

Assessing The Effects of Nasarawa State Waste Management and Sanitation Authority's Communication Strategies in Addressing Waste Issues in Lafia Metropolis

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Abstract

Waste management issues are huge challenges facing developing and third countries of the world, and different efforts including the use of communication strategies have been employed to mitigate these challenges. Therefore, the crux of this study was to assess the Effects of Nasarawa State Waste Management and Sanitation Authority's communication strategies in addressing waste issues in Lafia metropolis. The objectives of the study were to find out the communication strategies used by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis; examine the types of messages used by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis; explore the extent of the use of these communication strategies by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis; and to assess the effects of the communication strategies used by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis. Attitude change and persuasive communication theories were used to support the study. Data was collected from a sample population of 384 through the quantitative survey design and availability sampling technique. Findings revealed among others that the communication strategies have not been used extensively and that they have not yielded the desired impact. The study recommended that the Nasarawa State Waste Management and Sanitation Authority's should use a variety of communication techniques, make the communication participatory, dialogue-based, use horizontal form of communication rather than being vertical in disseminating its messages. There is also the need for the Nasarawa State Waste Management and Sanitation Authority communication strategies should be more focused, inclusive, wider, regular

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and consistent as this will assist in strengthening the people's positive behaviour change in line with global best practices on waste management.

Keywords: Waste management, communication strategies, effects, sanitation.

Introduction

Waste management remains an international scourge, especially in developing and third world countries. The world is challenged with a global waste generation and management problem (Lenkiewicz, 2016). Improper waste management has detrimental effects on the health and well-being of those who work nearby, as well as on the air and water. These waste management activities include community decision-making and management related to arrangement and negotiation with various interests of the public and private sectors; they also include more formal municipal waste collection, disposal, re-use and recycling (Ogah-Aduwari, 2023).

In India, for instance, according to CDDIndia (2024), consumption of different materials and commodities has increased six times from 1970 to 2023 and there is projection that these figures may double by 2030. CDDIndia (2024) further states that approximately 75, 000 TPD of wet waste is generated on daily basis, municipal solid waste that resulting from food waste and biodegradables remains at 45%. Dry waste, accounting for about 35% of the India's total waste remains a challenge. Further, Manas (2023) alludes that in the Philippines, only 9% of the nation's high-value recyclables and low-value plastics and repurposed, while 33% are collected; which makes the country one of the highest contributors to pollution world-wide. High levels of plastic pollution, lack of proper waste disposal infrastructure, inadequate waste collection services, informal waste sector, and public awareness and behaviours are the major challenges facing waste management in the Philippines (Manas, 2023).

Similarly, in Tanzania, a study by Nyampundu, Mwegoha and Millangi (2020) established that improper waste management as it relates to inappropriate collection and recycling plans, wrong disposal methods such as pouring of refuse directly into the drainages, and that there has been no coordinated and proper record keeping of waste-related activities in the country. In the same vein, John (2023) states that in Kenya, the main challenges of waste management include inadequate infrastructure, lack of financial resources, inadequate policy and regulatory framework, and low public awareness and participation.

An article by Adu-Asare (2024) of Ghana's waste management revealed that poor national economic policies and poverty among people living in rural areas continue to act as a clog in trying to manage waste in the country. A study by Lissah et al (2021) further concur that degree of the efficacy and success of waste and sanitation management in many communities in Ghana is a factor of low understanding of waste issues, insufficient financial and human resources, religious, social and cultural factors, weak regulation and policy implementation, continue to affect proper waste disposal and management in the country.

Furthermore, more than 32 million tonnes of solid waste are generated annually in Nigeria, and of these figures, less than 35% is properly collected, with 2.5 million tonnes is synthetic waste (UNIDO, 2021). It added that Nigeria falls among the top 20 nations contributors of the total amount of land-based plastic refuse (83%), which are thrown into gutters, rivers, seas that finally found themselves in oceans (UNIDO, 2021).

It has been observed that Nasarawa State is one of the states in Nigeria that is facing waste management problems. For example, Chunwate, Adamu and Benbella (2021) state that in Keffi Local Government of Nasarawa State, waste management is confronted with a lot of issues such as shortage of manpower, expertise, recycling facilities, irregular and improper waste gathering and collection, insufficient funding, among others.

