
ASSESSMENT OF HOUSEHOLD AWARENESS OF, ATTITUDE TO AND PRACTICE OF ENVIRONMENTAL SANITATION EXERCISE AND WASTE DISPOSAL MANAGEMENT IN ONDO CITY, ONDO STATE**Timilehin O. O.**

+2348060214398, +2349074744808

Layinkatimmy@gmail.comDepartment of Arts and Social Science Education,
Social Studies Unit,
University of Ibadan, Ibadan

Abstract

The study identified the gap in household awareness of, attitude to and practice of waste disposal system and environmental sanitation exercise in Ondo city, Ondo state. The survey was conducted using 660 respondents. A self-constructed questionnaire with a Cronbach Alpha Reliability co-efficient of 0.71 (household awareness), 0.79 (house attitude) and 0.80 (household practice) was used for the study. An observation checklist was also used to elicit information. SPSS version 21.0 was used for percentage, mean, and standard deviation. It revealed householders have low level of awareness of waste management system, moderate attitude to environmental sanitation and poor waste disposal system as well as moderate practice. It is therefore, important for all and sundry across profession and divides in Nigeria, most especially in Ondo city to realize the importance of taking care of their environment in terms of sanitation and proper waste disposal method. The study recommended that there is need for "culture of waste disposal skills" which individuals should imbibe for a suitable environmental living via symposium, health talk and seminars across profession. It also recommended staunch punishment for environmental law breakers. There is need for sign post, bill boards and other media which should bear "Pro-bono" information and its penalties at market areas, streets and other crucial areas to caution excesses in Ondo city.

Key Words: Waste, Sanitation, Awareness, Attitude, Practice

Word Count: 222

Introduction

Environmental crises have since grown in complexity, especially with the advent of radiation, chemical hazards and poor waste disposal system. They are prevalent and unprecedented in its magnitude, pace and serenity (Park 2001). The damage to the environment are caused both by natural (Non-anthropogenic) and man-made (Anthropogenic) reasons. The natural impacts are non-preventable and on many occasions unpredictable. Maloney and Ward in Newhouse (1990) referred to the environmental crisis bedeviling the world as a result of '...maladaptive behaviour' and poor waste management system. The world's needs for essential sanitation services (i.e. waste disposal) have greatly increased as a result of rapid

population growth, higher expectations and massive influx of issues and problems facing the planet in which larger percentage of people are ignorant of. One of the crucial and yet unresolved problems for those concerned with quality of life in the world, especially the developing world is that of adequate, accessible and acceptable basic sanitation (World Health Organization, 2004).

The United Nations Organisation opine that unsafe water, inadequate sanitation, and insufficient hygiene practices account for an estimated 9.1 percent of the global burden of disease and 6.3 percent of all deaths, according to the World Health Organization (WHO) (Prüss-Üstün, Bos, Gore and Bartram 2008) cited in

Omoniyi (2016). It has been realized that the environment is a major determinant of the quality of life in any community. The development of any nation has been strongly linked with the quality of its environment. This led ordinary people and governments alike to realize the serious threat environmental degradation poses for earth as a result of poor awareness of, attitude towards and practices of environmental sanitation and solid waste management system. Therefore, concerted efforts must be geared at on a global scale to curb this threat and toe on the right part.

Wastes are materials of solid or semi-solid character that the processor no longer considers of sufficient value to retain. It is also viewed as any material where the holder has an intention to discard because it's no longer part of the normal commercial cycle or chain of utility. In the urban settings, waste refers to rubbish that is collected by local government and may include household, commercial, industrial waste and street sweepings (World Bank, 2015). While solid waste from general housekeeping can be described as residential waste, household waste or domestic waste. Residential waste generated by households may contain organic waste (for example, from the kitchen and gardens), recyclable waste (for example, plastics, paper, cans, etc.), non-recyclable waste (that has no recycling value), and household hazardous waste (batteries, some oils, etc.) (United Nations Environment Programme 2005) However, the following are common types of waste and some can be found in Ondo city.

