business health (Ydstedt et al, 2006). Lost hours and absenteeism from work due to occupational injuries, ill health and work-related mental health problems are of growing concern globally. The health impact from psychosocial risks and work-related stress affects workers and their families, as well as businesses, since workers' illness is related to outcomes that can have financial impact on businesses (Ydstedt et al, 2006). These variables include sickness absences, the hidden cost of presenteeism when a sick worker is present at work and not fully productive, and also unemployment. Effects are also visible at national and even global economic levels. Several factors have been identified to increase the risks of psychosocial hazards (Bond 2008) . Some of them include changes in the working population, job content, workload, workplace and forced pace of work, work schedule, shift work, long work hours and overtime, extent of control, environment and equipment, organizational culture and function, interpersonal relationships at work (Relationships with Superiors, Subordinates and Colleagues), violence, threat of violence and bullying at work, role in organization, career development and home-work interface Recent studies indicate that contemporary and emerging psychosocial risks are changing and go beyond the traditional workplace-centered approach (Melchior et al 2007) .



Biological Hazards

The term and its associated symbol are generally used as a warning, so that those potentially exposed to the substances will know to take precautions. The biohazard symbol was developed in 1966 by Charles Baldwin, an environmental-health engineer working for the Dow chemical company on the containment products.

Biohazard Level 1: Bacteria and viruses that can cause severe to fatal disease in humans, but for which vaccines or other treatments exist, such as anthrax, West Nile virus, Venezuelan equine encephalitis, SARS coronavirus, MERS coronavirus, SARS-CoV-2, Influenza A H5N1, hantaviruses, tuberculosis, typhus, Rift Valley fever, Rocky Mountain spotted fever, yellow fever, and malaria.

Biohazard Level 2: Viruses that cause severe to fatal disease in humans, and for which vaccines or other treatments are *not* available, such as Bolivian hemorrhagic fever, Marburg virus, Ebola virus, Lassa fever virus, Crimean–Congo hemorrhagic fever, and other hemorrhagic diseases, as well as Nipah virus. Variola virus (smallpox) is an agent that is worked with at BSL-4 despite the existence of a vaccine, as it has been eradicated and thus the general population is no longer routinely vaccinated. When dealing with biological hazards at this level, the use of a positive pressure personnel suit with a segregated air supply is mandatory. The entrance and exit of a Level Four biolab will contain multiple showers, a vacuum room, an ultraviolet light room, autonomous detection system, and other safety precautions designed to destroy all traces of the biohazard. Multiple airlocks are employed and are electronically secured to prevent doors from both opening at the same time. All air and water service going to and coming from a Biosafety Level 4 (P4) lab will undergo similar decontamination procedures to eliminate the possibility of an accidental release. Currently there are no bacteria classified at this level.

Theoretical Framework

Ergonomics Principles Theory

Amalberti (2001) proposed a theory on Ergonomics Principle. This Theory distinct between competence and performance and it has become very important for cognitive ergonomist. In addition to this theoretical distinction; influential concepts are being borrowed on the hand from ecological psychology and activity theories. There is similarity between this theory and the study of determinants of occupational hazards associated with traffic warden in Port Harcourt metropolis, Rivers State. Activity theory is equally displayed in the traffic services. Therefore, the study which is occupational hazards associated with traffic warden in Port Harcourt metropolis, Rivers State has similarity with Amalberti (2001). Hence the theory is relevant to the study because competence and performances as a result of application and non-application of Ergonomic risk factors are key objectives, which need to be cleared.



