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Willingness and Compliance on the Use of Safety Protective Clothing by Road Cleaners in Samaru and Sabon-Gari Areas of Kaduna, North-Western Nigeria

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Abstract

The study investigated the willingness and compliance on the use of safety protective clothing by road cleaners in Samaru and Sabon-Gari areas of Kaduna, North-West Nigeria. Specifically, the study determined indicators of road cleaners' willingness to use protective clothing and indicators of road cleaners' willingness to comply with instructions of usage/wearing of protective clothing. Two research questions and one hypothesis was tested in this study. The study adopted the descriptive survey research design. The population for the study was two hundred and seven road cleaners assigned to the study area. Random-convenience sampling was used to select 80 road cleaners from the population. Data was collected using a questionnaire and was analysed using mean. The benchmark for acceptance was 2.50. The grand mean of the results in the Tables 1 and 2 were 2.54 and 2.56 respectively. The findings of the study revealed that majority of the road cleaners were willing to use the safety protective clothing but they were unwilling to comply with the usage/wearing instructions. The hypothesis test revealed that willingness to use had a negatively weak relationship with willingness to comply with usage instructions ($r = -0.311$, $P< 0.000$). The study therefore among others recommended that supervisors of road cleaners should not only be concerned about the quality of work done by the road cleaners but should also monitor their compliance to usage instructions of their protective clothing.

Keywords: Road Cleaners, Safety Protective Clothing, Willingness, Compliance, Use

Introduction

In Nigeria, the problem of environmental sanitation plagued every state leading to the launching of programmes and projects aimed at keeping the states clean. Every state in Nigeria including Kaduna state launched one programme or the other aimed at keeping their states clean. Residents of communities were tasked to keep their communities clean on pre-defined dates while the government take responsibility for the main roads. The government employed some group

of people to keep the roads clean on a daily basis. This group of people are popularly referred to as Road cleaners.

Road Cleaners are individuals employed and paid to sweep the streets and collect garbage for disposal in appropriate dumpsites. Their major responsibility is to keep the streets linking major roads free from dirt, dust and garbage. They clean the streets linked to roads where vehicles ply daily (Firdausi and Ahmad 2010).

The roads are majorly Trunk B (state constructed) and Trunk C (local government constructed) roads. They clean the roads and the drainages attached to them. Majority of these road cleaners usually start their work as early as 4:30am before most road users' start trooping into the roads and making the road cleaners' job more cumbersome. Their major tools are brooms (long and short), ricks, packers, spades wastebaskets for the collection of whatever has been gathered for onward disposal to the dumpsites. The also work on the removal of debris from streets, collecting solid waste, disposing and recycling waste material (Kabir, Farhana, Akter, Jesmin and Ali 2015).

Alega (2017) posits that road cleaning can lead to improvements in the environmental conditions of major roads by preventing pollutants deposited on streets from being littered around to the extent that they obstruct movement of people and goods. The main responsibility of road cleaners is to ensure that all major roads and their adjoining streets. The dirts on the roads are usually a result of indiscriminate and improper disposal of refuse by residents of the community. Many road users deliberately dispose wastes through the windows of their vehicles thereby creating a continuous need to clean the roads. This contributes to environmental pollution and creates various health problems (McKinley, 2017).

Road cleaners contracted to clean up the mess created by refuse on major roads. In the discharge of their duties road cleaners are exposed to germs due to the refuse or wastes they are exposed to daily. These wastes are hazardous to their health (Garrido, Bittner, Harth and Preisser 2015). Pintakham and Siriwong (2015) identified these hazards as physiological, chemical, biological, and psychological and ergronomical in nature.

Patil and Kamble (2017) discovered that these hazards could have short and long-term effect such as allergies, cold and cough, Asthma and bronchitis, hearing disorder, malaria, typhoid, fever, vomiting after completion of work. They further asserted that road cleaners during work could have problems such as musculoskeletal symptoms (low back pain, elbow and wrist pain), respiratory symptoms (cough, phlegm, asphyxiate and wheezing), dermatological symptoms (itching and rashes), headache and gastrointestinal symptoms (nausea and diarrhoea). The effect of these hazards can be reduced with safety protective clothing (Niu, 2010).

Safety protective clothing refers to clothing designed to protect the wearers

from workplace hazards such as heat, chemical and infection (University of Western Australia, 2018). They belong to a group of items called Personal Protective Equipment (PPE). Safety protective clothing can be categorised based on the type of protection afforded by the clothing. They are

i. Respiratory protection - air line, half or full face mask
ii. Eye protection – spectacles/goggles, shields, visors
iii. Hearing protection – ear muffs and plugs
iv. Hand protection – gloves and barrier creams
v. Foot protection – helmets, caps, hoods, hats
vi. Skin protection – hats, sunburn cream, long sleeved, coveralls, leather jackets, trousers and spats, thermal and cold protective clothing (Apparel Search Company, 2018: State Government of Victoria 2018).