Sanitation is the prevention of human contact with wastes, for hygienic purposes. Evans (2005) cited in Olarenwaju (2009) defined sanitation as the safe collection, storage, treatment and disposal, re-use, recycling of solid waste (rubbish), collection and management of industrial waste products, management of hazardous wastes (including hospital wastes, chemical/radio-active and other dangerous substances), safe

water storage and safe hand-washing practices, safe treatment of foodstuffs management, drainage and disposal, re-use, recycling of household waste water (grey-water), treatment and disposal, re-use, recycling of sewage effluents (Wikipedia, an online dictionary). Hazards can either be physical, microbiological or chemical agents of disease. It also means promoting health through the prevention of human contact with the hazards associated with the lack of healthy food, clean water and healthful housing, the control of vectors (living organisms that transmit diseases), and a clean environment. Sanitation focuses on management of waste produced by human activities.

Environmental sanitation aims at improving the quality of life of individuals and contributing to social development. It is seen as interventions to reduce people's exposure to disease by providing a clean environment in which to live, with measures to break the cycle of disease. Environmental sanitation comprises both a change in behaviour and facilities to form a hygienic environment. Environmental sanitation are activities aimed at improving or maintaining the standard of basics environmental conditions affecting the wellbeing of people. These conditions include; clean and safe water supply, clean and safe air, efficient and safe animal, human and industrial waste disposal, protection of food from biological and chemical contaminants, and adequate housing in clean and safe surrounding (Park, 2001).

Over the years, sanitation in Nigeria has been developed largely due to individual efforts of households and several non-governmental organizations. The Federal, State and Local governments and the Development Partners have in the past intervened in sanitation matters in one way or the other, for example, the compulsory monthly national environmental sanitation exercise from 1983 to 1999.

There have been agencies of government such as Federal Ministry of Health, defunct Directorate for Food, Roads and Rural Infrastructure (DFRFI), Federal Ministry of Water Resources, Mineral Resource, Environment, State Environmental Protection Agency, and the State Water Agencies set up to ensure a healthy environments. The efforts of the various agencies were not guided by a clear-cut sanitation policy. World Health Organization, United Nation Development Organization, UNICEF, World Bank, other development partners and civil societies have also made some impact in the provision of sanitation in Nigeria. These efforts were limited by several factors including absence of implementable policies on sanitation, inadequate health and hygiene education, weak political will, poor financing, and the very strong notion in Nigeria that sanitation is a household affair (Onibokun, A.G (2003).

Izeze (1999) in Ajayi (2002) opined that many of the current problems associated with waste disposal have resulted from increasing urban population, rapid and haphazard industrialization and inevitable increase in waste generation. The indiscriminate disposal and dumping of waste has become a common practice in Nigeria cities. Almost all the dumps are situated right inside residential areas, markets, farms, roadside and creeks. Despite various diseases, anti-toxic inherent in and desirable from waste products, the presence of waste degenerate the aesthetic value of the environment. The State environment agencies are continuously faced with an increasing amount of solid waste to handle for many years.

Literature Review

Infectious and communicable diseases account for about 60-80% of the health problems such as respiratory infections, malaria, skin infections, diarrhoea diseases, and intestinal parasitic infections in the city. In general, the poor health status of

Nigerians especially Ondo people as observed to be characterized by lack of strong solid waste management system and positive practices of environmental sanitation exercise. Various studies carried out on the level of awareness of the public on solid waste management revealed that lack of environment education among the populace contributed to indiscriminate disposal of solid waste (Omoniyi, 2016). According to Onokerhoraye (1995) lack of motorable roads and streets hampers garbage collection and evacuation. Olarenwaju (2009) observed that most collection centres are not well planned and this led to introduction of illegal collections points.

