Original Article

A Study of Knowledge of Occupational Health Hazards and Safety Practices among Automobile Mechanics in an Urban Area of South-Western Nigeria

[1]Ebenezer Adeiza Ozomata, [2]Tinuola Omotomilayo Odugbemi, *[3,4]Emmanuel Friday Osagiede
[1]Department of Community Health, Lagos University Teaching Hospital, Idi-araba, Lagos, Nigeria.
[2]Department of Community Health and Primary Care, College of Medicine, University of Lagos.
[3]Department of Community Medicine, Irrua Specialist Teaching Hospital, Irrua Nigeria. [4]Department of Community Medicine, Niger Delta University Teaching Hospital, Okolobiri, Nigeria.

Abstract

Background: Occupational diseases can result in sickness absence, economic loss, disability, or death of workers. Several studies have revealed that occupational health and safety practice is still low in some occupational groups despite their knowledge and the occupational health legislation. This study assessed the level of knowledge, attitude, and practices of automobile mechanics towards occupational health hazards and safety in a Local Government Area of Lagos State.

Methodology: This descriptive cross-sectional study was conducted among 120 consenting registered automobile mechanics in the Surulere Local Government Area of Lagos State. A questionnaire was used to obtain information on socio-demography, occupational health history, knowledge, attitude, and practice of automobile mechanic workers towards health problems, associated hazards, and safety. Data entry and analysis were done with epi-info 3.5.1 (2008); Chi-square test and Fisher Exact test were used to test for significance. Results: In this study, 96.7% of the respondents had an overall knowledge of safety devices. However, further exploration revealed knowledge gaps in select safety devices. The percentage of the respondents with a good attitude was 26.7%, while the respondents who had an overall good practice towards occupational hazards and safety was 21.7%. In this study, the daily income and years of working experience were associated with knowledge of safety practices among automobile mechanics. Full-time automobile mechanic workers had a more positive attitude than those that engaged in part-time practice. Workers with formal training demonstrated better safety practices than those that were trained by apprenticeship. Conclusion: This study reflected the level of neglect experienced by this sector in terms of the regulated safety of its workers. The quality of supervision, regulation and training received by these automobile mechanics was sub-standard.

Keywords: Occupational health hazards; Safety practices; Automobile mechanics; South-Western; Nigeria.

Introduction

The occupation of automobile mechanics has grown in response to the rising number of motor vehicles in Nigeria[1]. This has made thousands of young men from different parts of the country drawn to this occupation that is regarded as prestigious and lucrative. These workers are popularly referred to as "roadside mechanics" because their makeshift workshop is located along the motorways[1]. In the United States, mechanics are responsible for keeping more than 135 million automobiles in good condition[2]. An automobile mechanic is often described as a worker who repairs, overhauls cars and other automotive vehicles or their systems and parts[3].

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Corresponding Author: *E. F. Osagiede
c/o Department of Community Medicine, Irrua Specialist Teaching Hospital, PMB 08, Irrua, Edo State, Nigeria.
drosagiedeef@gmail.com ORCID iD
https://orcid.org/0000-0001-5254-6783

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This group of workers is often exposed to various occupational hazards with untoward health effects or injuries. They may often not be aware of the presence or untoward effects of these hazards. These hazards are either ergonomic, such as acute musculoskeletal injuries - intervertebral disk rupture, tendon rupture, hernia, or cumulative trauma disorders, including carpal tunnel syndrome, caused by long-time repetitive work[3]. In their workplaces, they could also suffer from workplace violence and attack by individuals, including dissatisfied customers, which is most often open to the public[3].

Oher occupational hazards they are exposed to could be physical, such as hand-arm vibration from power-driven hand tools, resulting in the development of White-Finger syndrome and exposure to excessive noise during car bodywork[3]. Also, it could be chemicals such as exposure to industrial chemicals, including heavy metals, contained in brake fluids, degreasers, detergents, lubricants, metal cleaners, paints, leading to various forms of chronic poisoning such as; lead poisoning, asbestosis, skin diseases, irritation of the eyes and mucous membrane including cancers. The hazards could be biological, resulting in infections from micro-organisms contamination and growth in certain adhesives[3]. It could also be psychosocial where they experience stress from failing to meet customer deadlines and the resultant verbal abuses or insults from these customers[3].