One of societal development interventions is communication. It is through communication that societies across the world sensitise and raise awareness about different issues confronting them. Communication foster commitment among members of the society, as well as build and strengthen the capacity of its people. Glanz (2015) posits that communication has been applied to bring about changes in many human activities and diseases open defecation, polio eradication, breastfeeding, and immunisation; the issues of waste management can thus benefit hugely from effective communication strategies to turn the situation around. Haruna (2023) argues that communication through the use of various strategies such as the media, posting of information on walls, streets, posters, flyers, leaflets, town hall meetings, use of billboards and the likes, is capable of raising public awareness, changing perceptions, behaviours and attitudes. Anjuwon and Okiyi (2018) corroborate that in social development strategies, communication techniques such as meeting people to discuss with them in a hall, market places, use of conventional media like television, radio, newspapers, billboards, magazine, and the new media such as Facebook, WhatsApp, X, Instagram, YouTube, TikTok, among others. Equally employed are distribution of handbills, posting and pasting of posters, use of religious,

women and youth groups and traditional leaders, drama, engagement with heads of families, town criers, to mention but a few (Anjuwon & Okiyi, 2018).

Many studies have been conducted by scholars on the use of communication and sanitation-related matters (Haruna, 2023; Batta, 2018; Chinemere & Adetoun, 2015; Saikia, 2017; Sridhar, Okareh & Mustapha, 2020). For instance, the study of Batta (2018) focused on coverage of environmental issues in the Nigerian press. The study of Sridhar et al (2020) concentrated on the knowledge, behaviours, and practices on water, sanitation, and hygiene in some selected LGAs in Kaduna State, North-Western Nigeria. Saikia (2017) studied how the mass media is used to enlighten the people regarding environmental issues. Similarly, Chinemere and Adetoun, (2015) study dwelled on the role of the mass media on sustaining the environment with a view to ensuring Nigeria's development in all ramifications. Haruna's (2023) research was on the nexus between the Abuja environmental protection boards' use of communication media and change in public behaviour on drainage sanitation. However, none of these studies focused on assessing the effects of Nasarawa State Waste Management and Sanitation Authority's communication strategies in addressing waste issues in Lafia metropolis. This is the gap that this study bridged.

Objectives of the Study

The primary objective of the study is to assess the effects of Nasarawa State Waste Management and Sanitation Authority's communication strategies in addressing sanitation issues in Lafia metropolis. The specific objectives of the study are to:

1. Find out the communication strategies used by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis.
2. Examine the types of messages used by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis.
3. Explore the extent of the use of these communication strategies by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis.
4. Assess the effects of the communication strategies used by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis.

Conceptual Clarifications

Communication Strategies

According to Bessette (2018), a strategy is a course of action put in place to achieve a purpose. Thus, a communication strategy aims at locating and identifying important people in the society such as opinion leaders, government officials, women, market, youth, heads of families, traditional and religious leaders with messages so that they can in turn relate such information or messages to their subjects or citizens at large through the use of proper channels. Communication strategies equally identify the metrics that will be used to assess the effectiveness of the information and the expected behaviour that the people will exhibit after consuming the messages. Servaes (2017) contends that communication strategies are designed with the intention of achieving a set goal and objectives initially conceived. Victoria (2016) concurs that communication strategies are either verbal or written messages that are used to evaluate the success of a project; it uses the various channels of communication, ranging from community-based methods to the employment of mainstream media to the deployment of digital communication platforms; and they are done with the mindset that the beneficiaries and the communicators understand themselves. This implies that communication strategies are techniques employed to disseminate information to a target audience, and such strategies usually go through stakeholders in communities, as well as use the right channels of reaching the people with the information.

However, communication strategies as relate to this study refers to the use of print, broadcast, online media, town hall meetings, seminar, town criers, traditional rulers, etc, employed by Nasarawa State Waste Management and Sanitation Authority to transmit information about sanitation issues in Lafia metropolis with the aim of changing the attitudes of the people towards better sanitation practices.