Statement of problem

The flood that engulfed some parts of Ondo city in the months of June-July, 2011 and a repeat of this injurious act in 2014 in areas like; Valentino-Fagun open-bridge along Ondo-Ife road; Italurowo- Igba junction at Ile-oluji express way; Adeyemi college of Education connecting New town area, St Andrews-Sabo road; Lipakala by-pass; Odosida-General hospital road to mention but few. The report on the aftermath of 2011 flood disaster in Ondo city attributed the causes of the disaster to improper waste disposal and management practices, disruption of existing physical planning structure through construction of shops and houses on pathways that are meant for free flow of water, low level of awareness on governmental environmental regulations and non-compliance to solid waste management policy. This is a true reflection of the poor environmental sanitation practices of Ondo city residents since the early 2000s after the turn of a new millennium. Also one of the problems confronting various societies like this has been the ignorance of the consequences of their actions regarding indiscriminate dumping of refuse on roadside, stream or just littering the whole place violation of town planning regulations and

environmental laws in Ondo city (Ondo State Diary 2012).

Piles of rubbish on the streets or at dump sites provides habitat for rats and flies, and thus contribute to the spread of a number of diseases; rats are major vectors of plague, leptospirosis and other infections, and flies are one of the transmission routes in the F-diagram for faecal-oral disease. Apart from these direct health impacts, solid waste is also linked to the faecal-oral transmission route in a number of ways (Department for International Development, 1998). Householders by nature of their operations generate large volume of wastes. Due to low level of awareness, some of them are not well informed about the consequences of indiscriminate waste disposal practices. Some of them have considered it cheap to burn their solid wastes around the corner or open space. These constitute serious and dangerous environmental pollution. This attitude is traceable to ignorance on the parts of Ondo people, violation of town planning regulations, absence of master plan for most of cities and town and impotency of sanitation laws. Lack of mass education and inadequate information may have been responsible for their non-compliance with solid waste management system.

Several studies have revealed the cause of human problems all over the world as a result of ineffective ways waste are being generated and manage woefully even to the detriment of the people. Research work have been done in other areas but the specific focus of this study is on the assessment of householders' awareness of, attitude to and practices of environmental sanitation exercise and waste disposal management which has not been given strong empirical attention and makes it pertinent to conduct this study. It is worthy of note that one of the challenges facing Ondo city is how to reduce litters and improve environmental sanitation.

Consequently, it becomes very important to manage waste generated in order to prevent an outbreak of disease either pandemic or endemic. The limited effort has prompted the researcher to investigate assessment of householders' environmental sanitation exercise and waste disposal management in Ondo city, Ondo state.

Objectives of the study

The objectives of this study are:

- (1) To Investigates householders' awareness of waste disposal system and environmental sanitation
- (2) To assess householders' attitude towards waste disposal system and environmental sanitation
- (3) To examine householders' practices of waste disposal system and environmental sanitation principles
- (4) To ascertain various methods by which householders dispose their wastes

Research Questions

In view of the problem and objectives of the study, the following research questions have been raised:

- (1) What is the level of householders' awareness of waste disposal system and environmental sanitation?
- (2) To what extent, is the attitude of householders towards waste disposal system and environmental sanitation?
- (3) What are the practices put up by householders in respect of waste disposal system and environmental sanitation principles?
- (4) How do householders dispose their waste?

Study Area

Ondo is a city found in Ondo state, Nigeria. It is located 7.09 latitude and 4.84 longitudes and it is situated at elevation 263 meters above sea level. Ondo City or Ode Ondo, situated in the Southwestern belt of the Nigerian rainforest, has a population of 257,005 making it the 2nd biggest city in Ondo state. It operates on the WAT time zone, which means that it follows the same time zone as Akure (World Atlas, 2016). The

location of Ondo in the middle of Nigeria's rain forest but with good access to the coast made the city a major transit point to northeast Yoruba land during the era of Yoruba civil war. Ondo City is the trade center for the surrounding region. Yam, cassava, grain, cotton and tobacco are grown and Aso-oke fabric serves as their famous traditional attire and is woven therein. Ondo City is the largest producer of cocoa products in the region.