Globally, 160 million new cases and 1.1 million deaths are associated with work-related diseases and injuries[4]. Mechanics in the United States are more likely to be injured or killed on the job than workers in other professions, as evidenced by higher rates of fatalities[4]. There are hazards and attendant fatality, illness, and injuries associated with automobile mechanic work. It has been reported that the leading injury or illness to mechanics in the United States was sprains and strains (32.6%)[2]. Sprains were followed by cuts, lacerations, and punctures (15.9%), which was higher than the 9.6% rate for all occupations[2]. Bruises and contusions accounted for 10.6% of the injuries to mechanics[2]. Injuries from contact with objects or equipment accounted for (44.5%) and overexertion (21.6%)[2]. Injuries from contact with an object included being hit by an object (22.0%), struck against an object (11.3%), and caught in a piece of equipment or material (5.6%). The leading cause of fatalities were vehicles (44.9%), bullets (19.0%), as well as parts and materials (10.2%)[2]. Among the 66 cases with vehicles as the source of the fatality, 40.9% were from transportation incidents, while 34.8% were struck by falling objects, such as a car falling off a lift, rack, or jack[2].

In a cross-sectional study done in Southern India, it was noted that 50% of the automobile mechanic workers reported having musculoskeletal injuries [5]. In Nigeria, musculoskeletal disorders were the most frequent work-related health problems reported by automobile workers[6]. Fifty-four per cent of the workers that reported having musculoskeletal disorders had low back pain[6]. In a second study carried out in northern Nigeria by Sambo et al. [7], the most prevalent injuries were burns (86%), bruises (64.5%), crushed digits (62%), and cuts (59%). Forty-nine per cent of the automobile mechanic workers had low backaches, 15% had joint pains, while 7% had hernia[7].

Occupational diseases and injuries can result in sickness absence, economic loss, disability, or death[8]. A cross-sectional study was conducted among 209 welders in Puducherry, South India, to assess the awareness of occupational hazards and safety measures among welders in coastal South India. Baseline characteristics, awareness of occupational health hazards, safety practices, and availability to and utilization of safety devices by the participants were assessed using a questionnaire. The majority (83.3%) of the welders were aware of the hazards associated with their occupation; 64.1% of these welders knew safety measures[9]

In Nigeria, automobile mechanics popularly belong to the informal sector of the economy[7,8]. As a result, workers with disabilities resulting from injuries or illnesses resulting from the occupation are not compensated. Also, it has been observed that automobile mechanics have little or no knowledge regarding safety measures to protect them from the hazards and diseases associated with automobile repair[1]. Sambo et al[7]. study revealed that absenteeism within three months of the research was caused by burns which accounted for 23.5%, secondly, by falls (11.5%), fever accounted for 10.5%, breathing difficulties (9%), and fractures (3%)[7]. Furthermore, about half (45.5%) of the respondents earn between 1000-3000 naira per day (<$10)[7].

In a cross-sectional study carried out among 330 welders to assess their awareness of occupational hazards and adherence to safety measures in Kaduna metropolis in northern Nigeria, it was revealed that

only about one-third (34.2%) of the welders used one or more types of protective device with eye goggles (60.9%), hand gloves (50.3%) and boots (34.5%)[10].

Automobile mechanics make up the main fraction of the informal sector Nigerian economy. Most of these workers are self-employed or belong to a small-scale industry where the occupational problems are not documented[1,7]. This study, therefore, aims to assess the level of knowledge, attitude, and practices of automobile mechanics concerning health hazards and safety in a Local Government Area of Lagos State, Nigeria, with the hope that the findings from this research would add to existing knowledge to afford evidence-based quantification of the problem that these workers face. It would also serve as a relevant advocacy tool to policymakers responsible for providing occupational health service in both preventive and curative dimensions and subsequently integrating such services into existing facilities.

Materials and Methodology

This descriptive cross-sectional study was carried out among automobile mechanics in the Surulere Local Government Area of Lagos State. All cadres of automobile mechanics were included in the study. These mechanics commonly practice their occupation in makeshift stalls by the road. They are organized under the Nigerian Automobile Technician Association (NATA). NATA is under the Ministry of Labour and Productivity. These workers have no organized occupational health service that offers preventive and curative services. The Surulere Local Government Area has 45 registered automobile mechanic workshops, with the number of workers in each workshop varying from 1 to 17. In addition, the total number of registered automobile mechanics in the Surulere Local Government Area was 254.

