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ASSESSMENT OF ATTITUDE OF SAFETY MEASURES AMONG WASTE COLLECTORS IN KATSINA STATE, NIGERIA

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Abstract

This study titled Attitude of Safety Measures among Waste Collectors in Katsina State, Nigeria employed ex–post facto research design to assess the attitude of safety measures among waste collectors in Katsina State, Nigeria. The availability and appropriate use of Personal Protective Equipment (PPE) by waste collectors go a long way in ensuring safety while at work. Several pieces of evidences have shown how waste collectors are at a greater risk of contracting diseases and sustaining injuries. About 85% of waste collectors in developing countries including Nigeria do not have occupational health, safety and welfare which are aimed at protecting the collectors. A Multi-stage Sampling Technique that involves Stratified Sampling, Simple Random Sampling, Proportionate Sampling and Systemic Sampling Technique was used for this study. The instrument for data collection was a close-ended structured questionnaire containing sections A, B, C and D with a modified four-point Likert scale. The sample size for the study was 400 out of which 390 copies were valid and used for the analyses. Data collected was analyzed by Mean and Standard Deviations (SD) to answer the stated research questions. One sample t-test was used to test the hypothesis at a 0.05 alpha level of significance. Hence, the mean score of any response was considered positive, if it is 2.5 and above and the mean score of any response less than 2.5 is regarded as a negative score. The result obtained revealed that waste collectors in Katsina State have a positive attitude toward safety measures. Based on the findings of the study, it was concluded that waste collectors have a good attitude toward safety measures in Katsina State. It was recommended that Waste Collectors in Katsina State should be encouraged by government and health agencies on how to maintain a positive attitude towards the practice of safety measures of waste collection through training, seminars and workshops.

Keywords: Attitude, Waste Collectors, Personal Protective Equipment

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Introduction

Occupational health risks are attached with the Municipal Solid Waste (MSW) management process, specifically during handling, processing, and disposal stages. The waste collectors who are regularly involved in handling waste are highly exposed to organic dust and bioaerosols which make them vulnerable to pulmonary infections such as asthma. Public waste in Nigeria is a major responsibility of State and Local government environmental agencies. The agencies are charged with the responsibility of handling, employing and disposing of waste generated. The state agencies generate funds from subvention from state governments and internally generated revenue through public waste levies, but despite all the efforts and initiatives, the management of waste continues to pose different challenges (Ogwueleka, 2014).

In Nigeria, the waste discharged for collection is seldom stored in closed containers and is dumped directly on the ground, requiring it to be shovelled by hand or left in an open carton or basket to be picked up by hand. Waste Collectors, therefore, have significantly more direct contact with solid waste than their counterparts in developed countries, which predominantly handle sealed plastic bags and covered dustbins. Managing waste in Nigeria is a problem due to many factors, including lack of adequate funding and increase population, lack of trained/ professional waste managers and lack of effective monitoring and control. Up till now, the activities of state environmental agencies have been hampered by poor funding, inadequate facilities and human resources, inappropriate resources and an inequitable taxation system. (Cointreau-Levine, 2016).

The availability and appropriate use of Personal Protective Equipment (PPE) by waste collectors go a long way in ensuring safety while at work. Several pieces of evidences have shown how waste collectors are at a greater risk of contracting diseases and sustaining injuries. About 85% of waste collectors in developing countries including Nigeria do not have occupational health, safety and welfare which are aimed at protecting the collectors. Generally, there are potential risks to human health from improper handling of wastes. These health risks can be broadly subdivided into direct and indirect effects (Harrison, 2013).

The direct health implication of indiscriminate waste disposal includes:

i. Accidental cuts, burns and occupational dermatitis (contact dermatitis) are common disorders to collectors in the field.

ii. High incidence of intestinal parasites among waste collectors. For example, the larva of hookworm (ankylostoma) enters the body through the skin of the feet resulting in the disease ankylostomiasis characterized by anaemia, fever, weakness and abdominal pain.

iii. Cut and un-bandaged wounds get infected easily if exposed to the rubbish infested areas with spores of Clostridium tetani and this could cause tetanus infection.

In Nigeria, the solid waste problem started with urban growth, resulting from the national increase in population and more importantly from immigration. As such, waste management becomes as important as water and electricity or the provision of other infrastructural facilities within the society (Ogadimma, 2012).