According to Safety and Health for field operations, Handbook (2014) employees should be assigned PPE according to their job requirements. It is expected that PPE must be made using job hazard analysis to determine the hazards that are present or may be present during certain conditions and the protective controls that are to be used. Workers who work in very hazardous conditions are required according to industrial safety standards to wear overall, rain boats, gloves and mouth and noise protective gears against inhaling dust and other harmful substances (Smith & Brass 2015).

Unfortunately, the increase in the number of road cleaners has been accompanied by increased levels of high-risk behaviour of not complying with safety regulations of wearing the provided clothing and other gears before embarking on the daily job; as a result, they have come under heavy flak culminating in legislation regarding its use in some cities. (Oginni, Ugboko & Adewole, 2005).

Most of the road cleaners have no formal training in the art of industrial and safety standards. In some parts of Nigeria, road cleaners make their debut after a few hours of training session. The road cleaners has an eight-fold risk of dying, a four-fold risk of injury and a two-fold risk of being ran over by motorist who cannot identify the road cleaners and because of non-challant attitude of not wearing the uniform or right protective gears so as to be easily identified by other road users.

However, it is sad and worrisome that despite the high levels of accidents amongst road cleaners the use of safety protective clothing in Nigeria is way on the low side. Most of the road cleaners are aware and have the knowledge of the importance of wearing protective clothing but they always turn a blind eye towards making effective usage of such. Some perceive themselves as being naturally immune to the hazards of road cleaning thus fuelling their reluctance to use safety protective clothing.

Previous researches carried out by Auler, Nakashima and Cuman (2014); revealed that construction sites workers

and road cleaners alike have a rather cavalier attitude towards protective clothing, but even more worryingly, that little is being done in terms of training or educating them to rectify this situation. Some health and safety managers interviewed admitted to lack of knowledge about different safety protective clothing and product specification for their workers and working place, while they also had concerns about how to deal with unknown or unpredictable hazards (Ewis, Rahma, Mohamed, Hifnawy and Arafa 2013).

In the study area, many road cleaners are usually seen using some of their safety protective clothing while some do not use at all. A close interaction of the researcher with one of their supervisors revealed that the safety protective clothing are usually provided for the road cleaners but they do not enforce the usage or compliance with usage instructions. The study area is densely populated with high presence of refuse littered on the streets and roads. The heavy presence of dust during the dry-harmattan season also necessitate the need to use safety protective clothing by the road cleaners. This necessitates the need to investigate the willingness and compliance on the use of safety protective clothing by road cleaners in Samaru and Sabon-gari areas of Kaduna state, North-western Nigeria.

Purpose of the study

The general purpose of this study was to investigate willingness and compliance on the use of safety protective clothing by road cleaners in Samaru and Sabon-gari areas of Kaduna state, North-western Nigeria. Specifically this study determined:

i. indicators of road cleaners' willingness to use personal protective clothing in Samaru and Sabon-gari areas of Kaduna State, North-western Nigeria
ii. indicators of road cleaners' willingness to comply with instructions of usage/wearing of personal protective clothing in Samaru and Sabon-gari areas of Kaduna State, North-western Nigeria.

Research Questions

The following research questions were raised to give answers to the above objectives

i. What are the indicators of road cleaners' willingness to use protective clothing in Samaru and Sabon-gari areas of Kaduna state, North-western Nigeria?
ii. What are the indicators of road cleaners' willingness to comply with instructions of using safety and protective clothing in Samaru and Sabon-gari areas of Kaduna state, North-western Nigeria?

Research Hypothesis

This null hypothesis was formulated and tested in this study.

Ho1 There is no significant relationship between the road cleaners' willingness to use and willingness to comply with the usage instructions of safety

protective clothing in Samaru and Sabon-gari areas of Kaduna, North-western Nigeria.

Methodology

***Area of Study*:** Sabon-gari and Samaru are metropolitan cities of Kaduna state. Sabon-gari is the economic hub of Zaria metropolis as a whole, while Samaru is the seat of the Ahmadu Bello University. These areas have a good network of roads and educational institutions as well as health facilities that generate many wastes, which most times are not properly disposed, thus necessitating the services of road cleaners**.**

***Design*:** Descriptive survey research design was used for the study

Population of the Study: The total population for the study consisted of 207 road cleaners combined from Sabon-Gari and Samaru areas (Source: Sabon-gari Local government authority). The population consisted of men and women, within the age range of 25 – 50 years of age. Majority of the population were primary school, Quranic schools and secondary school certificate holders.

