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Occupational Morbidities and Health-Seeking Behavior among Automobile Mechanics in the Western Region of Nigeria

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ABSTRACT

Background: Automobile mechanic work is associated with illnesses and injuries. These occupational diseases can result in sickness absence, economic loss, disability, or death of these workers. This study assessed self-reported health problems and health-seeking behavior of automobile mechanics in Surulere, Lagos State.

Methods: A cross-sectional study was used in this study carried out in December 2014. A systematic sampling method was employed to select 120 respondents from various workshops within their Local Government Area and were interviewed using a structured questionnaire. Data entry and analysis were done using epi-info3.5.1

Results: About 27.5% of the respondents reported at least one work-related illness or injury. Five percent of the respondents had musculoskeletal disease. About 11.5% of the respondents reported having cuts and crushing injuries. Most (86.7%) of these workers do not have health workers available around their workplaces. Slightly less than half (48.3%) visit health facilities between 6 to 15 minutes of estimated walking distance. Most (70%) respondents visit health facilities when ill or injured; 33.3% patronize traditional healers/ herbs/ prayer houses (spiritualists); 25% patronize patent medicine vendors and practice self-medication. The level of education of the workers was inversely significantly associated with the occurrence of occupational injury or illness.

Conclusion: High work-related morbidities were managed by a few available health workers who were majoring in the patent medicine vendor category. The importance of level of education in the control of workplace injuries and illnesses was demonstrated by this study.

Keywords: Automobile mechanic, health-seeking behavior, occupational morbidities

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Introduction

Automobile mechanics are artisans who repair a motor vehicle, their system, or parts. They are popularly known as 'roadside mechanics' because they ply their trade in workshops located along the motorways (1). They are exposed to a variety of occupational hazards with untoward health effects or injuries. These hazards are either ergonomic, physical, chemical, biological, or psychosocial. Globally, ILO estimated that of the 2.7 billion workers, 2 million die annually from occupational diseases and injuries (1, 2).

Every worker responds to these health risks or illnesses differently: any action or inaction undertaken by these workers who perceive themselves to have a health problem for finding an appropriate remedy is known as health-seeking behavior or illness behavior. Places where remedies are sought after include hospitals, traditional/herbal medicine/spiritualists, and pharmacy/patent medicine stores. Health-seeking behavior is influenced by many factors including the cost of treatment, long waiting time, perception of minor illness, and distance of health facility (3-7).

Existing evidence revealed that developed countries like the United States and Norway had leading injuries or illnesses among mechanics as sprains and strains, cuts, lacerations, punctures, bruises, and contusions, contact with objects or equipment, overexertion, and respiratory diseases (2, 8).

In congruent with the developed countries, though in higher proportion, developing countries like India and Nigeria reported a high prevalence of musculoskeletal injuries such as cuts, piercing objects, burns and bruises mostly affecting the hands. Respiratory problems, eye problems, and skin related were also reported (9, 10).

In a developing country like Nigeria, automobile mechanics belong to the informal sector of the economy (1, 10). These occupational diseases can result in sickness absence, economic loss, disability, or death. A study carried out in Northern Nigeria revealed that most mechanics earn between 1000-3000 naira per day which will be lost if this worker is absent from work (1).

Most of these workers are either self-employed or belong to a small-scale industry where the occupational problems of these workers are not documented (1, 10). Governmental and regulatory agencies' efforts have had a minimal impact so far in meeting the health, welfare, and safety needs of these workers; data is needed for evidence-based planning by policymakers for the provision of occupational health service in both preventive and curative dimensions as well as integrating such services into existing facilities (11).

This study aims to assess the occupational morbidities and health-seeking behavior of automobile mechanics in the Western region of Nigeria.

Methods

Study area: The study was carried out in Surulere Local Government of Lagos State. Lagos had a population of 9,113, 605 people in 2006. At a growth rate of 6% Lagos was estimated to have 30.2 million people by 2020 Lagos (11). A study of a monthly variation in road traffic accidents at selected local governments over three decades reported 40.8%, 34.7%, and 24.5% as minor, moderate, and fatal accident cases respectively (12). Lagos is among the States in Nigeria with the highest rates of accidents contributing significantly to the burden of morbidity and disability among motorists (13).