Waste Management

Divergent opinions exist regarding the notion of waste management. For instance, waste management is referred to by United Nations Statistics-Environment (2017) as the procedures and activities needed to properly handle refuses from the point of origin to the point of disposal. It is also conceived to mean a strategy in which government and the private sector put in place comprehensive measures to effectively and efficiently manage waste from the inception point, sorting, recycling and re-use or appropriate disposal (SafetyCulture, 2023). However, waste management in this study refers to the various methods such as removal, burning, throwing

away, refining, extracting, sorting, reclaiming, reusing, directing, management and disposal of waste, with a view to reducing the amount of unusable materials and to prevent diseases, and environmental hazards by Nasarawa State Waste Management and Sanitation Authority

Review of Literature

Behavioural Change Communication

The campaign for behavioural change communication is crucial in shaping attitudes, characters and behaviours that negatively affect health and spread disease among human populations. Numerous harmful practices are deeply rooted in the culture, practices, norms, traditions, values, principles, doctrine and philosophies of humans. To address these practices, Sood, Corinne and Sengupta (2006) opine that behavioural change communication becomes imperative as such communication strategies, especially in developing societies help to enhance the knowledge of the people, as well as foster interpersonal communication aimed at encouraging better healthy lifestyle. This form of communication not only educates and enlightens the people against negative and harmful practices, but equally facilitates social change and acts as a catalyst for dialogue among people living in a community regarding positive and healthy living. This type of communication strategy is concerned with the use and application of different approaches (integrated in nature) to convey information to an audience primarily to persuade and influence them towards the seeing things from the point of view of the communicator (Kauppi 2015). This information or messages can be disseminated using various mass communication channels, such as newspapers, magazines, radio, television, billboards, the online media, in addition to using workshops, seminars, symposia, community gathering, market places, religious worship centres, community drama, among others. Crawford and Okigbo (2014) assert that one of the effective and efficient methods of ensuring members of a given community live a healthy life is through the instrumentality of behavioural change communication, whose primary aim is to educate, enlighten and inform the people about healthy habits and proper health practices.

Furthermore, Proschaska, Krebs and Norcross (2011) contend that in the domain of change communication, the individual that the information is targeted at transits from one stage of change to another through the persuasive messages that are conveyed to him or her. These authors went ahead to elaborate that once a change is achieved, concerted efforts are necessary to continue to sustain and prevent the affected person not to go back to such habit again. Continuous and consistent use of persuasive information or messages can serve as catalyst to

change people behaviours for good. The objective of behavioural change communication is to positively impact the influence the attitudes of members of a given community. Newson et al (2013) affirms that most health problems encountered by people in the society can be prevented and managed through massive deployment of behavioural change communication.

In addition, Adewuyi and Adefemi (2016) articulate that communication whose target is to change behaviour emerges from health communication, focusing on exploring and implementing communication strategies aimed at fostering positive health behaviours. In the same vein, Briscoe and Aboud (2012) conceptualise this form of communication as inherently non-linear, representing a participatory approach designed to promote good health practices among human populations. Behavioural change communication is meant to equip members of a community and influence them towards health and environmental practices that are globally accepted. It is a strategic communication approach, as noted by Okwumba and Onyiaji (2018), as purpose-driven and possesses the potential to raise awareness and alter behaviours.

Empirical Review

This section reviews studies on communication, waste and sanitation-related practices. To start with, Haruna (2023) assessed the nexus between the communication strategies employed by Abuja's environmental protection boards and the resulting changes in public behaviour regarding drainage sanitation. The study collected data from 1000 Nyanya and Dakwa residents of Abuja through the survey research design. The study was supported by the health belief model. Findings indicated that most of the respondents (57.8%) got information reading the activities of the Abuja Environmental Protection Boards via the medium of radio. Other findings revealed that 15% of the participants received the Boards' information through television, 4.3% got the Boards' messages through Information, Education and Communication (IEC) materials. The study concluded that though radio and other information enlightenment materials played significant role in sensitising the people of Abuja about drainage sanitation, but the people's behaviour concerning drainage sanitation has not changed. The study advocated for intense deployment of combination of media strategies, encompassing participatory approaches and use of the right messages be employed to promote behavioural change in relation to regarding drainage sanitation.