Sample: The study adopted the random convenience sampling technique, which was used to select respondents that were available when the researcher and their supervisors wanted to administer the instrument. The sample consisted of 30 men and 50 women.

Instrument for Data Collection: Questionnaire was used for data collection. The validity of the instrument was established by three experts, which included two Home Economics lecturers and one safety officer in a tertiary institution. The Cronbach's alpha was used to test the reliability. The reliability co-efficient of 0.72 and was considered high enough and reliable to be used for the study. The questionnaire was based on a 4-point scale and contained two sections. Section A contained the biodata; section B contained items on the willingness to use protective clothing while section C contained items on the willingness to comply with the instructions of usage of protective clothing. The instrument was adapted from Mitchual1, Donkoh and Bih (2015) questionnaire on Awareness and Willingness to Utilize Health and Safety Measures among Woodworkers of a Timber Processing Firm in Ghana

Data Collection Technique:Ninety copies of the questionnaire was administered to the respondents with the help of five supervisors that were responsible for monitoring the road cleaners in the area of study. Eighty-one copies were returned. The data was collected over a period of five days.

Data Analysis Method:Mean was used to analyze and answer the research questions. For section B and C, mean of 2.50 and above signified willing to use while mean of 2.49 and below shows unwilling to use. In section C, mean of 2.50 and above signified unwilling to comply while mean of 2.49 and below indicated willing to comply. Pearson product moment correlation (PPMC) was used to test the hypothesis at 0.05 level of significance.

Findings of the Study

Table 1: Mean Ratings on Willingness to wear Safety Protective Devices among Road cleaners

S/N	Items	Mean	Remark
1.	I am willing to use the safety protective clothing because of the recognition attached to the wears by my employers.	2.55	Willing to use
2	I am willing to use the safety protective clothing because they are useful in protecting me from work hazards.	2.64	Willing to use
3	I am willing to the safety protective clothing because of the recognition attached to the wears.	2.51	Willing to use
4	I am willing to use protective eyes goggle while on duty as part of my work requirements.	2.57	Willing to use
5	I am willing to use overall jacket while on duty	2.53	Willing to use
6.	I am willing to use mouth and nose protective cover while on duty	2.67	Willing to use
7.	I am willing to use gloves to handle liquid and solid wastes to protect myself from germs	2.50	Willing to use
8.	I am willing to use protective shoes while on duty	2.50	Willing to use
	Grand Mean	2.56	Willing to use

Source: Field Survey, 2018

The result in Table 1 indicated that majority of the respondents were willing to use safety protective clothing such as goggle, overall jacket, mouth and nose cover, hand gloves and protective shoes. The grand mean of 2.56 showed the overall willingness to use safety protective clothing by the road cleaners. The positive response to items 1, 2 and 3 showed that the respondents knew the function and importance attached to the safety protective clothing.

Table 2: Mean Ratings on willingness to comply with safety protective devices by Road Cleaners

S/N	Items	Mean Score	Remark
1	I avoid wearing the safety protective clothing because of the recognition attached to the wears	2.50	Unwilling to comply
2	I avoid wearing the safety protective clothing because of my religious beliefs.	2.52	Unwilling to comply
3	I avoid wearing safety protective clothing because it can affect my social acceptance.	2.52	Unwilling to comply
4	I avoid wearing protective eyes goggle because it makes me look like a clown	2.48	Willing to comply
5	I avoid wearing overall jacket while on duty because of the prevailing weather conditions	2.91	Unwilling to comply

6.	I avoid wearing mouth and nose protective cover while on duty because it is not comfortable.	2.24	Willing to comply
7.	I avoid wearing gloves only on the active hand to handle liquid and solid wastes because it affects my grip of objects.	2.61	Unwilling to comply
8	I avoid wearing protective shoes while on duty because they slows my mobility.	2.50	Unwilling to comply
	Grand Mean	2.54	Unwilling to comply

Source: Field Survey, 2018

The result in Table 2 indicated that majority of the respondents were unwilling to comply with the usage instructions of safety protective clothing such as shoes, hand gloves and overall jacket. While they showed willingness to comply with the use of safety protective clothing in items 4 and 6. Generally, the road cleaners were unwilling to comply with the usage instructions of the safety protective clothing as reflected in the grand mean of 2.54.

Test of Hypothesis

Ho1 There is no significant relationship between the road cleaners' willingness to use and willingness to comply with the usage instructions of safety protective clothing in Samaru and Sabon-gari areas of Kaduna, North-western Nigeria.