A total of 120 consenting registered automobile mechanics were selected and interviewed using a systematic sampling technique. Data were collected in November 2014 from respondents in the selected workshops with the help of two research assistants. A structured, interviewer-administered questionnaire adapted from 5 previous studies carried out among automobile mechanics and other related artisans [10-14]. The instrument was pretested and validated among twenty-four automobile mechanics working at the Mushin Local Government Area of Lagos State.

The data was entered into Epi-info version 3.5.1 (2008), cleaned, and analyzed. Quantitative variables such as age, years of working experience, daily income earnings, and duration of training were entered in numbers and summarized using the range, mean, and standard deviation. Categorical variables such as ethnicity, type of training were analyzed and presented in tabulated forms using frequencies and percentages. Chi-square test and 't-test were used to test associations between categorical variables and continuous variables, respectively. Significant association (p-value < 0.05) was determined.

Results

Table 1: Sociodemographic characteristics of respondents

Variables	Frequency(N=120)	Per cent (%)
Age group(years)		
<25	1	0.8
25 -29	7	5.8
30 -34	17	14.2
35 -39	39	32.5
40 -44	25	20.8
>45	31	25.8
Mean ±SD = 39.9 ±7.5		
Marital status		
Single	8	6.7
Married	112	93.3
Educational status		
No formal education	7	5.8
Primary education	72	60.0
Secondary education	37	30.8
Tertiary education	4	3.3
Religion		
Christianity	51	42.5
Islam	69	57.5
Others	0	0.0
Ethnicity		
Yoruba	115	95.8
Igbo	4	3.3
Others	1	0.8
Estimated daily income (₦)		
<2500	66	55.0
2500- 4999	40	33.3
>5000	14	11.7
Mean ± SD= 2554.1± 1319.1		

Table 1 shows that about 46.6% of the respondents were aged 40 years and above. Almost all the respondents (93.3%) were married. Only 4 (3.3%) of the respondents had tertiary education and the majority (60.0%) of them with a maximum of completed primary level of formal education. Only 14

(11.7%) of them earn daily income above N 5,000. 00 (approximately ($14) per day, a majority (55.0%) of them had their daily earnings below N2,500.00($7).

Table 2: Work-related characteristics of the respondents

Variables	Frequency(N=120)	Per cent (%)
Job category		
Engine mechanic	47	39.2
Spray painter	33	27.5
Auto-electrician	17	14.2
Panel beater	21	17.5
Air Conditioner repairer	2	1.7
Nature of job		
Full time	118	98.3
Part-time	2	1.7
Mode of training		
Apprenticeship	115	95.8
Formal mechanic school	5	4.2
Duration of training (years)		
<6	65	54.2
>6	55	45.8
Mean ± SD =6.5±2.2		
Years of experience (years)		
<4	9	7.5
5 – 9	24	20.0
10 – 14	28	23.3
15 – 19	26	21.7
20 and above	33	27.5
Mean ±SD = 14.3±7.4		
Daily working hours		
< 8	35	29.2
>8	85	70.8
Mean ± SD =9.514±1.5		

The work-related characteristics of respondents (Table 2) show that 47 (39.92%) were engine mechanics, and the slightest subgroup of the automobile mechanics were the air-conditioner repairers (1.7%). Almost all the respondents were full-time (98.3%), and their leading mode of training was through apprenticeship (95.8%). The majority of the respondents (70.8%) work for more than eight hours per day.

Table 3: Knowledge of respondents on safety devices

Variable	Frequency (N=120)	Per cent (%)
Awareness of Safety devices		
Yes	116	96.7
No	4	3.3
Knowledge of Safety devices**		
Overall	110	97.1
Facemask	54	45.0
Rubber glove	89	74.2
Earmuffs	3	2.5
Boots	104	86.7
Barrier Cream	2	1.7
Eye Goggles	59	49.2
Helmet	42	35.0
Source(s) of Knowledge of Safety devices**		
Co-Worker	60	50.0
TV/radio	2	1.7
Clinic/Hospital	1	0.8
Books/Magazines	6	5.0
Special Safety Training	29	24.4
Daily meetings	2	1.7
Apprenticeship	89	74.2

Multiple responses allowed here**

Regarding Respondents' knowledge of safety devices (table 3), most respondents (96.7%) were aware of safety devices. Also, 110 (91.6%) of the respondents knew at least one form of safety device that they could use. On individual devices, they had more knowledge for boots (86.7%), rubber gloves (74.3%), but less proportion of the respondents for earmuffs (2.5%), and barrier creams (1.7%). Their sources of information on these safety devices were during apprenticeship training (74.2%), from co-workers (50.0%), and special training (24.4%).