Procedure (Design, Sample, Instrument and Data analysis)

A descriptive quantitative research design was chosen and used to conduct the study on household awareness of, attitude towards and practices of environmental sanitation and waste disposal management in Ondo city, Ondo state. Purposive sampling method was utilized for selection of participants. There 22 political wards in the city of Ondo (Ondo west 12 and Ondo east 10). Thirty respondents (residents) were chosen at random. Thus, a total of 660 participants were

selected. The only criteria is that residents must be 18years and above and must have lived in the building for five years. In each of the wards, every 5th residential building was sampled sequel to enumeration of buildings based on street numbering system and the counting of building where buildings were not numbered. Three types of structured data collection methods were used in the study which include; Questionnaire, structured Interview schedule and Observational checklist methods. Data collected through the questionnaire survey were socioeconomic attributes of the residents and those pertaining to environmental sanitation practices and availability of solid waste management system. All responses were analyzed using SPSS 21.0 software for statistical analysis. Descriptive statistics (means of frequency table distribution and percentages) were used.

Research question 1: What is the level of Householders' awareness of Solid Waste Management system and Environmental Sanitation in Ondo city?

Table 1: Level of Householders' Awareness of Solid Waste Management system and Environmental Sanitation

S/N	Items	Yes (%)	No (%)
1	Are you aware of the governmental policy guidelines on solid waste on enforcement and sanctions mechanisms?	117 (17.7)	543 (82.3)
2	Is the use of waste bin a means of storing solid waste in homes and commercial premises before final disposal?	421 (63.2)	239 (36.8)
3	Could dumping of solid waste on an undeveloped plot of land be regarded as appropriate way of solid waste management?	264 (39.6)	396 (60.4)
4	Could dumping of solid waste in nearby stream, river or gutter be regarded as appropriate way of solid waste management?	109 (16.4)	551 (83.7)
5	Could engagement of waste collector for disposal of solid waste be regarded as appropriate means of solid waste management?	518 (77.7)	142 (22.3)
6	Are you aware that under solid waste management policy there is penalty for dumping of refuse in a drainage during raining season	216 (32.4)	444 (66.6)

Table 1 revealed that 117(17.7%) respondents claimed they are aware of the government...while 543 (82.3%) are not aware. The table further revealed that 421 (63.2%) respondents claimed

they are aware of the use of ...while 239 (36.8%) are not aware. In addition, the table revealed that 264 (39.6%) respondents claimed they are aware that dumping of solid

waste..while 396 (60.4%) are not aware. Furthermore, the table showed that 109 (16.4%) respondents claimed they are aware while that dumping of solid waste in..while 551 (83.7%) are not aware. In addition, the table showed that 518 (77.7%) respondents claimed they are aware that the engagement of waste collector..while 142 (22.3%) are not aware. 216 (63.2%) respondents claimed they are aware that under solid waste management policy..while 444 (66.6%) are not aware. It is observed that only two out of the six items; "Is the use of waste bin a means of storing solid waste in

homes and commercial premises before final disposal" and "Could engagement of waste collector for disposal of solid waste be regarded as appropriate means of solid waste management" had a higher level of householders' awareness of solid waste management system and environmental sanitation, this shows that householders has low level of awareness of waste management system.

Research question 2: To what extent is the attitude to solid waste management and sanitation?

Table 2: Level of Householders' attitude to Solid Waste Management and Environmental Sanitation

S/N	Items	SA (%)	A (%)	D (%)	SD (%)	M	SD
1	I am worried about waste around the environment	366 (%)	154 (%)	52 (%)	88 (%)	1.95	.947
2	I am satisfied with the way people disposes their wastes around you	112 (%)	204 (%)	259 (%)	85 (%)	2.12	.948
3	I am satisfied with the way government are handling waste management system in your area	40 (%)	34 (%)	399 (%)	187 (%)	2.25	.878
4	I am interested in environmental issues	202 (%)	229 (%)	159 (%)	70 (%)	2.24	.942
5	Behaving responsibly toward the environment is part of my way of life	345 (%)	106 (%)	129 (%)	80 (%)	2.47	.962
6	There is a lot I can do to protect the environment from poor waste disposal system	241 (%)	150 (%)	159 (%)	100 (%)	2.45	.936
7	Making awareness of environmental sanitation and other issues to people is the sole responsibility of the government	110 (%)	157 (%)	312 (%)	81 (%)	2.33	.893
8	Human beings are severely abusing the environment due to poor waste disposal system	403	112 (%)	90 (%)	55 (%)	2.36	.931
9	Watching documentaries on television and listening to special programmes on radio about waste disposal and sanitation exercise is not too necessary	12 (%)	34 (%)	390	224	2.41	.948
10	When human beings dessert their surroundings, it often produces distractive consequences	210 (%)	281 (%)	57 (%)	112 (%)	2.40	.892
11	I am willing to make small commitment in form of environmental levy as part for waste disposal management	98 (%)	239 (%)	214 (%)	109 (%)	2.42	.868
						N= 660	Grand
Mean: 2.31							