Katsina State is the third-largest state in Nigeria with a population of over 7 million people. Out of this number, the majority of the populace resides within the three senatorial zones namely Katsina north, Katsina south and Katsina central senatorial zones (Katsina State Ministry of Health, 2014). With the increase in satellite towns and the influx of people into the state on daily basis, one major problem

confronting the metropolis is the issue of poor waste management. The fast-tracking development of Katsina state is beginning to show evidence especially in the area of quantity and quality of different types of wastes. In 2016, about 377,126 tons of solid wastes were generated in Katsina state. Most of these wastes go to roadsides, ditches, water bodies, empty plots of land, farms and uncompleted buildings. This public waste and indiscriminate indulgence of the public has been attributed to the ineffectiveness of waste management by the Government (Adamu, 2016). The Katsina State Ministry of Environment has mapped out over 111 designated dumpsites for refuse disposal (Katsina State Environmental Protection Agency, 2015).

The main purpose of the study is to assess the attitude of safety measures among waste collectors in Katsina State, Nigeria with a research question that says do waste collectors have the attitude of safety measures in Katsina State, Nigeria? While the hypothesis of the research is the attitude of safety measures among waste collectors in Katsina State is not significantly adequate.

Material and Methods

For this research, an ex –post facto research design was used. The population of the study consisted of waste collectors in Katsina State. The total number of waste collectors in the State when data for this study was collected (2020) was one thousand and fifty-nine (1,059) distributed across the three senatorial zones namely Katsina North, Katsina Central and Katsina South senatorial zones, (Katsina State Environmental Protection Agency, 2018).

The sample size for this study was 400 in line with Research Advisor (2016) that for a population of 1059, a sample size of 400 suffices at a 5% margin of error and 95% confidence interval. A Multi-stage Sampling Technique that involves Stratified Sampling, Simple Random Sampling, Proportionate Sampling and Systemic Sampling Technique was used for this study. The first stage involved the use of a stratified random sampling technique to divide the State into three (3), already existing senatorial zones, as strata namely Katsina North, Katsina Central and Katsina South. In the second stage, a simple random sampling technique was used to select five (5) local government areas each from the senatorial zone by writing all the names of the local government areas in each senatorial district on the pieces of paper, folded and dropped them inside a container and shuffled, one research assistant was asked to pick one folded piece of paper containing the name of a particular local government area (LGA). The name of the LGA on the piece of paper was written down. This process was used until the required number of local governments was recorded. The third stage involved the use of a proportionate sampling technique to obtain the number of respondents in each of the local government areas. In the fourth stage, a systematic sampling technique was used to select the respondents per local government by writing “Yes” or “No” on pieces of paper, folded and put them inside a container. A Waste Collector that picked “Yes” was used as a respondent for the study while any Waste Collector that picked “No” was not used for the study.

A close-ended questionnaire was used to collect data for this study. The instrument was based on a modified 4-point Likert Scale for the respondents to tick on every statement that suits them. To ensure the face and contents validity of the research instrument, the copies of the researcher-structured questionnaire were submitted to four (4) professional experts in the field of Health Education for vetting to ascertain its appropriateness, relevance and clarity. Their suggestions and corrections were incorporated and the final copy of the questionnaire was used for data collection. A letter of introduction was collected from the Department of Human Kinetics and Health Education, Faculty of Education, Ahmadu Bello University, Zaria by the researcher. The researcher instructed three (3) research assistants on how to distribute and retrieve the questionnaires. The researcher and the assistants visited the respective local government areas to meet the respondents and administer the questionnaires to

them. The respondents were met at their various places of work and explained the purpose of the study and the nature of the questionnaire. Upon completion, the researcher and his three (3) research assistants retrieved the copies of the questionnaires on the spot. Descriptive statistics of mean and standard deviation (SD) was used to answer the stated research question. One sample t-test was used for testing the hypothesis at a 0.05 alpha level of significance.

Results and Discussion

Research Question: Do waste collectors have an attitude toward safety measures in Katsina State of Nigeria?

Table 1: Mean score of responses on the attitude towards safety measures among waste collectors in Katsina State of Nigeria?