Table 4: Knowledge of respondents on safety practices

Variable	Frequency	Per cent (%)
Tetanus Toxoid vac cine protects against tetanus (N=120)		
Yes	102	85.0
No	18	15.0
Awareness of treatment of work-related health problems (N=120)		
Yes	105	87.5
No	15	12.5
How to treat work-related problems (n=105)**		
Self-medication	38	31.9
Herbs from traditional healers	39	32.5
Prayers	3	2.5
Medication/treatment at a health facility	88	73.3

Multiple responses allowed **

On Knowledge of respondents on safety practices (Table 4). The majority (85.0%) of the respondents had the knowledge that the administration of tetanus

toxoid vaccine than individual protects against tetanus infection. On the knowledge of the various treatment options for work-related health problems, the majority (87.5%) said they knew at least one method they carried out. Seventy-three per cent of these respondents knew treating work-related health problems in the orthodox health facilities, 32.5% knew using herbs from traditional healers, 31.9% knew using self-medication. In contrast, only 2.5% knew the use of prayers.

Table 5: Attitude of respondents to occupational health and safety

Variables	Attitude				
	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Sucking petrol is harmful to health	28(23.3)	32(26.7)	26(21.7)	36(26.7)	2(1.7)
Application of machine oil is harmful to wounds	20(16.7)	15(12.5)	26(21.7)	57(47.5)	2(1.7)
Working with ungloved hands is hazardous	35(29.7)	52(43.3)	17(14.2)	15(12.5)	1(0.8)
The u se of safety devices protects against hazards	54(45.0)	63(52.5)	2(1.7)	1(0.8)	0(0.0)
Open wounds can be complicated by tetanus	53(44.2)	58(48.3)	9(7.5)	0(0.0)	0(0.0)
Tetanus toxoid vaccine protects against tetanus	50(41.7)	61(50.8)	9(7.5)	0(0.0)	0(0.0)
Ill workers need to access treatment services	53(44.2)	65(54.2)	2(1.7)	0(0.0)	0(0.0)

Regarding the attitude of respondents to occupational health and safety (Table 5). Twenty-six point seven per cent of the respondents disagreed that sucking petrol was harmful to health, and 57 (47.5%) disagreed that machine oil is detrimental to wounds. About two-fifth of the respondents [52 (43.3%)] agreed that working with an ungloved hand is hazardous, 63 (52.5%) agreed that the use of safety devices protects against hazards, 58 (48.3%) agreed that open wounds could be complicated by tetanus. About one-half of the respondents, 61 (50.8%), agreed that the tetanus toxoid vaccine protects against tetanus infection, and 65 (54.2%) agreed that the ill worker needs to access treatment services.

Table 6: Overall attitude of respondents concerning work-related health hazards and safety

Attitude	Frequency (%) (n=120)
Poor	3(2.5)
Fair	85(70.8)
Good	32(26.7)

The overall attitude of respondents concerning work-related health hazards and safety (Table 6). Thirty-two (26.7%) of the respondents had a good practice attitude though most 85 (70.8%) had a fair attitude concerning occupational health hazards and safety.

Table 7: Work-related practices of respondents regarding occupational health hazards

Practice	Always (%)	Most times (%)	Occasionally (%)	Rarely (%)	Never (%)
Sucked petrol from the petrol tank	17(14.3)	16(13.3)	40(33.3)	25(20.8)	22(18.3)
Applied machine oil to wound for healing	22(18.3)	22(18.3)	15(12.5)	16(13.3)	45(37.5)

Regarding the work-related practices of respondents regarding occupational health hazards (Table 7). Seventeen (14.3%) and 40 (33.6%) of the respondents always and occasionally sucked petrol from machine tanks, respectively, while 22 (18.3%) always or most times applied machine oil to wound for "rapid healing."

Table 8: Overall practice of respondents regarding occupational health hazards

Practice	Frequency (%) (N=120)
Poor	44(36.7)
Fair	50(41.7)
Good	26(21.7)

The overall practice of respondents regarding occupational health hazards (Table 8), only 26 (21.7%) had good practice regarding occupational health hazards; 50 (41.7%) had a fair practice to occupational hazards.