Table 2 shows that majority of the respondents indicated that "Behaving responsibly toward the environment is part of my way of life" ($\chi = 2.47$) and

"There is a lot I can do to protect the environment from poor waste disposal system" ($\chi = 2.48$). On ranking first and second, householders are

exhibiting positive attitude to solid waste management and sanitation exercise in Ondo city. They are showing staunch commitment and are identifying with their environment to make it habitable for them. Conversely, "I am worried about waste around the environment" ($\chi=1.95$), "I am satisfied with the way people disposes their wastes around you) were ranked least. It has a grand mean 2.31.

Test of norm was conducted on how the attitudinal level of householders to Solid Waste Management and Environmental Sanitation exercise in Ondo city. The maximum scores for a respondent on the 11 items scale above is 44 (11 x 4), that is, the number of items on the householders attitude scale multiplied by number of possible response. The level there-off are three (high, average and low). Therefore to establish an interval score the maximum score was be divided by the number of levels which is (44/3) =14.7. Therefore, an interval score of 15 was used to chart the norm table.

Table 2.1: Test norm table for householders' attitude to Solid Waste

Management and Environmental Sanitation exercise		
Interval	Total mean score	Remark
1 - 16		Low level
17 - 34	25.4	Average level
35 -48		High level

Thus, the overall mean score of the householders' attitude of Solid Waste Management and Environmental Sanitation exercise scale is 25.4 which falls within the interval distribution of 17-34 which is at average level. Therefore it has clearly shown that householders exhibits moderate attitude to waste management system and environmental sanitation exercise in Ondo city. This implies that virtually all householders are not overly concerned about their attitude to waste management system and environmental sanitation exercise. This may likely affect the perception, behaviour and practice of their environment and may spell doom for them.

Research question 3: What are the practices put up by householders in respect of waste disposal system and environmental sanitation principles?

Table 3: Level of Householders' practices of Solid Waste Management and Environmental Sanitation exercise

S/N	Items	VO (%)	O (%)	RO (%)	NAA (%)	M	SD
1	I engage in environmental sanitation exercise	112(16.8)	369(55.4)	125(18.8)	54(8.1)	2.35	.914
2	I keep the garbage or waste material until I can find a waste bin.	76(11.4)	154(23.1)	308(46.2)	122(18.3)	2.38	.951
3	I prevent the formation of waste by given the left over to street animals.	15(2.3)	59(8.9)	289(43.4)	297(44.6)	2.38	.916
4	I warn people polluting environment (nature).	128(19.2)	156(23.4)	294(44.1)	82(12.3)	2.39	.920
5	I engage in bush burning	89(13.4)	23(3.5)	326(48.9)	222(33.3)	2.47	.969
6	I pick refuse from the floor to protect the environment and make sure my waste bin is properly disposed	189(28.4)	201(30.2)	177(26.6)	93(14)	2.48	.952
7	I dump my solid waste late in the night so that I will not be caught	123(18.5)	76(11.4)	322(48.320.9)	139(20.9)	2.37	.869
8	I dump my solid waste in the stream or river because it is convenient and attracts no fee	189(28.4)	287(43.1)	124(18.2)	60(9)	2.38	.965
9	I dump my solid waste in the stream or river irrespective of the season	152(22.8)	223(33.5)	185(27.8)	100(15)	2.47	.955

