Investigating Traders' Knowledge and Attitude towards Land Pollution in Igbona Market, Osogbo, Osun State, Nigeria

Adebomi Oreoluwa, James Ebun Atolagbe, Adeola Oshineye*, Olarinmoye Abayomi, Oyebade Akin and Jesutomi Oladapo

Department of Public Health, Adeleke University, Ede, Osun State, Nigeria

Abstract

Land is one of the major receipt of wastes (solid, liquid and air emission) generated from human activities. Land pollution is a serious environmental problem with far-reaching effects on sustainable development, ecological balance, and human health. Understanding the knowledge and attitude of traders can provide necessary solution and intervention. The aim of this study was to assess traders' knowledge and attitude towards land pollution in Igbona Market, Osogbo Nigeria. Face-to-face interviews and observations were conducted among a sample of 317 traders. A questionnaire consisting of closed ended questions was used to collect data. The results of the study showed high level of knowledge among the traders regarding land pollution and its impacts. Few of the traders experienced health problems related to land pollution also few of them have ever experienced any health problem believed may be related to land pollution. The trader's attitude towards land pollution was largely positive with the idea of sewage and wastewater be properly controlled. The findings of this study provide valuable insights into the knowledge and attitudes of traders in Igbona Market towards land pollution, and show the need for sustained education and awareness-raising activities to further encourage preventive measures for land pollution in the market.

Keywords: Land • Traders • Knowledge • Attitude • Pollution

Introduction

Land pollution is a serious environmental problem with far-reaching effects on sustainable development, ecological balance, and human health. Nigeria, like many other countries throughout the world, is experiencing fast urbanization, industrialization, and population growth, which has increased awareness of the harmful impacts of land contamination. Local markets, which are important locations where land pollution is extremely pervasive and act as thriving economic centers across the nation, are one of them. Land is one of the major receipt of wastes (solid, liquid and air emission) generated from human activities. Several economic activities that lead to land pollution are mainly from agricultural and industrial activities, and poor waste management from various processing output [1].

The term "land pollution" refers to a broad range of toxins and pollutants that harm soil quality and vegetation support, disrupting the balance of the environment as a whole. The introduction of hazardous chemicals, careless garbage disposal, and diverse land-use patterns are examples of this phenomenon. The effects of land pollution are severe, reducing agricultural output and endangering human health by contaminating water supplies and the food supply [2]. Markets, typically the main workplaces of the fast-moving urban poor, suffer from pollution caused by the disposal of sewage, dirt, and animal waste. In Nigeria, these markets are huge manufacturing hubs; however, many of these are neglected, smell foul, breed flies, are infected by rats and pose health risks [3].

Local markets play a crucial role in the economic life of communities in Nigeria. They are centers of trade, commerce, and social interactions, attracting a diverse group of traders and customers. However, the bustling activities in these markets often generate substantial amounts of waste, leading to haphazard disposal practices that contribute to land pollution [4]. Lack of understanding of the negative effects of land pollution, inadequate waste treatment infrastructure, and potential long-term repercussions for the welfare of market vendors and the neighborhood all contribute to the issue.

It is essential to comprehend the knowledge and attitudes of traders concerning land pollution if we are to effectively solve this issue. The environmental degradation that results from market-generated pollution directly affects traders in addition to being one of the main contributors to it. The purpose of this article is to provide insight into the degree of land pollution knowledge among market sellers in Igbona Market, their perspectives of how it affects their livelihoods, and their readiness to adopt environmentally friendly behaviours. We intend to offer insights into the existing knowledge and attitudes of traders in Igbona Market, Osogbo, Osun State, through a thorough survey and qualitative interviews. This research also aims to explore potential techniques for encouraging sustainable practices and environmental stewardship among market participants.

Methods

Study design and sampling size

This study employed a descriptive cross-sectional design which was used obtain quantitative data using questionnaires. Leslie Kish's formula was used to determine the sample size. The questionnaires were self-administered and were also interpreted into local language for the respondents who could not read and answer in English. Face-to-face interviews and observations were conducted among a sample of 317 traders. The validity of the questionnaire was also done through content and face validity which was carried out by experts before and after pretesting.

Sampling technique

This study utilized systematic random sampling. The traders were

approached while sitting and also owned a shop or kiosk within the market was randomly selected for the study in order to meet the required sample size. Three hundred and seventeen (317) respondents were selected for the study.

Data collection

The study was conducted between 3 April and 29 May 2023. A structured questionnaire which was designed to meet the objectives of this research for data collection. The questionnaire was reviewed by experts on the field the questionnaire contained three sections: section A is on socio-demographic variables (7 items); section B is on knowledge (9 items); and section C is on attitude (9 items). The final instrument was administered to the traders *via* self-administered.

Respondents' consent

Verbal and written consent was obtained from the respondents before administering the questionnaire. The purpose of the study was explained and they were made to understand that they can withdraw at will also respondents were assured confidentiality.