***Study design*:** This was a cross-sectional study carried out among automobile mechanics in southern Nigeria in 2014.

***Study population*:** Automobile mechanics in Surulere Local Government Area of Lagos State. All cadres of automobile mechanics were included in the study.

***Sample size determination*:** The minimum sample size was estimated using the Cochran formula for cross-sectional studies at a 5% error margin and 95% confidence interval. The formula for the finite population correction factor was applied since the study population was less than 10,000. The minimum sample size for this

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study was 120.

***Sampling method*:** Systematic random sampling was used to select workshops and the respondents interviewed. All cadres of automobile mechanics were included in the study. All unregistered or too ill to participate in automobile mechanics were excluded from this study. The first workshop was selected by simple random sampling by balloting of the first two workshops. Alternative workshops were selected and all those working at the place were interviewed. A total of 120 registered consenting automobile mechanics were included in this study.

Data collection tool and technique

Data collection was done principal investigator and two other assistants. A structured, interviewer-administered questionnaire adapted from previous studies was used for data collection (10,15–23) The instrument was pretested and validated among 10 automobile mechanics working at Mushin Local Government Area after which adjustment was made to the tool.

Data analysis

The data was cleaned and analyzed using Epi-info version 3.5.1 software. Quantitative variables and categorical variables were analyzed as summarized as range, mean and standard deviation, and frequencies and percentages respectively. The chi-square test and t-test were used to test associations between categorical variables and continuous variables respectively. Significant associations were determined by P value < 0.05.

Ethical considerations

Approval for the study was obtained from the Health Research and Ethical Committee (HREC) of Lagos University Teaching Hospital, Lagos. Permission was subsequently obtained from the Nigerian Automobile Technician Association (NATA) Lagos State chapter. Informed written consent was obtained from participants. Confidentiality of participants' information was maintained.

Results

The socio-demographic characteristics of the respondent are shown in Table 1. The mean age was 39.9 ± 7.7, 93.3% were married, 60% had primary education, and 69% practiced Islam faith. Most (95.8%) were Yoruba by tribe.

The majority of the respondents 64 (53.3%) were within the age group 35 to 44 with a mean age of 39.9 ± 7.5 years. The age bracket was (24 to 63 years). Most of the respondents were married (93.3%), had primary education (60.0%), practiced Islam (69.0%), were Yoruba by tribe (95.8%), and earned between less than 2500 naira daily 66 (55.0%) with mean daily income at 2554.1 ± 1319.1 naira.

Most of the respondents were engine mechanics 47 (39.2%), practiced full time 118 (98.3%), trained by apprenticeship 115 (95.8%) had less than 6 years of training 65 (54.20%), had more than 20 years of working experience 33 (27.5%) with mean working experience of 14.3 ± 7.4 and work more than 8 hours daily 85 (70.8%). work characteristics of the workers were majority job categories as engine mechanics.

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Table 1. The socio-demographic characteristics of the respondents

Socio-demographic characteristics	Frequency (n = 120)
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 age ± SD	**39.9 ± 7.7**
Marital status	
Single	8 (6.7)
Married	112 (93.3)
Educational status	
No formal education	7 (5.8)
Primary	72 (60.0)
Secondary	37 (30.8)
Tertiary	4 (3.3)
Religion	
Christianity	51 (42.5)
Islam	69 (57.5)
Ethnicity	
Yoruba	115 (95.8)
Igbo	4 (3.3)
Others	1 (0.8)
Estimated daily income(naira)	
< 2500	66 (55.0)
2500-4999	40 (33.3)
> 5000	14 (11.7)
Mean ± SD 2554.1 ± 1319.1	

Table 2. Work-related characteristics of the respondents

Work-related characteristics	Frequency (%) (n = 120)
Job category	
Engine mechanic	47 (39.2)
Spray painter	33 (27.5)
Auto-electrician	17 (14.2)
Panel beater	21 (17.5)
Air conditioning repairer	2 (1.7)
Nature of job	
Fulltime	118 (98.3)
Parttime	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**