Sani and Aminu (n.d) investigated communication and environmental sanitation in local communities: a risk communication process. The objectives of the study were to find out the level of awareness of environmental sanitation, the most dependable medium of information

that the respondents receive sanitation messages, knowledge and behaviour towards environmental sanitation and knowledge of health related risks of environmental sanitation among the participants. Survey research method was adopted to gather data from the 640 respondents. The scope of the study as regards location was Sabon Gari and Samaru, Zaria, Kaduna State, Nigeria. The study found that most of the participants have knowledge of environmental sanitation. Finding also showed that radio was the most trustworthy medium in conveying sanitation information. The result further revealed that knowledge towards environmental sanitation was poor and the people had poor attitude towards it and finally most of the respondents did not know the health implications of living in an unhealthy environment. The study recommended that local media organisations should intensify their coverage and reporting of environmental sanitation with a view to improving the knowledge of the people regarding sanitation issues.

Sriram (2013) conducted a study on the use of various communication strategies aimed at promoting awareness regarding sanitation and encouraging changes in hygiene behaviour. The objectives of the study were to assess the level on sanitation and the effectiveness of the prevailing information, and education and communication approach on rural dwellers in India. The focus group discussion and survey research approaches were adopted. The study established there was low level of awareness on sanitation. Also found was that the information education and communication by relevant agencies to sensitise the people on hygiene and sanitation matters have not been effective. The study thus, recommended a new dimension and approach to the use of integrated communication to improve sanitation and hygiene situations in India. The study further advocated that the right message, use of right influencers and media of communication be used.

Yabar and Figueroa (2020) examined participatory communication strategies, basic sanitation and public health of the people of Paucartambo-Cusco. The objective of study was to assess the impact of participatory communication strategies has on the right way to utilise basic sanitation services, and how this affect public health. The study made use of both the qualitative and quantitative research methods, collecting data through the use of in-depth interviews and observation. Findings revealed that despite the steps taken to improve basic sanitation through the provision of sanitation facilities, sanitation issues are still challenging due to the fact that participatory communication strategies were not properly applied. The study concluded that the communication approaches used by agencies concerned has been vertical that why. The

study recommended that the use of radio and other communication channels to deepen best sanitation practice among the people.

Theoretical Framework

The study was situated within the persuasive communication theory. The theory was introduced by Carl I. Hovland in 1940. Hovland asserted in 1940 that persuasion involves the modification of an individual's behaviour through the acquisition of new information.

Persuasion is characterised as a form of communication coming from a source that seeks to alter, affect or influence others by changing their long held beliefs, attitudes, principles, doctrine, customs, traditions (Simon, 1976). According to Nwoke in Asemah (2012), persuasion is a methodical and proficient strategy aimed at educating, enlightening and creating awareness, with a view to influencing others ideas, principles, characters, values, beliefs, among others for a more advantageous outcome. It can also be regarded as the adept presentation of messages or information coming from an influencer or a source to a target audience intended to alter or change their views of issues. Effective persuasive communication is essential. It involves the ability to convince someone to alter their mindset, attitudes, habits, beliefs or behaviours. In essence, it is the ability to encourage and motivate those who listen to view issues from the speaker's perspective.

In persuasive communication, there are three processes, which comprised of communication, attitude and behaviour. In the case of this study, information is given to people of Lafia metropolis for them to be aware of the dangers associated with practicing poor disposal of waste. Therefore, the persuasive communication theory becomes significant in this study because the study set to find out whether the communication strategies employed by has influenced the attitudes of Lafia residents about good waste disposal practices. This theory is considered suitable for this study because sensitisation communication campaign regarding how to ensure better waste practice by Lafia metropolis residents through the use of various communication strategies by Nasarawa State Waste Management and Sanitation Authority, which main goal is to change people's attitude towards healthy environment.