Table 9: Association between socio-demographic/ work-related characteristics and Awareness and knowledge of occupational health safety among respondents.

Knowledge of occupational health safety.					
Variables	**No (%)**	**Yes(%)**	**X^2**	**df**	**P-value**
Age group					
<35	8(32.0)	17(68.0)			
35-44	11(17.2)	54(82.8)	2.447	2	0.294
>44	6	25(80.6)			
Level of education					
No	2	5(71.4)			
Primary education	1	53(73.6)	5.2763	3	0.0821
Secondary	3	34(91.9)			
Tertiary education	1	3(75.0)			
Estimated daily income (naira)					
<2500	1	48(72.7)			
2500-4999	3	37(92.5)	6.4792	2	0.0281
5000 and above	4	10(71.4)			
Duration of training (years)					
<0-6	1	52(80.0)			
>6	4	43(78.2)	0.0597	1	0.806
Working experience (years)					
<4	5	4(44.4)			
5-9	7	17(70.8)			
10-14	3	25(89.3)	10.925	4	0.0345
15-19	6	20(76.9)			
>20	4	29(87.9)			

Fishers P-value

Regarding the association between socio-demographic/work-related characteristics and awareness and knowledge of occupational health safety among respondents (table 9), daily income (Fisher's p-value =0.028) and years of experience (Fisher's p-value =0.035) were significantly associated with knowledge of occupational health safety among respondents. Daily income earned showed an inverse relationship with the level of knowledge of occupational health safety. At the same time, years of experience are directly related to the level of knowledge of occupational health safety among respondents.

Table 10: Association between socio-demographic/work-related characteristics and attitude of respondents

		Attitude				
Variable	**Poor (%)**	**Fair (%)**	**Good (%)**	**X^2**	**df**	**P-value**
Age group						
<35	1(4.0)	13(52.0)	11(44.0)			
35-44	2(3.1)	49(76.6)	13(20.3)	6.4921	4	6.329
>44	0(0.0)	23(74.2)	8(25.8)			
Nature of Job						
Full time	2(1.7)	84(71.2)	32(27.1)			
Part time	1(50.0)	1(50.0)	0(0.0)	19.022	2	0.0496
Level of education						
No formal education	0(0.0)	7(100.0)	0(0.0)			
Primary education	2(2.8)	52(72.2)	18(25.0)	7.981	6	0.196
Secondary education	1(2.7)	25(67.0)	11(29.7)			
Tertiary education	0(0.0)	1(25.0)	3(75.0)			
Daily Income (Naira)						
<2500	3(4.5)	45(68.2)	18(27.3)			
2500-4999	0(0.0)	30(75.0	10(25.0)	2.688	4	0.791
5000 and above	0(0.0)	10(71.4)	4(28.6)			
Duration of training(years)						
0-6	3(14.6)	44(67.7)	18(27.7)			
>6	0(0.0)	41(74.5)	14(25.5)	2.791	2	0.332
Daily working hours						
0-8	0(0.0)	20(57.1)	15(49.9)			
>8	3(3.5)	65(76.5)	17(20.0)	7.3999	2	0.031
Working experience(years)						
0-4	5(55.6)		4(44.4)			
5-9	10(41.7)		14(58.3)			
10-14	19(67.9)		9(32.1)	3.653	4	0372
15-19	15(57.7)		11(42.3)			
20 and above	18(54.5)		15(45.5)			

The association between socio-demographic/work-related characteristics and attitude of respondents (table 10), the nature of the job (Fisher's p=0.049), and daily working hours (Fisher's p=0.031) were a significant determinant of level attitude. The nature of the job showed a direct relationship with the level of attitude of respondents to occupational health hazards and safety. Those who work full time and at most eight hours tend to have a good attitude compared to their part-time counterparts and work for more than eight hours.