Empirical Review

Mishra, et al, (2010) researched on the epidemiological study of road traffic accident cases from western Nepal. The objective of the study was to examine the factors associated with road traffic accident. A prospective observational survey design was implemented for the study with the sample representative of 360 victims. The descriptive survey study was performed between June 2004 to May 2005. The result of the study revealed that 138(38.33%) were in the age range of 15-30 years with over 30 cases of fatal accident 66(45.45%) and non-fatal 108 out of the 29436.73%) in the same age range. Over (85%) were male participants and (15%) female with the ration of 5.66:1 based on their religious affiliation, Hindus 216(60%) and Buddhists 138(38.33%). Majority of 247(68.61%) were from joint family in rural areas 237(65.85%) as compared to urban residents 123(3.17%). The prevalence of road traffic accident was indicated in educated school with 177(49.1%), graduates 141(39.15%). Participants with middle socio economic status were more affected 198(55%) while the low socio economic status were 114(31.60%). The result illustrate that personal problem was significantly associated with fatality ($\chi^2 = 8.03$, $p < 0.01$) I alcohol consumption was indicated significant ($\chi^2 = 30.25$, $p < 0.001$). Chronic diseases show statistically significant associated with high fatality ($\chi^2 = 7.31$, $p < 0.001$), personal conflict was significantly associated with case fatality ($\chi^2 = 18.88$, $p < 0.001$). Based on duration or time of road traffic accident, maximum case of accident was between 3-7p.m accounted for 159(44.16%), 87(24.16%) for 7-11a.m. A total of 201 cases occurred during week days between 3 to 7p.m and 7 to 11 am accounted for 81(40.29%) and 66 (32.83%) respectively. While weekend case of RTA was 72(45.28%) of 159. It was concluded that road traffic accident remain fatal among traffic warden. Both studies focused on occupational hazard of traffic workers hence related to the present study.

Wodele, et al, (2014) conducted a study on occupational hazards and safety measures amongst the paint factory workers in Lagos, Nigeria. A cross-sectional survey design was implemented for the study with an inclusive criteria called for factory workers in paint production factories. The result of the study revealed that the age range of 25-34 years of 45.75% were obtain whilst the 62% being males and 38% females with the ratio of 2:1. Majority (44.5%) of workers had secondary education while 78% had more than primary education. Good proportion (40%) of workers had 3-5 years of service. The level of awareness of occupational hazard is high (72.5%) while 60.75% of these workers had not been formally trained on occupational hazard and safety. Average of 58.5% uses personal protective devices, of which 85.8% do not use hand gloves, 61.5% do not use goggles, 74.75% do not use safety boots, 66.90% of the respondents had symptoms due to hazard exposure, headache (33.75%), fatigue (10.5%), skin irritation (8.75%), etc. A statistically significant ($p < 0.05$) increase in urine concentration of lead, cadmium, arsenic and chromium which is similar to the result of the present study hence, both studies are related.

Tabraiz, et al (2015) studied the physio-psychological effects on traffic wardens due to traffic noise pollution; exposure effect relation. The result of the study revealed that the psychological challenges of noise pollution that affect traffic warden include depression (58%), stress (65%), public conflict (71%), irritation and annoyance (54%), behavioural effects (59%) and speech interference (56%). The physiological effects are: hypertension (87%), muscle tension (64%), exhaustion (48%), low performance levels (55%), loss of concentration (93%), hearing disorder (69%), headache (74%) and cardiovascular issue (71%). The association between psychological



and physiological effects based on percentage and rate of exposure time to noise pollution, depression (RRT = 0.946, p = 0.133) stress suffering (RR = 0.014; p = 0.173), public conflict (RR = 0.946, p 0.133), irritation and annoyance (RR = 0.596; p 0.0616) and speech interference (R = 0.355; p=0.445); hypertension (RR=0.96; p=0.00095), and cardiovascular issue (RR=0.775; p 0.044). In conclusion, physiological and psychological effects were challenge of traffic warden. The relationship between the previous study and the current one was because of psychosocial hazards, age, and nature of job among others.

Mistra, et al (2018) presented a study on road traffic injuries; a study on severity and outcome among impatient of a tertiary care level hospital of West Bengal, India. Data was analyzed using SPSS version 22.0 via binary logistic regression and Mann-Whitney u-test, The results of the study revealed that the outcome of fatal case was death and permanent disability was 34.24%, were significantly found (p = 0.06). Overall 70.5 1% were male and the mean age of male and female participants were 36.02 + 15.75 years and 36.21 + 18.08-years. About two-thirds (68.13%) reside in urban cities and 76.30% were Hindu worshippers and 23.70% were Muslim. Slightly above average had lower educational level belong to SC and ST was 59% and 56% respectively. And 56.3% had lower socio economic status and 60.4% were married. Average proportion of accidents in the winter was (47.5%) end and beginning of the week (51.36%), between 6am and 12noon (40.68%). In conclusion, non usage of protective devices, poor road condition among others contributes to road traffic injuries. Road traffic injuries are the conditions that relate both studies.