10	(raining or dry season) I dump my solid waste in any government solid waste management facilities (skip bins) because it is safe	34(5.1)	73(11)	280(42)	273(41)	2.50	.927
11	I always engage the services of registered waste collector for disposal of my solid waste because it is safe	29(4.5)	94(14.1)	221(33.2)	316(47.4)	2.41	.948
12	I do engage the services of cart pusher for disposal of my solid waste because it is cheaper	120(18)	157(23.6)	124(18.6)	259(38.9)	2.44	.943
N= 660		Grand Mean: 2.42					

Table 3 shows that majority of the respondents indicated that "I dump my solid waste in any government solid waste management facilities (skip bins) because it is safe" ($\chi = 2.5$) and I pick refuse from the floor to protect the environment and make sure my waste bin is properly disposed ($\chi = 2.48$). On ranking first and second, householders are aware that dumping at odd places is inimical to their health. Conversely, "I dump my solid waste late in the night so that I will not be caught" ($\chi = 2.37$), "I engage in environmental sanitation exercise" ($\chi = 2.35$) were ranked least. It has a grand mean 2.42.

Test of norm was conducted on how the level of householders' practices of Solid Waste Management and Environmental Sanitation exercise in Ondo city. The maximum scores 48, in respect of the level thereof which are three; high, average and low. Therefore, an interval score of 16 was used to chart the norm table.

Table 3.1: Test norm table for householders' practices of Solid Waste Management and Environmental Sanitation exercise

Interval	Total mean score	Remark
1 - 16		Rare often practice / Low level
17 - 34	29.02	Often practices / Average level
35 -48		Very Often practice / High

Thus, the overall mean score of the householders' practices of Solid Waste Management and Environmental Sanitation exercise scale is 29.02 which falls within the interval distribution of 17-34 which is at average level. Therefore it has clearly shown that householders practice Solid Waste Management and Environmental Sanitation at an average level.

Research Question 4: How do householders dispose their waste?

Table 4: Identified Methods Household on Solid Waste Management and Sanitation exercise in Ondo City

	Frequencies	Percentage	Mean	Standard Deviation
Sack	306	45.9	2.97	.199
Waste bin	124	18.5	2.02	.190
Buried	119	17.9	1.11	.433
Thrown into flowing stream	272	40.8	3.02	.436
Dump and Burn solid waste in front of the house or shop	189	28.4	3.52	.859
Waste Van (payment)	83	12.5	3.40	1.01

Sewage facilities	112	16.8	1.45	.866
Dispose in open drainage (channel)	88	13.2	1.43	.833
Incomplete building	16	2.4	1.41	.819
Dispose in gutter when raining	306	45.9	1.43	.787
Dispose of refuse in vacant plots (open plots)	350	(52.5)	1.23	.598
Heap site	397	(59.6)	1.32	.889
	409	(61.4)	1.02	.916
		N= 660	Grand Mean: 1.95	

With the table 4 above, only three out of the twelve identified methods of disposing wastes in Ondo city had frequencies above 50%, while the remaining nine had frequencies far below 50%. With this, one can conclude that household method of disposing wastes is far below World health organisation standard. By implication, householders do not dispose their solid waste properly and may be prone to various for diseases and environmental hazards like drought, flood, degradation etc. Many of them adopt various unhygienic and unlawful means of disposing refuse. There must be hygienic methods of managing waste which may likely prevent inimical consequences on the growing population of the ancient city.

Discussion of Findings

The findings of the study have made it clear that waste management is a serious environmental problem in Ondo city. The finding of the study shows that householders have low level of awareness of waste management system. In related research by Chineke (2016) on "weekly and monthly environmental exercises, and traders and stakeholder's environmental knowledge, attitude and waste disposal skills in sanitation Oyo state" the study looks into the identified gap in weekly and monthly environmental sanitation exercises from traders and stakeholder's environmental knowledge, attitude and waste disposal skills in Akinyele local government area of Oyo state. The survey was conducted involving twenty eight (28) Traders and one hundred and seventy two (172) Stakeholders. It revealed that Traders have low knowledge of the environment,

non-challant attitude to environmental sanitation and poor waste disposal skills. It also revealed Stakeholders' high knowledge of the environment, average attitude to environmental sanitation and average waste disposal skills.