Data analysis

Data was analysed using Statistical Product and Service Solution (SPSS) version 25. Descriptive statistics was used such as frequency and percentages to describe the respondents. Chi-square test was also used to determine the relationships between the respondent's knowledge and attitudes. Knowledge and attitudes were scored as correct answer to be 1 for good knowledge or attitude and 0 for poor knowledge or attitude.

Results

Socio-demographic characteristics of the respondents

Table 1 presents the socio-demographic characteristics of the respondents. Majority (63.4%) of respondents are in the age group 18-30 years. More (60.9%) respondents are female while 39.1% are males. As many as (94.3%) respondents are Yoruba. Majority (74.1%) of the respondents practice Christianity. More than half (58.4%) of the respondents are married. Slightly less than half (49.5%) of respondents had tertiary education. As many as (40.1%) respondents' monthly income are between N31,000 – 40,000 (Table 1).

Respondents' knowledge on land pollution

Respondents' knowledge on land pollution is presented in Table 2. Majority (82.6%) of respondents have heard of land pollution. Most respondents had their source of information about land pollution from parents, friends, social media (25.9%) and Television (22.4%). More than half (80.4%) of the respondents reported that there is risk to health from land pollution. Majority (98.7%) reported that improper waste management has adverse effect on environment. About (97.8%) of the respondents reported that burning of generated waste has effects on the environment. Over (98.4%) of the respondents reported that improper waste disposal is a threat to health. Majority (98.4%) of the respondents reported that Land pollution in the market can have negative health effects on traders and customers. More than half (51.1%) of the respondents reported that illegal dumping of refuse is one of the main causes of land pollution (Table 2).

Level of knowledge of land pollution in relation to Health

Majority (76%) of respondents had good knowledge while 24% had poor knowledge (Table 3).

Respondents' attitudes on land pollution

Respondents' knowledge on land pollution is presented in Table 4. Majority (75.1%) of the respondents reported that they recycle their waste. Over (87.4%) had good attitude towards participating in cleanup campaigns. More than half (84.9%) had good attitude that waste should be carefully disposed. Few (11.7%) of the respondents had negative attitude that it is

the respondents reported to have experience some health problems believed to be related to land pollution in the market (Table 4).

Overall respondent's attitudes

Table 1. Socio-demographic characteristics of respondents.

Variable (n=317)	Category	Frequency	Percentage
Age group	18-30 years	201	63.4
	31-50 years	93	29.3
	51-70 years	23	7.3
Sex	Male	124	39.1
	Female	193	60.9
Tribe	Yoruba	299	94.3
	Igbo	14	4.4
	Hausa	4	1.3
Religion	Christianity	235	74.1
	Islam	78	24.6
	Traditional	4	1.3
Marital Status	Single	128	40.4
	Married	185	58.4
	Widowed	4	1.3
Level of education	No formal education	30	9.5
	Primary	13	4.1
	Secondary	117	36.9
	Tertiary	157	49.5
Monthly income	1000 – 10000	45	14.2
	11000 – 20000	25	7.9
	31000 – 40000	127	40.1

Table 2. Knowledge of respondents on land pollution in relation to health.

	Variables (n=317)	Frequency	Percentage (%)
Have you heard about land pollution?	Yes	262	82.6
	No	55	17.4
Source of information	Parent	82	25.9
	Friends	82	25.9
	Social media	82	25.9
	Television	71	22.4
Is there a risk to health from land pollution?	Yes	255	80.4
	No	62	19.6
Improper waste management has adverse effect on environment	Yes	313	98.7
	No	4	1.3
Burning of generated waste has effects on the environment	Yes	310	97.8
	No	7	2.2
Is improper waste disposal a threat to health?	Yes	311	98.1
	No	6	1.9
Land pollution in the market can have negative health effects on traders and customers	Yes		
	No	312	98.4
Causes of land pollution	Illegal dumping of refuse	162	51.1
	Lack of proper waste management	47	14.8
	Lack of drainage system	61	19.2
	Inadequate government supervision	47	14.8

good to dump refuse on the waterways. Over (98.1%) had good attitude that sewage and wastewater should be properly controlled. Majority (97.5%) had good attitude that market should be clean and free of waste. About (24.3%) of

Majority (63.4%) of respondents had positive attitude and 36.6% had negative attitude (Table 5).

Association between Knowledge and Attitude to Land Pollution

There is statistically significant association between knowledge of land pollution and attitude towards land pollution (p=0.016) (Table 6).

Discussion

This study showed that majority of the respondents 76.0% has good knowledge on land pollution in relation to health hazard in the market; this may be because of the already acquired information gotten from parents, friends and social media. This finding is similar the results from Kabito G, et al. [5] which reported 63.5% of respondents with good knowledge, Laor P, et al. [6] which reported 73% respondents with high level of knowledge, 87.8% with good knowledge [7] 79% with good knowledge [8] and 54% of respondents with good knowledge [9].