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Table 3. Occupational health history of respondents

Occupational Health history of respondents	Frequency (%) (n = 120)
Morbidity pattern in the last 6 months	
Had illness/injury	33 (27.5)
Had no illness/injury	87 (72.5)
Illness pattern in the last 6months**	
Musculoskeletal disease	6 (5.0)
Asthma	1 (0.8)
Injuries in the last 6months**	
Cut	14 (11.7)
Burns	7 (5.8)
Crushed finger	14 (11.7)
Fracture	1 (0.8)
Health personnel available at workshop**	
Nurses	1 (0.8)
Patent medicine vendor	9 (7.5)
Traditional healer	1 (0.8)
Informal first aider	5 (4.2)
None	104 (86.7)
Health facility accessible to workers**	
Private clinic	58 (48.3)
Public hospital	36 (30.0)
Chemist store	30 (25.0)
Estimated walking distance of the nearest health facility from the workshop(minutes)	
< 5	35 (29.2)
6 – 15	55 (45.8)
16 – 30	23 (19.2)
31 – 60	7 (5.8)
Mean ± SD	**15.1±13.5**

****** Multiple responses allowed

Only 33(27.5%) of the respondents reported had taken ill or injured 6 months before they were interviewed. Only 6(5%) of those who reported being ill or injured experienced musculoskeletal disease while 14 (11.7%) reported to have had Cut and another (11.7%) had crushed digits. Most of the respondents patronized patent medicine vendors (7.5%), and private clinics (48.3%) which were between 6 to 15 minutes of estimated walking distances.

Most (70%) of respondents visit health facilities when ill or injured followed by chemists and the use of herbs. Only 0.8% visit a traditional healer in the situation earlier mentioned. (Figure 1)

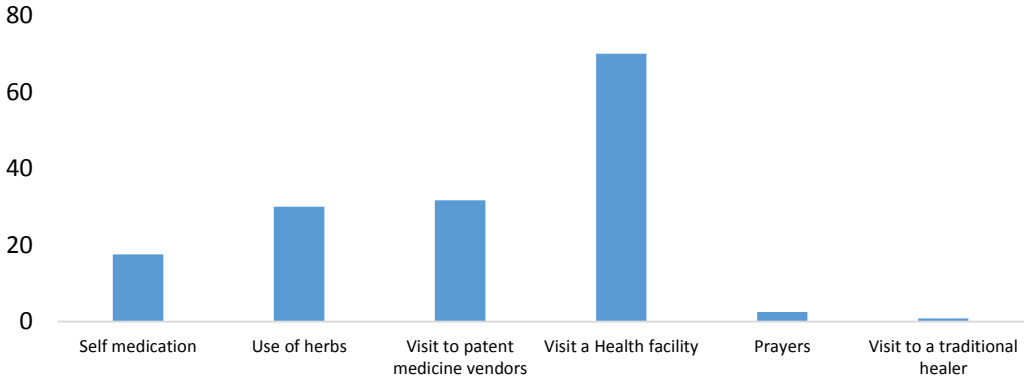

Figure 1. Actions taken by respondents when ill or injured at work

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The level of education of the respondents was indirectly associated with the prevalence of occurrence of injury among respondents and this was statistically significant ($p < 0.05$).

Table 4. Association between socio-demographics/occupational history and occurrence of illness or injury in the last six months

variable	Occurrence of Injury or Illness		X^2	df	P-value
	No (%)	*Yes (%)*			
Age group					
< 35	19 (76.0)	6 (24.0)			
35-44	44 (68.8)	20 (31.8)	0.98	2	0.612
> 44	24 (77.4)	7 (22.6)			
Level of education					
No formal education	3 (42.9)	4 (57.1)			
Primary education	50 (69.4)	22 (30.6)	8.06	3	0.028**
Secondary education	32 (86.5)	5 (13.5)			
Tertiary education	2 (50.0)	2 (50.0)			
Mode of training					
Apprenticeship	84 (73.0)	31 (27.0)			
Formal mechanic school	3 (60.0)	2 (40.0)	0.42		0.615**
Duration of training (years)					
0-6	46 (70.8)	19 (29.2)			
> 6	41 (74.3)	14 (25.5)	0.213		0.644
Working experience (years)					
0-4	6 (66.7)	3 (33.3)			
5-9	20 (83.3)	4 (16.7)			
10-14	18 (64.3)	18 (33.7)	2.8991	4	0.560**
15-19	20 (76.9)	6 (23.1)			
20 and above	23 (69.7)	10 (30.0)			