The result also agreed with Adeolu, Enesi and Adeolu (2014) on "Assessment of Secondary School Students' Knowledge, Attitude and Practice towards Waste Management in Ibadan, Oyo State, Nigeria" This study was designed to assess the knowledge, attitude and practices of Secondary school students towards waste management in Ibadan, Nigeria with three hundred and fifty eight (358) respondents. Findings revealed the level of knowledge, attitude and practice of waste management was relatively moderate in secondary schools in Ibadan, the percentage of those who used indiscriminate solid waste disposal methods like open dumping and open burning was higher. Educational status, age and gender, among others, were factors influencing solid waste management in secondary schools in Ibadan. Significant relationships were observed between students' sex, age and class and their level of awareness, knowledge and practices of waste management.

In a study by Oke, Atinsola and Aina, (2013) "Evaluation of Sanitation Practices in Ibadan South East LGAs of Oyo State, Nigeria" Survey method was used in the study with questionnaire administered on 233 respondents selected from 40 households spatially spread across the LGAs. The analysis shows that domestic liquid and solid

wastes constitute environmental hazard in the area. About 69 per cent of the respondents are females which indicate that issue of household sanitation is gender biased, 64 per cent of respondents are married depicting large household size with multiplier effect on quantity of waste generated. Also 28.3 per cent of households pack solid waste in sacks while 24 per cent use waste bins. Also, 17.2 per cent dump and burn solid waste in front of houses while nine per cent dispose of refuse on vacant plots. The astonishing revelation is that 6.9 per cent of them throw waste into flowing streams while 12.9 per cent dump waste into drainage. Adding to these problems is lack of awareness of building code which made sanitary facilities wrongly located.

Summary and Conclusion

Inappropriate solid waste management practices in Ondo city constitute one of the major factors leading to declining environmental health conditions of the people. Waste management systems are all activities and actions required to manage waste from inception to its final disposal. The quantity and the rate of solid wastes generation in Nigeria have outgrown the capacity of nature to naturally absorb them. In this research, the finding of the study shows that householders have low level of awareness of waste management system, moderate attitude and practices but poor waste disposal methods. A proper waste management is needed to ensure the protection of the environment and human health. To ameliorate these anomalies, weekly and monthly environmental sanitation exercise has been adjudged as a charitable step towards sustainable development. Sanitation is paramount to human life because it contributes to safety from communicable and non-communicable diseases as well as plays important roles in economic development and sustenance of cultural values. Environmental sanitation plays a very significant role in ensuring a better and healthy living of people of

the society. It is therefore, important for all and sundry across profession and divide to realize the importance of their taking care of the environment. The need for attitudinal change which is essential for effective participation in waste reduction, reuse and recycling as well as consider what they do that affects the environment, but if Ondo city people continue in such a harmful way, then there may be environmental disaster, a repeat of the injurious act in 2011 and 2014.

Recommendations

In view of the implications of the findings of this study, the following recommendations are considered necessary

- i. There should be stakeholders' meeting meant to sensitize Ondo people on the waste disposal system, sanitation and how to turn waste around into wealth creation.
- ii. There is need for all and sundry to start to care for the environment through simple daily activities such as; Recycling of used items, proper disposal of waste materials, using environmentally friendly products, being conscious of expired materials, going green at all times, avoiding excess use of chemical substance like pesticide, insecticide, avoid bush burning. The culture of waste disposal skills should be imbibed by individuals for a suitable environment for living
- iii. There is need for public and private partnership on waste management system. Government should also take the lead role by provide the enabling environment, policies and programmes that will drive the citizenry to keen into sustainable development policies. They should also engage in recycling. Private and foreign investments will see reasons to join the trend. This will reduce waste, pollution, and also the cost of living since items used can be re-used. It will also serve as means of creating job employment for teeming population of unemployed masses.