On attitude towards land pollution, it was observed that 63.4% of the respondents have positive attitudes towards land pollution; this may be because of the negative health conditions that might have affected them in the past. This finding is similar to that observed by Barlao EP, et al. [7] which reported good attitude of 87.0% and Almasi A, et al. [8] which reported 86% of respondents having good attitude. However, the findings are in contrast to that of Kabito G, et al. [5] which reported 43.4% with good attitude, Laor P, et al. [6] which observed 13% of respondents with positive attitude and Ekoro BO, et al. [9] which observed 45% with acceptable attitude. There is statistically significant association between knowledge of land pollution and attitude towards land pollution (p=0.016). This deduces that knowledge of land pollution is a predictor of attitude towards land pollution. This finding is similar to the result of Kabito G, et al. [5] which observed that good knowledge and positive attitudes were significantly associated factor.

Conclusion

This study revealed that majority of the traders in Igbona have good knowledge on land pollution in relation to their health, also the respondents have positive attitudes towards land pollution. Therefore there is need for sustained education and campaigns activities to further encourage preventive measures for land pollution in the market.

Conflict of Interest

The authors declare no conflicts of interest.

Authors Contributions

The authors critically reviewed and revised the manuscript before the final draft of the manuscript is brought forward to be published. All the authors are accountable for all aspects of the work in order to ensure integrity.

Acknowledgment

This research would have not been made possible without the full participation of the traders who spent their time in responding to the questionnaire.

Table 3. Level of knowledge of land pollution.

Knowledge	Frequency	Percentage
Poor Knowledge	76	24
Good Knowledge	241	76

Table 4. Respondents' attitudes towards land pollution.

	Variables	Frequency	Percentage (%)
Recycling of waste	Yes	238	75.1
	No	79	24.9
Participating in clean up campaigns	Yes	277	87.4
	No	40	12.6
Carefully disposing of waste	Yes	269	84.9
	No	48	15.1
It is good to dump refuse on the waterways?	Yes	37	11.7
	No	280	88.3
Sewage and wastewater should be properly controlled	Yes	316	98.1
	No	1	1.9
Do you feel market should be clean and free of waste?	Yes	309	97.5
	No	8	2.5
Have you ever experienced any health problems that you believe may be related to land pollution in the market?	Yes	77	24.3
	No	240	75.7

Table 5. Overall attitude.

Attitude	Frequency	Percentage
Negative Attitude	116	36.6
Positive Attitude	201	63.4

Table 6. Association between knowledge and attitude to land pollution.

Knowledge	Attitude		Total	Chi-square	P-value
	Positive Attitude	Negative Attitude			
Poor knowledge	19	57	76	5.79	0.016
Good knowledge	97	114	241	-	-
Total	116	201	317	-	-

References

1. Ogamba, Emmanuel N., S. C. Izah and T. Oribu. "Water quality and proximate analysis of Eichhornia crassipes from River Nun, Amassoma Axis, Nigeria." *Res J Phytomedicine* 1 (2015): 43-48.

2. Smith, M.R., Singh, B.R. and Guérin, J.R. "Soil health and land use management: The role of soil pollution." Land Degradation & Development 28 (2017): 1961-1972.

3. Benneh, G.J., Songsore J. and Nabia A. "Environmental Problems." Stockholm Environmental Institute (2017).

4. Akinwale, O.P., Ayoola A. A. and Olaoye I. O. "Evaluation of solid waste generation and disposal practices in a rural market in Osun State, Nigeria." *Environ Sci Poll Res* 26 (2019): 8158-8168.

5. Kabito, Gebisa, Henok Dagne and Mulat G/Hiwot. "Knowledge, attitudes, practices, and determinants towards wastewater management in northwest Ethiopia: A community-based cross-sectional study." *Risk Manage Healthc Policy* (2021): 2697-2705.

6. Laor, Pussadee, Yanasinee Suma, Vivat Keawdounglek and Anuttara Hongtong, et al. "Knowledge, attitude and practice of municipal solid waste management among highland residents in Northern Thailand." *J Health Res* 32 (2018): 123-131.

7. Barloa, Eveth P., Lustina P. Lapie and Christian Paul P. de la Cruz. "Knowledge, attitudes, and practices on solid waste management among undergraduate students in a Philippine State University." *J Environ Earth Sci* 6 (2016): 146-153.

8. Almasi, Ali, Mitra Mohammadi, Ali Azizi and Zohreh Berizi, et al. "Assessing the knowledge, attitude and practice of the Kermanshahi women towards reducing, recycling and reusing of municipal solid waste." *Resour Conserv Recycl* 141 (2019): 329-338.

9. Ekoro, Beatrice Okoi, Olajumoke Esther Olanrewaju, U. M. Ugbe and Favour Achi Inyang-Ogim, et al. "Market traders' knowledge, attitude, and practices of solid waste disposal in Calabar Municipality, Nigeria: New implications for global health education." *Int J Popul Stud* 7 (2021): 1-9.