Methodology

Quantitative survey research design was used to collect data for the study. The study's population comprised of people in Lafia metropolis. According to information obtained from

United Nations World Population Prospects (2024), the current estimated population of Lafia is 388, 000. From this total population, the study adopted the Krejcie and Morgan (1970) sample size table to get a sample size of 384.

Furthermore, availability method was deployed to distribute the questionnaire. The presentation of data was through the use of frequency tables and charts and mean deviation tables, using the Strongly Agree (SA), Agree (A), Undecided (UD), Strongly Disagree (SD) and Disagree (D) measuring scale. The criteria mean for accepted result was pecked at 3 point and above, while the rejected result was put at 2 point and below.

Data Presentation and Analysis

The researchers distributed 384 copies of questionnaire out of which 377 were returned. However, 369 were found valid and used for the analysis. Percentage representation is as shown on the chart below:

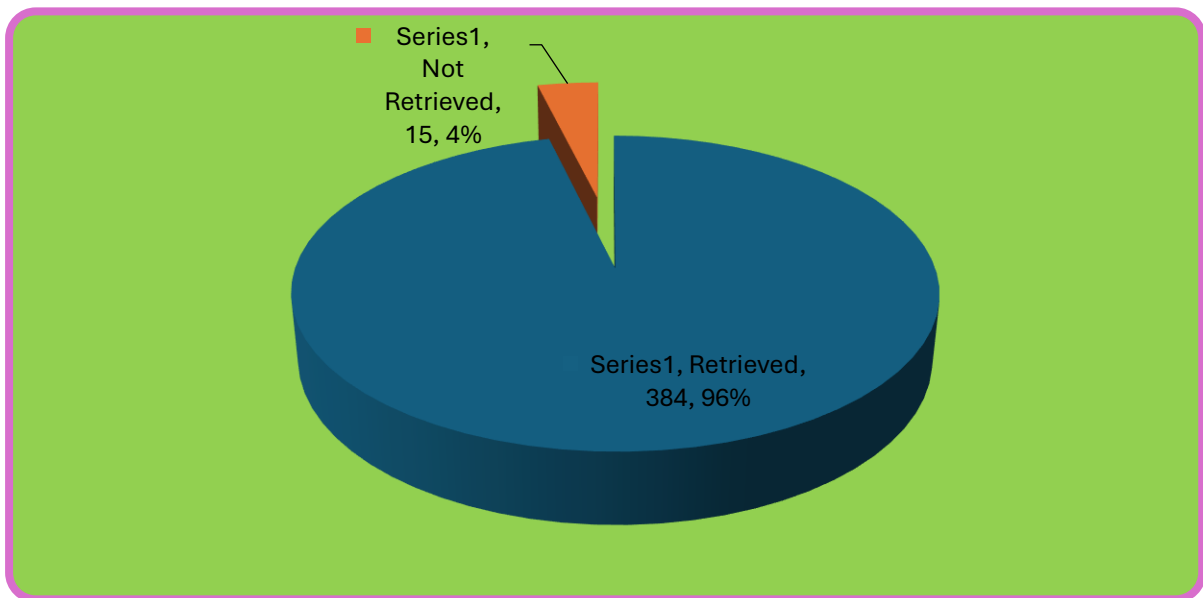


Figure 1: Analysis Response Rate

Table 1: Communication Strategies Used by Nasarawa State Waste Management and Sanitation Authority’s in Addressing Waste Issues in Lafia Metropolis

Options	AS	A	U	SD	D	Total	Mean Rating	Decision
Mass media such as television, radio, newspaper, magazine, social media and billboards	118	197	3	21	30	369	3.9	Accepted
Information education communication (IEC) materials	103	57	9	88	112	369	2.8	Accepted
Town hall meetings	11	8	19	93	238	369	1.5	Rejected
Announcement through town crier	44	51	10	185	79	369	2.4	Rejected
Drama	5	11	30	214	109	369	1.8	Rejected
Through the words of mouth in worship centres, schools and markets	25	37	21	222	64	369	2.2	Rejected
Distribution of handbills, pamphlets, flyers and leaflets	18	23	26	191	111	369	2.0	Rejected
Posting of posters on walls and other strategic locations and use of banners	37	21	9	199	101	369	2.1	Rejected

Use of family heads, women associations, traditional rulers, film shows	23	17	24	127	178	369	1.8	Rejected
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The implication of the data in Table 1 above is that aside the conventional media, the Nasarawa State Waste Management and Sanitation Authority has not utilised other communication strategies effectively to dissuade the people on the dangers of not practicing global standards of waste disposal.