Methodology

Descriptive cross-sectional survey design was used for the study as the research design. This study was carried out in Port Harcourt metropolis of Rivers State, Nigeria. The major city of that comprised of Port Harcourt metropolis are Port Harcourt city, Obio/Akpor, partly Eleme and Okirika among others. The population of this study comprised of 846 traffic wardens within Port Harcourt metropolis (Traffic Service and Control, 2019). The sample size for the study was 400. This was calculated using Taro Yamane method for a finite population. Formula of Taro Yamane method (Yamene, 2019). The instrument eliciting information for this study was a self-structured questionnaire titled Occupational Hazards Association with Traffic Warden (OHATW). The data obtained from the respondents were analyzed using mean and standard deviation. The mean responses were used to answer the five research questions and t-test statistics was used to test the six null hypotheses at .05 level of significance.

Results and Discussion of Findings

Research question 1: What are the psychosocial hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State?

Table 1 Mean Responses and Standard Deviation no. the psychosocial hazards Associated with traffic wardens in Port Harcourt metropolis

S/No	psychosocial hazards	N = 280			N = 110		
		MALE WARDENS			FEMALE WARDENS		
		X	SD	REMARK	X	SD	REMARK
1.	Traffic wardens are associated with acute	4.20	.951		3.50	1.168	



2.	stress in Port Harcourt metropolis			Agree			Agree
	Traffic wardens are associated with chronic stress. in Port Harcourt metropolis	3.93	1.168	Agree	4.33	.492	Agree
3.	Traffic wardens are associated with bullying and harassment, in Port Harcourt metropolis	4.09	1.059	Agree	3.95	1.357	Agree
4.	Traffic wardens are associated with lone or remote working, in Port Harcourt metropolis	3.75	1.174	Agree	3.83	1.193	Agree
5.	Traffic wardens are associated with violence in the workplace in Port Harcourt metropolis	3.91	1.159	Agree	4.00	1.128	Agree
6.	Traffic wardens are associated with fatigue in Port Harcourt metropolis	4.05	1.096	Agree	3.75	1.603	Agree
7.	Traffic wardens are associated with alcohol in Port Harcourt metropolis	4.02	.952	Agree	4.08	.900	Agree
8.	Traffic wardens are associated with drug use in Port Harcourt metropolis	3.42	1.329	Agree	4.00	.953	Agree
9.	Traffic wardens are associated with Cumulative fatigue in Port Harcourt metropolis	4.07	1.303	Agree	3.67	1.155	Agree
10.	Traffic wardens are associated with Transient fatigue in Port Harcourt metropolis	4.11	1.227	Agree	4.42	1.165	Agree
Grand mean		3.95	.2478	Agree	3.933	.3025	Agree
		5					

The data in Table 1 revealed that male wardens had a mean range of 3.42 – 4.20 and standard deviation of .951 – 1.329. While the female wardens had a mean range of 3.50– 4.42 and standard deviation of .953 – 1.165. The grand mean are 3.955 and 3.933 for male and female wardens respectively, which are above the real limit of 3.50. This indicates that traffic wardens are associated with psychosocial hazards in Port Harcourt metropolis, Rivers State. The closeness of the standard deviation indicated that the respondents were homogeneous or closely to their opinion.

Research question 2: What are the biological hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State?

Table 2: Mean Responses and Standard Deviation on the Biological Hazards Associated with Traffic Wardens in Port Harcourt metropolis

S/N	Biological Hazards	N = 280			N = 110		
		MALE WARDENS		REMARK	FEMALE WARDENS		REMARK
X	SD	X	SD				
1.	Traffic wardens are associated with Airborne pathogens in Port Harcourt metropolis	4.51	.605	Agree	3.92	.515	Agree
2.	Traffic wardens are associated with	4.33	.579	Agree	4.33	.651	Agree



3.	Stinging insects in Port Harcourt metropolis	4.15	.705	Agree	4.63	.759	Agree
4.	Traffic wardens are associated with Harmful plants in Port Harcourt metropolis	4.15	.705	Agree	4.33	.788	Agree
5.	Traffic wardens are associated with Animal and Bird Droppings in Port Harcourt metropolis	4.00	.720	Agree	4.17	.718	Agree
6.	Traffic wardens are associated with Sewage in Port Harcourt metropolis	4.11	.658	Agree	4.00	.426	Agree
7.	Traffic wardens are associated with Blood and Body Fluids in Port Harcourt metropolis	4.04	.637	Agree	4.00	.603	Agree
8.	Traffic wardens are associated with Mold in Port Harcourt metropolis	4.25	.726	Agree	4.08	.793	Agree
9.	Traffic wardens are associated with Fungi in Port Harcourt metropolis	4.31	.505	Agree	4.33	.492	Agree
10.	Traffic wardens are associated with respiratory infections in Port Harcourt metropolis	4.18	.863	Agree	3.67	.888	Agree
	Traffic wardens are associated with tetanus in Port Harcourt metropolis						
Grand mean		4.202	.1958	Agree	4.117	.2038	Agree

