

*Full Length Research Paper*

# Refuse disposal practices in three major motor parks in Ibadan municipality, Nigeria

S. Ibekwe Titus<sup>1,2\*</sup>, E. Dongo Andrew<sup>2</sup> and K. C. Sridhar Mynepalli<sup>3</sup>

<sup>1</sup>Department of Community Medicine, University of Ibadan, Nigeria.

<sup>2</sup>Department of Surgery, University of Abuja, Nigeria.

<sup>3</sup>Department of Surgery, Irrua Specialist Teaching Hospital, Irrua, Nigeria.

<sup>4</sup>Division of Environmental Health Sciences, Faculty of Public Health, College of Medicine, University of Ibadan, Ibadan, Nigeria.

Accepted 18 May, 2010

Transportation and human mobility have become a part of development in many developing countries. In Nigerian cities, this vital activity has also led to problems associated with large quantities of waste generation and became a management issue for Local and State Governments. This work was carried out at three major motor parks, viz. Akinyele, Iwo Road, and New Garage, in Ibadan, the capital of Oyo State in South-western Nigeria. To assess the nature of wastes generated and the current disposal practices in the selected motor parks. Data was collected through key informant interviews (KII); transect walk and personal observations, focus group discussions (FGD) and available reports and publications. The findings revealed a generally poor environmental hygiene, as the waste is disposed on to open dumps, streams or open burning. These practices apparently are unhygienic and to mitigate such public health issues, a proper organizational structure and supervision by a designated officer is found to be effective in keeping the motor parks safe and hygienic in the interest of public health. Most of the respondents, though aware of such problems could not do much due to lack of funds, tools and support from the government. The waste problems in the motor parks are neglected by the various tiers of government and there is need for greater attention as it is a public health concern in Nigerian cities.

**Key words:** Waste, disposal, motor parks.

## INTRODUCTION

Condition of the environment is a very important determinant of the state of health of a populace. In recognition of the importance, the United Nation's seventh of the eight Millennium Development Goals is on the need to ensure environmental protection and to minimize degradation. Wastes are byproducts of activities of Human and other living elements during the act of

generation of the essential energy, nourishment and technological know-how required to improve and maintain quality living (WAHEB, 1999; Chaudhari et al., 2007). The transportation system is essential to power development in all ramifications. These transit points and contacts can be source of contracting/transmitting infections and diseases. Therefore, the environmental cleanliness of the motor-parks, sea-ports and the air-ports are very important since intra/intercity movements take place through these routes. However, road transportation remains the commonest mode of movement in Nigeria where over 70% of the populace lives below the poverty line (United Nations, 2005). There is a need to evaluate the hygienic conditions in public garages and motor parks. This study aimed at assessing the state of hygiene, mode of refuse disposal and management in

\*Corresponding author. Email: [ibekwets@yahoo.com](mailto:ibekwets@yahoo.com). Tel: +234 8033 4843 80.

**Abbreviations:** KII, The key informant interviews; FGD, focus group discussions; NURTW, national union of road transport workers.

three major commercial motor parks in Ibadan, Nigeria. Suggestions were made on improvement of sustainable waste management.

## METHODOLOGY

### Study location

Ibadan is the capital of Oyo State, one of the thirty six States in Nigeria. Strategically, positioned on longitude 3° 5' East of Greenwich Meridian and latitude 7° 23'N west of the equator, this ancient city is located near the forest grassland boundary of south western Nigeria. The distance from Lagos is about 145 km North East (Ayeni, 1994). According to the 1996 censuses, the population of Ibadan was estimated at about 3 million (B Health Zone /LGA, 1996).

This survey was carried out in the three major motor parks in Ibadan: Akinyele Motor Park (AMP) in Akinyele Local Government Area (LGA) of Ibadan; Iwo Road Motor Park (IRP) in the Ibadan North East LGA and the 'New Garage' (NGP) located in the Ibadan South West LGA, within Ibadan municipal area. AMP caters to the transport linking to northern region which include Kaduna, Abuja, Kano and other major cities. IRP caters to the transport needs of the passengers going towards eastern region comprising Benin, Warri, Port Harcourt, Uyo, Calabar and others. NG links other major cities in the south west which includes Lagos, Abeokuta, Epe, Ijebu-Ode, and other coastal towns. These study sites were chosen purposively as they are the major exit points to reach northern, eastern and other western parts of the country. Many transportation devices such as taxis, mini-buses and buses originate and terminate at these points.