** Fisher exact

Discussion

The study demonstrated that most of the respondents were within the 35 to 39 age group with a mean age of 39.9 ± 7.5 years. These findings were similar to a study carried out among automobile mechanics in Kaduna State in Northern Nigeria (20). In Kaduna, the study population had an age mean age of 35.7 and a standard deviation of 8.4 (20). Another study done among welders in Ile-Ife, Osun State of Nigeria also revealed a mean age of 39 and a standard deviation of 13 which is very close to what was obtained in Surulere, Lagos (18). These findings supported the fact that mechanics and artisans engaged in this occupation are predominantly in their youthful and economically productive age group (21). In the study carried out in Surulere Local Government Area, 93.3% were married. Another study in Kaduna reported that 63.3% of welders were married (20). This showed that this occupation allowed these workers to meet their social needs and responsibilities. In this study, the respondents were all male; however, the study carried out in Ile-Ife, Nigeria among welders reported that 0.7% of the respondents were females, this showed that females were beginning to identify with mechanic work as a source of income (18). Notwithstanding there was still a gender predisposition towards this particular occupation probably because it is physically demanding and a bit hazardous (22).

Most of the respondents in Surulere were predominantly Yoruba by tribe, the predominant tribe in Lagos. This was corroborated by the study done in Kaduna Nigeria (20), surprisingly a northern State in Nigeria; this showed that young men travel far from their villages to learn and work as automobile mechanics in various cities.

The majority of the respondents in Surulere were literate. This revealed that most auto-

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mechanics can read and write and hence contribute meaningfully to the growth of the Nigerian economy. Corroborating this finding, a study done in western India discovered that 86% of its respondents were literate (15). The study done in Surulere showed that 30.8% of respondents had completed their secondary education. this finding was similar to the study done in Southern India where only 22.6% of the 106 automobile repair workers had completed their secondary education (15). A very high level of educational background was discovered in the study carried out in Ile-Ife where most of the respondents had completed their secondary education (18). In Nepal, a study corroborated this evidence by the report that the majority of the respondents of welders were literate (17). Slightly more than half of the respondents in this study earn between about 2000 naira daily. This is in contrast to the Zaria study where respondents earn between 500 to 1000 naira daily (1). Inflation explains this difference.

About half of the respondents were engine mechanics. This is slightly similar to the Western Indian study which reported that 34% of respondents were involved in automobile repairs. The study also revealed that 11% were spray painters of vehicles which is different from Surulere's work which had 27.5% (9). In contrast to these findings, a southern Indian study revealed that 84.9% of the respondents were general mechanic workers while the remaining workers specialized in various specific works such as radiator servicing, and painting among others (15). The study done in Kaduna reported that 44.5% of respondents were general vehicle repairers while 26.5% were motor engine mechanics (20). It is possible the general engine repairers had more customers and hence more income than other cadre of automobile mechanics. The majority (98.3%) of respondents were full-time workers: Zaria's study gave a similar report (20).

In this study carried out in Surulere, almost all automobile mechanics were trained by apprenticeship. It was obvious that automobile mechanics were trained by friends or co-workers without formal training or certification: this might hinder standardization and quality control of practice among these workers. This was very similar to the study carried out in south India which revealed that very few respondents had formal training or certification and that the majority of these trained respondents were trained through apprenticeship by senior co-workers (13). The study done in Kaduna corroborated this by the report that 91.3% of the welders sampled were trained by apprenticeship (20). About 54.2% of respondents in Surulere were trained for 6 years with a mean duration of 6.5 ± 2.2 years. A great discrepancy was reported in the study carried out among auto-mechanics in Zaria where 28% of the sampled workers were trained for more than 6 years (1). More than 50% of welders sampled in Kaduna were trained between 2 to 3 years (20).