- iv. The weekly and monthly environmental sanitation exercise is of paramount importance and should not be taken for granted. There is need for staunch punishment for environmental law breakers. Sign post, bill boards and other media should bear "Pro-bono" information and its penalties at market areas, streets and other crucial areas to caution excesses.
- v. There is need for effective collaboration between the government and her agencies, marketers and stakeholders at all level to proactively contribute towards keeping the society clean through the weekly and monthly sanitation exercise
- vi. There is need for solid public campaigns, seminars, symposia and health talk to marketers, residents, and even students on the degradation of the environment, as this will avail them the opportunity to have proper knowledge of environmental disasters, waste management system and sound healthy living. This will help them to avoid inimical consequences of refuse burning, blocking of water channels with waste etc.
- vii. Many of our current environmental problems are due to wide spread ignorance of basic ecological facts of life. There is need for the introduction of Environmental education into the school curriculum which will cater for essential of developing a healthy, sustainable society. Even all and sundry should be tutored on modern waste disposal system.

References

- Adeolu, Enesi and Adeolu 2014 Assessment of Secondary School Students' Knowledge, Attitude and Practice towards Waste Management in Ibadan, Oyo State, Nigeria. *J. Res. Environ. Sci. Toxicol.* 3(5):66-73
- Ajayi, F 2002 Solid waste management in Akure. B.Tech Thesis, Department of Urban and Regional Planning, Federal University of Technology, Akure
- Chineke C. 2017 Weekly and Monthly Environmental Exercises; Traders

And Stakeholder's Environmental Knowledge, Attitude And Waste Disposal Skills In Sanitation Oyo State. A Masters' degree research submitted to the department of Teacher Education, University of Ibadan, Ibadan. Unpublished

Department for International Development, 1998 Reports on Waste Management

www.gov.uk/organisation/departments for International development. Accessed: 12, June, 2017

Newhouse, N. 1990 Implications of attitude and behavior research for environmental conservation *Journal of Environmental Education* 22, (26-32)

Oghawa, H. 1998 Sustainable solid waste management in developing countries. Paper presented at the 7th ISWA conference on waste management, Singapore

Oke, M.O, Atinsola, M.A Aina, M. 2013 Evaluation of Sanitation Practices in Ibadan South East LGAs of Oyo State, Nigeria in *Academic Journal of Interdisciplinary Studies* University of Rome; MCSER-CEMAS-Sapienza 2(5)

Olanrewaju O.O 2009 Waste to wealth: A case study of Ondo state integrated waste recycling and treatment project, Nigeria. *European Journal of Social Sciences*, 8:8-9

Omoniyi T.O 2016 Environmental knowledge and attitude as correlates of senior secondary students' environmental practice in Ondo west local government area of Ondo state. M.Ed thesis. University of Ibadan, Ibadan. Unpublished.

Ondo State Diary 2012 Produced by Ondo State Ministry of Information

Onibokun, A.G (2003). Governance of Waste Management in Ibadan: Geographical Characteristics. International Development Research Science for Humanity (IDRC&CRDI) Canada. Idrc.ca/en/ev-1-201-1-Do_Topic.html.

Onokerhoraye, A.G 1995 Urbanization and Environment in Nigeria. Implications for sustainable Development. Intee printers, Ibadan.

Park C 2001 Environment in Crisis in: The Environment: Principles and Applications, 2ndEd. Routledge, London, 3-32

Prüss-Üstün, A. Bos, R, Gore, F and Bartram, J. 2008 *Safer water, better health: costs, benefits and*

sustainability of interventions to protect and promote health. Geneva: World Health Organization (WHO). United Nations Environmental Programme (UNEP) 2005, *Environmental Sanitation and Community Participation: Enhancing Local Programmes.* Published by United Nations Environment Programme and Accessed online in June, 2017 at <http://www.unep.or.jp/ietc/kms/data/1459.pdf>

World Atlas, 2016
World Bank 2015 Tackling Waste Disposal and Recycling Emissions in Lagos Retrieved from http://www.worldbank.org/en/results/2015/10/13/tackling_waste_disposal_reducingemissions_lagos
World Health Organization (2004) Facts and Figures World Water Council, World Water Forum, Stanbul