### Study instruments

Both primary and secondary methods of data collection were employed in this study. The primary data were obtained through oral interviews granted by the leaders of the parks, waste handlers and managers, and transect walk through the motor parks and following a structured observational checklist. The secondary information was sourced through official reports, journals and books.

To minimize bias, the visits to these parks were impromptu in order to observe the true state of affairs. The principal investigator went with an interpreter who is a health worker and an indigene of the place in order to ensure free flow of information, cooperation and adequate communication. The Key Informant Interviews (KII) was held in the study locations by picking the leaders who oversee the day to day operations of the Motor Parks. A guide was prepared used in order to obtain the information on the Motor Park, number and type of vehicles that are operated, the amount of traffic, the nature and amounts of wastes generated in the Motor Park, and the current methods of management.

Focus Group Discussions (FGD) was held with National Union of Road Transport Workers (NURTW) whose offices are located in the same location of each of these motor Parks. A structured guide was used in obtaining the information which is similar to that obtained from KII. The difference was that here, a group of opinion leaders were brought together and discussed on issues that may contribute to the waste generation, mode of disposal and the factors that may contribute to littering and public health nuisance.

Permissions were also sought, and obtained from the Governing Council of the various parks to conduct the assessment survey and to document information including some photographs to strengthen the points.

## RESULTS AND DISCUSSION

### Characteristics of the motor parks

The general features of the three Motor Parks under study are shown in Table 1 which indicates the ownership, activities, vehicular and population density, nature of wastes generated and the management practices.

### Waste management practices

#### Akinyele motor park

In AMP, oral interview with Vice-Chairman, NURTW Ojo Branch, revealed that there was no organized method of refuse disposal. Refuse and other wastes are dumped indiscriminately within the environment and sometimes. Refuse is either burnt or thrown into a nearby stream. There is an open dump designated for waste disposal. There is a standing rule that market clean-up should be done two days in a week within and around the park by the workers. Compliance to this directive has not been largely successful.

Personal observation and transect walk showed that the entire park was littered with wastes (Table 1 and Figure 1). When confronted with these observations, the respondents confessed of the low motivation which were attributed to the fact that it was a temporary site and a new Ibadan-Ilorin road is being planned by the government may pass through the site and therefore, they did not want to invest their meager resources on the waste management which may not sustain.

Members of the executive committee and operators of the AMP also admitted awareness of possible health hazards associated with the environmental pollution through smoke and littered wastes which is affecting those who spend long hours at the Motor Park. They felt that state government should assist them in providing disposal bins and crew to regularly evacuate the refuse from the designated open dump.

#### Iwo road motor park

The waste management at this Motor Park is better organized (Table 1). There is an elected officer among the various unions in the Park who oversees the waste management and general environmental upkeep. The waste is collected into stipulated bags and every bag has a price tag for disposal which is ₦ 30.00 (equivalent of US\$ 0.20). Besides refuse, human excreta and urine in the park are also managed in a hygienic way through 'Pay and Use' toilets. Men and women have separate toilets and they pay a token charge of ₦20 and ₦10, for excreta and urinal, respectively. Personal observation confirmed a good level of environmental hygiene.