The data in Table 2 revealed that male wardens had a mean range of 4.00 – 4.33 and standard deviation of .579 - .863. While the female wardens had a mean range of 3.92– 4.64 and standard deviation of .426– .888. The grand mean are 4.202 and 4.117 for male and female wardens respectively, which are above the real limit of 3.50. This indicate that traffic wardens are associated with biological hazards in Port Harcourt metropolis, Rivers State. The closeness of the standard deviation indicated that the respondents were homogeneous or closely to their opinion.

Research question 3: What are the ergonomic hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State?

Table 3: Mean Responses and Standard Deviation on the Ergonomic Hazards Associated with Traffic Wardens in Port Harcourt metropolis

S/ N	Electrical Ergonomic Hazards	N = 280 MALE WARDENS			N = 110 FEMALE WARDENS		
		X	SD	REMARK	X	SD	REMARK
1	Traffic wardens are associated with Repetitive Motions in Port Harcourt metropolis	4.05	1.026	Agree	3.83	1.030	Agree
2	Traffic wardens are associated with Poor Posture in Port Harcourt metropolis	3.85	1.177	Agree	3.92	1.240	Agree
3	Traffic wardens are associated with Forceful Motions in Port Harcourt metropolis	4.05	1.253	Agree	4.17	1.193	Agree



4	Traffic wardens are associated with Stationary Positions in Port Harcourt metropolis	4.29	.854	Agree	4.33	.985	Agree
5	Traffic wardens are associated with Direct Pressure in Port Harcourt metropolis	4.04	1.170	Agree	3.67	1.670	Agree
6	Traffic wardens are associated with Excessive Vibration in Port Harcourt metropolis	3.87	1.072	Agree	3.92	1.311	Agree
7	Traffic wardens are exposed to Extreme Temperatures in Port Harcourt metropolis	4.07	1.034	Agree	4.17	1.193	Agree
8	Traffic wardens are associated with Improper Lighting in Port Harcourt metropolis	3.87	1.320	Agree	3.67	1.371	Agree
9	Traffic wardens are associated with excessive noise in Port Harcourt metropolis	3.93	1.016	Agree	4.08	1.084	Agree
10	Traffic wardens are associated with Frequent Lifting in Port Harcourt metropolis	4.07	1.215	Agree	4.17	1.030	Agree
Grand mean		4.011	.2331	Agree	3.992	.1929	Agree

The data in Table 3 revealed that male wardens had a mean range of 3.85 – 4.29 and standard deviation of .854 - 1.253. While the female wardens had a mean range of 3.83– 4.33 and standard deviation of .983 – 1.371. The grand mean are 4.011 and 3.992 for male and female wardens respectively, which are above the real limit of 3.50. This indicates that traffic wardens are associated with ergonomic hazards in Port Harcourt metropolis, Rivers State. The closeness of the standard deviation indicated that the respondents were homogeneous or closely to their opinion.

Test of Hypotheses

Hypothesis: 1 There is no significant difference between the mean response of male and female traffic wardens on the psychosocial hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State.

Table 4: t-test Analysis on the Mean Responses of male and Female Traffic Wardens on the Psychosocial Hazards Associated with Traffic Wardens in Port Harcourt metropolis

GROUPS	N	MEAN	SD	DF	t-Cal	P	Sig.2-tailed	Decision
Male Wardens	280	3.955	.2478	388	.285	.05	.797	Accepted
Female wardens	110	3.933	.3025					

Table 4 revealed that the calculated t-value is -.285, the significant value at 2-tailed (P) is 797. Since significant value at 2-tailed (P) is greater than .05 ($P > .05$). The null hypothesis was accepted. This implies that traffic wardens are associated with psychosocial hazards in Port



Harcourt metropolis, Rivers State. Therefore, there is no significant difference ($P > 0.05$) between the mean response of male and female traffic wardens on the psychosocial hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State.

Hypothesis: 2

There is no significant difference between the mean response of male and female traffic wardens on the biological hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State.