The study done is Surulere showed that 72.5% of the respondents had more than 10 years of working experience with a mean of 14.3 ± 7 years. The study done in western India contrasted this evidence by the report that only 47% had more than 10 years of working experience (9). The study done in Karnataka in southwest India among cashew factory workers showed that 70% of the workers had more than 5 years of working experience (23). In Nepal, a contrast occurred where only 16.3% had more than 10 years of working experience (17). This contrast could be a result of the demographic structure of the society where these studies were carried out.

In this study carried out in Surulere, only 27.5% of the respondents had reported work-related illness or injury before the study. Specifically, 11.5% had reported having cuts 6 months before the study. The study carried out in Zaria, Kaduna State of northern Nigeria revealed that 59% of the roadside automobile workers self-reported having sustained cuts at the workplace (1). Another study carried out in Kaduna among welders reported that 38.0% of the respondents had reported cuts or other injuries at the workplace which is relatively similar to the above-stated values (20).

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Other findings related to occupational health-related injuries and illness reported by the respondents in Surulere were crushed finger (11.5%), burns (5.8%) musculoskeletal disease (5%), fracture (0.8%), and asthma (0.8%) all for 6 months before this study. This is similar to that carried out in Kaduna among welders which reported burns (14%), and fractures (4%) from the preceding year to the time of the study (20). The study carried out among roadside mechanics in Zaria reported burns (86%), bruises (64.5%), crushed fingers (62%), and body pains. In the Western Indian study, 20% of the respondents self-reported respiratory problems, 16% reported eye problems and 8% claimed they had skin-related problems for 6 months before the time the study was carried out (1). The occurrence of diseases even at the workplace is associated with both external work-related factors and intrinsic workers' predispositions. This might explain the difference in the occurrence of diseases and injuries among these workers. Another reason that might explain the contrasting finding was the fear of incurring illness or diseases by negative confession.

In Surulere, the level of education was statistically significant in association with the occurrence of illness or injury at work in an indirect relationship. Respondents with a tertiary level of education had reduced episodes of work-related injury or illness. This finding corroborated the fact that socio-demographic profiles of workers are determinants of the occurrence of injury or illness among automobile repair workers.

This study revealed that the hazards these automobile mechanics are exposed to put them at risk of increasing morbidity patterns. Even though a large proportion of the respondents visited a health facility following an illness/injury, a significant number of respondents still self-medicated, took herbs, and visited patent medicine vendors. The statistically significant association between the level of education and the occurrence of injuries/illness reiterates the importance of appropriate certification and training in reducing morbidity patterns. In this study, 27.5% of the respondents had reported work-related injury/illness in the past 6 months. A major proportion of the respondents in this study had their highest level of education at the primary school level and received their training from friends/family who may or may not have had an ideal certification or training as well.

The limitation of this study includes occasional interruption of interviews of workers since the process took place during working hours at their various workshops. The ability of the respondents to recall events may also be a limitation.

Conclusion

This study was aimed at identifying morbidity patterns and health-seeking behaviors among automobile mechanics. The findings from this study revealed that 27.5% of the respondents had reported morbidity patterns within the past six months; 70% of respondents visited health facility when ill or injured; 33.3% patronized traditional healers/herbs/prayer houses (spiritualist) while 25% patronize patent medicine vendors and practice self-medication.

The statistically significant association between the level of education and the occurrence of injuries/illness reiterates the importance of appropriate certification and training in reducing morbidity patterns.

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Conflict of interest

The author declares no conflict of interest.

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Ethical considerations

The study was approved by the health research ethics committee of Lagos University of Teaching Hospital (ADM/DCST/HREC/APP/2111). Written informed consent was obtained from all the

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participants on the first page of the questionnaire.

Code of ethics

ADM/DCST/HREC/APP/2111

Authors contribution

The Author conceptualized and conducted of the study including data collection, analysis, review of literature, and manuscript preparation.

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