**Table 1.** Environmental conditions in the motor parks under study.

Features	Conditions		
	Akinyele motor park	Iwo road motor park	New garage motor park
Ownership of the site	State Government and managed by the 2 Div Nigerian army and NURTW	State Government and managed by the NURTW	State Government and managed by the NURTW
Activities	Trading, food vending, minor repairs of vehicles, kiosks, vulcanizing, mechanic workshops, barbing saloons	Trading, food vending, minor repairs of vehicles, kiosks, vulcanizing, mechanic workshops, barbing saloons	Trading, food vending, minor repairs of vehicles, kiosks, vulcanizing, mechanic workshops; barbing saloons, an adjoining market which also contributes to the waste in the motor park
Number of passengers handled in a day	Taxi=37x5x5trips=925 Buses =53x10x5trips=2,650 Grand total=3,575 passengers	Buses =60x14 Passengers=840	Taxi=15x5x2trips=150 Buses =15x14x2trips=420 Grand total=570 passengers
Number of transport vehicles passing through in a day	Cars =37x5=185 Buses =53x5=265	Approximately 60	Cars =15x2=30 Buses =15x2=30
Nature of waste generated	Packaging including plastic and nylon sachets, wrappers, food scrap from fruits and leftovers, rags, phone recharge cards, metal scrap, cans	Packaging including plastic and nylon sachets, wrappers, food scrap from fruits and leftovers, rags, phone recharge cards, metal scrap, cans	Packaging including plastic and nylon sachets, wrappers, food scrap from fruits and leftovers, rags, phone recharge cards, metal scrap, cans
Cleaning frequency	2 times/week	2 times every day – at 7 am before start of the work and 6 pm at the close of the day;	The park is cleaned once in a month during the mandatory monthly sanitation exercise (last Saturday from 6 AM to 9 AM) and occasionally on Thursdays;
Responsibility of cleaning	Individual workers, operators and owners of kiosks	All Union workers, operators and owners of kiosks; penalties apply for non-compliance;	Drivers, Motor Mechanics, Food vendors and hawkers including passengers within the vicinity are all expected to participate;
Waste disposal methods	Open refuse dump behind the Park; partly thrown into a nearby stream; when dry the refuse is burnt openly.	All the refuse is put in bags and stored at the temporary dump site; each bag is contracted out to a private sector agent at a cost of N 30 (US\$ 0.20); the LGA finally disposes off at their designated dumpsite on a regular basis; the system works well.	Open dumping in one corner of the market and burning; there are 'pay and use' toilets for faecal and urine disposal.
Environmental upkeep	Ground littered with refuse; human faeces and urine also found; None	The environment is relatively better; the rear side of public toilet is being used for dumping refuse;	Relatively good; private managers take care of 'pay and use' toilets;
A Caretaker in charge of environmental management		An elected officer (Mrs Bola Morufu) takes care; there are many Chairmen attached to each route; there is an organizational structure for management.	There is a designated officer in charge of the waste disposal and sanitation; all



**Figure 1.** Littered surroundings and smoke from refuse being burnt in AMP.



**Figure 2.** The rear side of the public toilet being used as a refuse dump.

However, some of the people could not afford to pay the fee and use the surroundings thus, defying the regulations. The rear sides of the toilets are also being used for dumping refuse (Figure 2). The management is also putting in constant pressures on the Local and State Governments for the provision of standard dustbins, skips and additional toilets. The drains in the Park also need some attention as they are found to breed mosquitoes. The NURTW is also an active campaigner for the government's Roll Back Malaria programmed and they

want some assistance from the government and cooperation from public to meet the challenge.

### **New garage motor park**

The nature of waste generated and the sanitary conditions are similar to those of other motor parks (Table 1). The KII conducted with the Vice Chairmen of the NURTW at the NGP revealed some points of interest. The park is cleaned once in a month during the monthly National Sanitation Day programmed (last Saturday in the morning 6 - 9 am) which is mandatory. On certain occasions, on designated thursdays the sanitation exercise is carried out to improve the situation. The LG officials enforce the sanitation regulations. All the stakeholders participate in the cleaning exercise. If anyone who is found not participating will be penalized with sanctions. One problem identified was that a local market in the neighbourhood also contributes to the refuse in the motor park thus, complicating the management system. In the last two years, the sanitary condition has improved considerably following the increased environmental awareness created by the state government. The major method of waste disposal is dumping at an open place behind the park and regularly burning it when dry.