Table 3: Pearson Product Moment Correlation on the relationship between the road cleaners' willingness to use and willingness to comply with the usage instructions of safety protective clothing in Samaru and Sabon-gari areas of Kaduna, Northwestern Nigeria.

Variables	N	Mean	S. D	r	P-value
Willingness to use	80	2.56	.62	.-311**	.000
Willingness to comply	80	2.54	.50		

**Correlation is significant at the 0.05 level (2-tailed).

The result in Table 3 showed that the road cleaners willingness to use had a negatively weak relationship with willingness to comply with usage instructions of in Samaru and Sabon-gari areas of Kaduna, Northwestern Nigeria ($r= 0.311$, $P<0.000$). This implied that the safety protective clothing road cleaners' willingness to use does influence their willingness to comply with usage instructions of the safety protective clothing. Therefore, the hypothesis which states that there is no significant relationship between the road cleaners' willingness to use and willingness to comply with the usage instructions of safety protective clothing in Samaru and

Sabon-gari areas of Kaduna, North-western Nigeria is hereby rejected.

Discussion of Findings

The findings in table 1 showed the responses on the indicators of willingness to use protective devices. It was revealed that the majority of the road cleaners were willing to use items all the safety protective clothing. This was in not in agreement with the findings of Patil and Kamble (2017) who discovered that all street sweepers were provided with personal protective equipment but some of them were reluctant use it.

The result in Table 1 showed that road cleaners were willing to use safety protective clothing for identification during work hours. This was in agreement with the findings of Sultania and Tania (2016) who discovered that many road cleaners were willing to comply with wearing of safety and protective clothing to aid their identification when working as their uniforms were mostly made of colours like bright yellow, green.

The respondents also avoided using the shoes provided for them because they felt they affect mobility at work. Studies by Nku, Peters, Eshiet, Oku and Osim (2005); Salmah (2016) ascribed the unwillingness and non-usage of safety protective clothing by the road cleaners to the fact that the some clothing poses a physiological threat to the users because they are uncomfortable in them and they do not support mobility, which is very important in their work.

Although the road cleaners were aware of the function and importance attached to the use of safety protective clothing, many are unwilling to comply with usage instructions of the safety protective clothing. Similar studies by Oginni, Ugboko and Adewole (2005); Kabir, Farhana, Akter, Jesmin and Ali (2015); O'Hara, Yassi, Bryce, and. Van Rosenburg (2017) discovered that many road cleaners were unwilling to use safety protective clothing because they felt they have become immune to diseases that can result from their refusal to use the required clothing. Also in Table 2, it was shown that the respondents were unwilling to comply with usage instructions of overall jacket, hand gloves and protective shoes.

In Table 1, the responses to items 1, 2, 3 and 4 showed that many of the road cleaners knew the function and importance attached to the use of safety protective clothing, they still showed an overall unwillingness to comply with usage instructions as shown in the grand mean of 2.54 in Table 2. This was in agreement with studies by Bleck and Wettberg (2012); Masoud, Majid, and Jafar (2011); Walley and Wright (2010) who discovered that many road cleaners knew the importance of safety protective clothing but they lack in-depth understanding of the hazards with their job, else they would willingly comply with the usage instructions of the safety protective clothing provided for them.

In Table 3, it was shown that there is no significant relationship between the

road cleaners' willingness to use and willingness to comply with the usage instructions of safety protective clothing in Samaru and Sabon-gari areas of Kaduna, North-western Nigeria. This is because many of the road cleaners know that use of safety protective clothing is part of their work requirements but do not have an in-depth knowledge of what they benefit from complying with usage instructions, which is meant to protect them from work hazards.

Conclusion

The use of safety protective clothing is important for all types of jobs especially the ones that involve risks or poses a danger to the worker. Road cleaning is one of the jobs that involve hazards to the worker. Based on the findings of this study, it was established that majority of the Road cleaners were willing to use all the safety protective clothing but unwilling to comply with their usage instructions. The road cleaners know the function and importance of the safety protective clothing but lack in-depth understanding of the risks involved which ultimately results in their unwillingness to comply with usage instructions.

Recommendations

Based on the findings of this study, the following recommendations were made.

- Supervisors of Road cleaners should not only be concerned about the quality of work done by the road cleaners but should also monitor their full compliance to usage of safety protective instructions.
- Incentives should be provided to Road cleaners that fully comply with the usage instructions of their safety protective clothing.
- The safety protective clothing given to road cleaners should be designed in such a way that it will aid mobility, as this will make them willing to comply with usage instructions.
- Workshops and trainings should be organized to further educate road cleaners on the benefits of using safety protective clothing during work hours.

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