S/N	Statement	Mean	Std. Dev.
1	I prefer wearing safety hand gloves when working than using my bare hands	3.82	.835
2	I prefer to wear safety boots when working	2.91	.880
3	I prefer washing my hands with soap and water after work	3.30	.765
4	I like to remove all jewellery (watches, bracelets, rings and earrings) before putting on safety equipment	3.05	.942
5	I like to use a face shield whenever am at work	2.97	.850
6	I like to use examination gloves when working	2.42	.657
7	I like to use a safety plastic apron whenever am at work	2.49	.974
8	I prefer to read labels on containers of a chemical than listening to suggestions from a co-worker	3.33	.744
9	I like to use a face mask to cover my nose whenever am at work	3.17	.834
10	I prefer wearing waste safety long-sleeved shirt than using my house wears	2.28	.675
		2.974	**0.815**

(Decision mean =2.50)

Table 1 above showed the mean score of responses on the attitude towards safety measures among waste collectors in the Katsina State of Nigeria. The aggregate mean score for the table indicated the respondents have a positive attitude towards safety measures. The benchmark mean set to determine the level of such attitude is 2.50 as indicated at the bottom of the table. The aggregate mean score of the attitude towards the safety measures was 2.974 which is higher than the midpoint on the four-point scale. This observation implies that waste collectors in Katsina State prefer wearing Personal Protective Equipment when working than using bare hands. Also, they like to remove all jewellery (watches, bracelets, rings and earrings) before putting on safety equipment. However, their attitude is bad towards the use of examination gloves, the use of safety plastic aprons and the use of safety long sleeve shirts.

Hypothesis: Attitude towards safety measures among waste collectors in Katsina State is not significantly positive

Table 2: **One-Sample t-test on Attitude towards safety measures among waste collectors**

	Mean	Std. Deviation	t-value	Df	P-value
Aggregate mean	2.97	0.815	2.013	416	0.001
Constant mean	2.50				

t = 1.972, P < 0.05

Table 2 revealed that the Attitude towards safety measures among waste collectors is significant. This is because the one-sample t-test calculated value is 2.013 is greater than the t-critical of 1.972 at the degree of freedom 416 with a probability value of 0.001 which is less than 0.05 level of significance. Thus, this result shows that the sub-hypothesis (null) which states that "Attitude towards safety measures among waste collectors in Katsina State is not significantly positive" is therefore rejected.

Discussion

The attitude towards safety measures among waste collectors in Katsina State of Nigeria is that the respondents have a positive attitude towards safety measures. This is because the one-sample t-test calculated value is 2.013 is greater than the t-critical of 1.972 at the degree of freedom 416 with a probability value of 0.001 which is less than 0.05 level of significance. This result showed that the waste collectors like to use face shields whenever they are at work, prefer to wear safety boots when working and prefer to read labels on containers of the chemicals than listening to suggestions from co-workers. These findings agree with the result of a study by Fikrom et al., (2016) titled Assessment of knowledge, attitude and practices among solid waste collectors in Lideta Sub-city on prevention of occupational health hazards, Addis Ababa, Ethiopia in which most respondents showed favourable attitude towards safety. The finding also corroborates the findings of Adogu, Uwakwe, Egenti, Okwuoha, and Nkwocha (2015), whose result of their study on public waste management practices among residents of Owerri Municipal, Imo State Nigeria showed that 97.5% had a positive attitude towards waste management. However, the waste collectors do not like using examination gloves while working as well as wearing long sleeve shirts as against house wears.

Conclusion

Based on the findings of this study, it can be concluded that waste collectors in Katsina State have a positive attitude towards safety measures.

Recommendations

Findings of the study were used to make the following recommendations:

1. Waste collectors in Katsina State should be encouraged by government and health agencies on how to maintain a positive attitude towards the practice of safety measures of waste collection through mass media, training, seminars/ workshop and community health-related programs.
2. There is a need for prompt payment and attractive remunerations to waste collectors. This will encourage them to practice safety measures of waste collection. Also, well-packaged safety measures of waste collection education intervention by the state government through training and workshops for workers.
3. There is a need for recruitment of more young age waste collectors bearing in mind gender sensitivity for effective waste collection, easy to train and maintain better work experience

which will ultimately improve service delivery and ensure a positive attitude of safety measures.

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