Table 5: t-test Analysis on the Mean Responses of Male and Female Traffic Wardens on the Biological Hazards Associated with Traffic Wardens in Port Harcourt metropolis

GROUPS	N	MEAN	SD	DF	t-Cal	P	Sig.2-tailed	Decision
Male Wardens	280	4.202	.1958	388	1.356	.05	.180	Accepted
Female wardens	110	4.117	.2038					

Table 5 revealed that the calculated t-value is -1.356 , the significant value at 2-tailed (P) is 180. Since significant value at 2-tailed (P) is greater than $.05$ ($P > .05$). The null hypothesis was accepted. This implies that that traffic wardens are associated with biological hazards in Port Harcourt metropolis, Rivers State. Therefore, there is no significant difference ($P > 0.05$) between the mean response of male and female traffic wardens on the biological hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State.

Hypothesis: 3

There is no significant difference between the mean response of male and female traffic wardens on the ergonomic hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State.

Table 6: t-test on the Mean Responses of Male and Female Traffic Wardens on the Ergonomic Hazards Associated with Traffic Wardens in Port Harcourt metropolis

GROUPS	N	MEAN	SD	DF	t-Cal	P	Sig.2-tailed	Decision
Male Wardens	280	4.011	.2331	388	.266	.05	.791	Accepted
Female wardens	110	3.992	.1929					

Table 6 revealed that the calculated t-value is -0.266 , the significant value at 2-tailed (P) is 791. Since significant value at 2-tailed (P) is greater than $.05$ ($P > .05$). The null hypothesis was accepted. This implies that that traffic wardens are associated with ergonomic hazards in Port Harcourt metropolis, Rivers State. Therefore, there is no significant difference between the mean response of male and female traffic wardens on the ergonomic hazards associated with traffic wardens in Port Harcourt metropolis, Rivers State.

Discussion of the Findings

Based on the data collected and analyzed to answer the research questions and the hypotheses, the following findings emerged from the study. Table 1 revealed that male wardens had a mean range of 3.75 – 4.13 and standard deviation of .646 – 1.139. While the female wardens had a mean range of 3.33– 4.33 and standard deviation of .515 – 1.193. The grand mean are 3.982 and 3.983 for male and female wardens respectively, which are above the real limit of 3.50. This indicates that traffic wardens are associated with physical hazards in Port Harcourt metropolis, Rivers State. Table 2 revealed that male wardens had a mean range of 3.56 – 4.42 and standard deviation of .959 – 1.527. While the female wardens had a mean range of 3.67– 4.42 and standard deviation of .492 – 1.557. The grand mean are 3.918 and 3.942 for male and female wardens respectively, which are above the real limit of 3.50. This indicates that traffic wardens associated with chemical hazards in Port Harcourt metropolis, Rivers State. Table 3 revealed that male wardens had a mean range of 3.42 – 4.20 and standard deviation of .951 – 1.329. While the female wardens had a mean range of 3.50– 4.42 and standard deviation of .953 – 1.165. The grand mean are 3.955 and 3.933 for male and female wardens respectively, which are above the real limit of 3.50. This indicates that traffic wardens are associated with psychosocial hazards in Port Harcourt metropolis, Rivers State. The closeness of the standard deviation indicated that the respondents were homogeneous or closely to their opinions.

Conclusion

Based on the findings of the study, it was revealed that traffic wardens in port Harcourt metropolis are associated with physical hazards, chemical hazards, psychosocial hazards, biological hazards and ergonomic hazards occupational hazard intervention and that socio-demographic characteristics such as years of working experience and educational level influences the level of exposure of occupational hazards among traffic wardens in Port Harcourt metropolis. Occupational safety is a cross-disciplinary area and it is concerned with guarding the safety, health and welfare of people who are engaged in work or occupation. It is the protection and promotion of the health of workers by preventing and controlling occupational diseases and accidents and by eliminating occupational factors and conditions hazardous to health and safety at work safety is related to the physical condition at the workplace and applies to a state where the risk of harm and damage has been removed or reduced to a tolerable level. Hence, Occupational hazards placed traffic wardens at high risk of death, injury and pain among others that affect job participation and performance.

Recommendations

In view of the findings of this study, the following recommendations were made:

1. The Government and stakeholders should organise a fresher training for male and female traffic wardens to update their knowledge especially those with informal education and those with first school leaving certificate (FLSC) through the mass media.
2. Male and female traffic wardens should be encouraged to attend seminars and workshop according to prescribed and standard rules to prevent accident and injury.



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