Table 11: Association between socio-demographic/ work-related characteristics and overall safety practice

Practice						
Variables	**Poor (%)**	**Fair (%)**	**Good (%)**	**X^2**	**df**	**P-value**
Age group						
<35	21(84.0)	3(12.0)	0(0.0)			
35-44	50(78.1)	14(21.9)	0(0.0)	3.345	4	0.39
>44	24(77.4)	6919.4)	1(3.2)			
Level of education						
No formal education	6(85.7)	1(14.3)	0(0.0)			
Primary education	56(77.8)	15(20.8)	1(14.1)			
Secondary education	30(81.1)	7(18.90	0(0.0)	14.874	4	0.328
Tertiary education						

Nature of job						
Full time	93(78.8)	23(19.5)	2(1.7)			
Part time	2(100.0)	0(0.0)	0(0.0)	0.535	2	1.00
Duration of training (years)						
0-6	54(83.10	9(13.8)	293.1)			
>6	41(74.50	14(25.5)	0(0.0)	4.061	2	0.112
Working experience(years)						
0-4	9(100)	0(0.00	0(0.0)			
5-9	17(70.8)	7(29.2)	0(0.0)			
10-14	23(82.1)	4(14.3)	1(3.6)	6.6	8	0.535
15-19	20(76.9)	5(19.2)	1(3.8)			
20 and above	20(78.8)	7(21.2)	0(0.0)			
Mode of training						
Apprenticeship	93(80.0)	21(18.3)	1(0.9)			
Formal mechanic school	2(40.0)	2(40.0)	1(20.0)	12.714	2	0.02

Fisher's p-value

Regarding the association between socio-demographic/ work-related characteristics and overall safety practice (table 11), the mode of training (Fishers p value=0.020) was significantly associated with the level of practice of respondents towards occupational safety regarding the use of safety devices. The mode of training demonstrated a direct relationship with the level of practice of respondents. Most workers with formal training demonstrated good practice compared to others who learned the occupation through apprenticeship, where the majority tend towards poor safety.

Discussion

In this study, the mean age of the respondents was 39.9 + 7.5 years. The majority of the respondents were married and had their highest level of education at the primary school level. The majority were Yoruba, which is the predominant ethnicity in the Southwestern part of Nigeria. The majority of the respondents were engine mechanics and spray painters and were into their jobs full-time. Many of them had greater than four years of experience and worked daily for more than 8 hours on average. These characteristics were very similar in some other studies done in the Southwestern part of Nigeria and the North [7, 8]. Also, the majority of the respondents had received their training through an apprenticeship. This was not surprising because learning these occupations in developing countries like Nigeria is usually done through apprenticeship since the formal schools (technical) for learning them are not readily available and in few instances were available, they are not equipped with the relevant resources like trained human resources, equipment, infrastructure, and teaching aid as a result of the long abandonment, poor political will from the government, and lack of continuity of policies by successive administrations in Nigeria and other developing countries.

In this study, the overall awareness of respondents to safety devices was 96.7%. This was in keeping with the study done in Zaria in Northern Nigeria among roadside mechanics, where 82% of the respondents were aware of safety devices [7]. The study carried out in eastern Nepal also reported a high awareness of safety devices among welders (90.7%) [11]. In another study among welders in Ile- Ife in Osun State, southwest of Nigeria, it was reported that 90.6% of the respondents were aware of safety devices [12]. However, in a study done in southern India, the finding was relatively lower among welders than in this study and other literature [7, 11, 12]. The southern India study revealed that 64.1% of the respondents were aware of safety devices [9].

Generally, there seems to be a high knowledge of safety protective devices among artisans. This study's report was not also different as the majority (91.6%) of the respondents were knowledgeable about at least one safety device. This finding is positive, showing that their awareness has been transformed to the knowledge of safety devices. Also, this finding on knowledge of safety devices is consistent with results from a study carried out in India among brine workers, 100% knowledge of safety devices was reported among these workers [13]. However, the individual knowledge assessment of each safety device showed discrepancies in this study. For the eye goggles, 49.2% of the respondents were aware of this device. This finding contrasts with the study carried out in Ile-Ife, western Nigeria, which reported that 90.6% of the welders knew eye devices [12]. This discrepancy could be attributed to the difference in hazards and a particular safety device emphasized in a profession.

In this study, one-half of respondents got information on safety devices from co-workers, but 24.4% from safety training. This was similar to the Zaria study carried out among roadside mechanics, where 64% of respondents got informed on safety devices from their co-workers, 11.5% through mass media, and 6.5% through specialized training [7].