Procurement of resources such as tools and bins is a major problem which the management is facing. The management is aware of the health hazards associated with the current methods of waste handling practices but could not improve due to limitations of resources at their disposal. The human excreta and urine disposal is through the private toilets and bathrooms that are managed by private individuals at a fees. A fee of ₦20 and ₦10 for defecation and urination, respectively, are collected as in the IRP. The management is appealing to the government to come to their aid by providing dust bins, skips, toilets and pipe borne water.

Hygienic disposal of waste is of utmost importance in the success of any health measure introduced into a community (Awosika, 2008). This study has brought out that there has been negligence on the sanitary conditions of motor parks and as a result they are very filthy and constitute serious health hazard to workers, operators, commuters and public at large. The 'open dump' system adopted in the motor parks here is hazardous and encourage vector and rodent breeding which may lead to spread of communicable diseases.

Dumping waste into the streams is a common practice in Nigeria and the motor parks are no exception if such a stream is available in the vicinity. This is evident from the IRP. The wastes particularly from the motor parks may also carry heavy metals such as lead, cadmium, chromium and toxic organic chemicals like polycyclic aromatic hydrocarbons which are health hazards when enter the environment (Sridhar et al., 1985). The leachates arising from refuse dumps enter open drains

which dot the motor parks, and from there pass on to other aquatic systems. Fish is a staple food and bioaccumulation of such toxic chemicals may accumulate them which are a major source of protein in Nigeria. Improperly, managed refuse may make them unfit for human consumption. Thus, food security is under threat (Sridhar, 1999). The IRP showed some evidence of hope in that if a proper organizational structure is established in the motor parks, the environmental upkeep can be better managed. The employment of an independent waste manager with participation of all stakeholders may be a viable solution in improving the sanitation and hygiene of motor parks.

### Conclusions

Refuse disposal is a serious problem in many tropical developing countries. Nigeria has witnessed this problem in residential and market areas in almost every city. Refuse generation in motor parks and hygienic management practices are less understood and this study gave some insight into the nature of wastes generated, problems of proper management and the need for consolidated efforts from government, stakeholders of the market and neighbourhood communities. In the waste management strategies, motor parks should be adequately covered as the health of the workers, operators, traders and commuters are involved intimately with poor waste disposal.

### ACKNOWLEDGEMENTS

Our appreciation goes to the Management and Executive members of NURTW in the motor parks studied especially Sunday Awokunle, Alhaji Ashimyr Kolawole Yusuf and the Balogun Oja Idiroko Olomoyoyo. We are also highly indebted to Mr. Steven Ewejobi (Administrative Secretary of Nigerian Medical Association, Oyo State, Nigeria) for his assistance in the interpretation of communications with respondents in the local vernacular.

### REFERENCES

- Awosika O (2008). Management of environmental problems in the Nigera's niger delta Area: The challenge of sustainable Human Development. Paper presented at the annual meeting of MPSA Annual National conference, Palmer House Hotel, Hilton, ChicagoIL. WWW.allacademic.com/metap268532\_index.html accessed in December 2009.
- Chaudhari PR, Gaighate DG, Dhadse SI (2007). Monitoring of environmental parameters for CO<sub>2</sub> sequestration: a case study of Nagpur city, India, *Environ. Monitoring Assess.* 135(1-3): 281-290.
- Sridhar MKC, Bammeke AO, Omishakin MA (1985). A study on the characteristics of refuse in Ibadan, Nigeria, *Waste Manage. Res.* U.K. 3: 191-201.
- Sridhar MKC (1999). You, Your Health and the Environment, A Chapter in Nigeria's Endangered Environment: Agenda for a Millennium, Edited by J. O. Abiodun, M. A. Filani, M. K. C. Sridhar and A. O. Olomola, Published by Obafemi Awolowo Foundation, Lagos, African Press Limited pp. 185-203.
- United Nations (2005). investing in development: a practical plan to achieve the Millennium Development Goals, UN Millennium Project. <http://www.unmillenniumproject.org>.
- West Africa Health Examination Board (WAHEB) (1999). Solid waste management. In: *Waste Disposal and Environmental Health Control*; Sterling Publishing Consultants, Ibadan pp. 11-15.