In this study, the majority of the respondents, 85 (70.8%), had a fair attitude towards occupational health and safety. This finding of average attitude scores further corroborated a fair attitude score among automobile mechanics in Surulere, Lagos State. This did not translate to the practice of avoidance of some

activities that could be harmful to their health. For instance, in this study, over four-fifths of the respondents were involved in sucking premium motor spirit (PMS) from motor tanks. Over three-fifths indulged in applying machine oil to wounds believing that such practices could facilitate wound healings. This finding of their erroneous healing ability of machine oil on their wound is similar to findings from a previous study. Respondents believed that in an emergency, the application of break-oil to fresh wounds arrest bleeding [6].

Concerning those that still sucks PMS from motor tanks, it was found to be a regular practice for over one-quarter of the respondent, with 14.3% practising it always while 13.3% do it most times. Unfortunately, one-half of the respondents disagreed that sucking PMS was harmful to health. This finding would be crucial for policymakers to consider and provide alternatives to mouth sucking of PMS by artisans. This has become very important as previous studies revealed that some of these artisans erroneously believe that it is medicinal when a small quantity of PMS is swallowed [7, 8]. On the contrary, respondents in this study demonstrated a positive attitude towards using safety devices to protect against hazards, that open wounds could be complicated by tetanus infection, tetanus toxoid vaccine could protect against tetanus infection, and sick workers or artisan need to access treatment services.

In this study, the daily income and years of working experience were associated with knowledge of safety practices among automobile mechanics. Daily income showed an inverse relationship with the attitude of the respondents. At the same time, years of working experience depicted a direct relationship with the attitude of respondents to work-related hazards and safety. In Ile-Ife, South-Western Nigeria, a study detected an association between level of education and knowledge of protective eye devices (googles) among welders [12]. However, in this study, there seems to be a direct relationship between formal education and knowledge of occupational health safety among the respondent. Still, there was no statistically significant relationship ($p=0.082$). These findings may not be astonishing as most of the respondents alluded to the fact that they acquired their knowledge on safety devices during apprenticeship and one-half of cases from their co-workers. Only 5% sourced their knowledge from books and magazines.

Further findings from this study revealed that the nature of the job (part-time or full-time) and daily working hours were associated with the attitude of automobile mechanics towards occupational health hazards and safety. Full-time workers had a more positive attitude than those that engaged in part-time practice. This may be because those artisans who are involved in other occupations may pay less attention to the safety practices of this occupation as a result of their divided attention as "a jack of all trade is a master of none." On the other hand, it may be that their other occupation is their primary source of earnings. Therefore, automobile mechanics work is taken less seriously. Daily working hours were also found to have a direct relationship with the attitude of the respondents. This might not be unconnected to the fact that those in full-time occupations would likely put in more than eight hours daily.

This study showed a statistically significant relationship between training type and automobile mechanics' general overall safety practice. Workers with formal training demonstrated better safety practices than those that were trained by apprenticeship. The knowledge gaps of the selected safety devices, the poor attitude and practice could reflect the poor monitoring/auditing, less stringent practice, legislation, and regulatory body in the State that is responsible for the safety and health of these automobile mechanic workers. Therefore, the government and other relevant stakeholders need to set up a legal framework for quality training, supportive supervision, monitoring, and enforcement of safety in their work environs of these workers to reduce the hazards commonly associated with automobile mechanic occupation.

Conclusion

Even though there was an overall good knowledge of 96.7% in this study, there were gaps in knowledge of the various safety devices. The attitude and work-related practices regarding occupational health were generally poor. Of particular worry was the practice of mouth sucking of PMS from motor tanks and the lack of knowledge of the health consequences of the practice. As a matter of urgency, the State government should escalate health promotion campaigns, educate these workers about the risk and dangers of this practice, and sort engineering design to serve as a substitution method for fetching PMS from motor tanks for automobile mechanics work. Furthermore, occupational health experts and other stakeholders should develop standard operating procedures and

guidelines on health hazards and safety for automobile workers under their jurisdiction.

This study revealed that their knowledge of safety devices and practices was influenced by years of working experience; in addition, the attitude of the workers was positively influenced by the nature of their work as full-time mechanics had a better attitude towards health and safety practices. Hence if these workers are encouraged to work full time instead of part-time by giving them some incentives such as tax rebate, their attitude towards safety and occupational health could improve. The mode of training of the mechanics also influenced their safety practices: those who had formal training had relatively good safety practices. Finally, the government at all levels should pay attention to technical schools to revitalize existing ones and build standard ones with adequate human resources to meet the gap in training of automobile artisans in southwest Nigeria.

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