Table 2: Types of Messages Used by Nasarawa State Waste Management and Sanitation Authority’s in Addressing Waste Issues in Lafia metropolis.

Options	AS	A	U	SD	D	Total	Mean Rating	Decision
Messages on improper waste disposal and practices that are capable of causing environmental and health challenges	53	71	13	139	93	369	2.5	Accepted
Poor waste disposal practices could lead to mosquito breeding around	69	44	4	151	101	369	2.5	Accepted
It is your responsibility to dispose waste properly	62	79	9	138	81	369	2.7	Accepted

The implication of the finding in the Table 2 above is that not much of the respondents are aware of the types of messages used by Nasarawa State Waste Management and Sanitation Authority’s in Addressing Waste Issues.

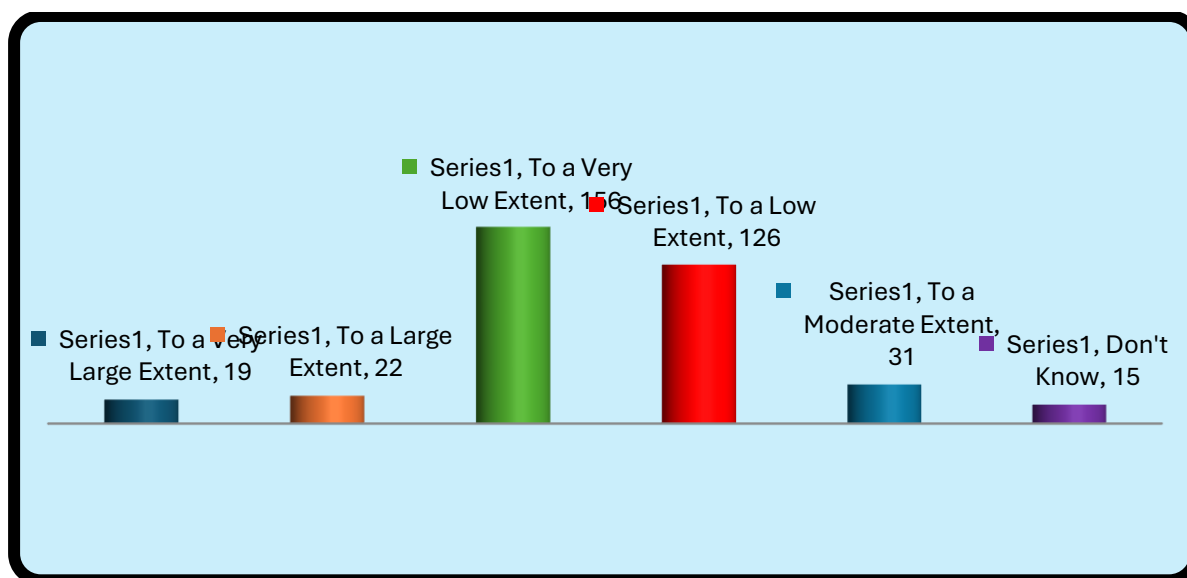


Figure 2: Extent of the Use of these Communication Strategies by Nasarawa State Waste Management and Sanitation Authority's in Addressing Waste Issues in Lafia metropolis

It could be deduced from the results in Figure Two that the government of Nasarawa State through its waste management and sanitation agency has not done enough as regards the use of communication avenues to sensitise and enlighten the people on waste management issues.

Table 3: Effects of The Communication Strategies Used by Nasarawa State Waste Management and Sanitation Authority's in Addressing Waste Issues in Lafia metropolis

Options	AS	A	U	SD	D	Total	Mean Rating	Decision
Messages adequately sensitised and enlightened you on proper waste management practices	29	17	11	144	168	369	1.9	Rejected
Information received from Nasarawa State Waste Management and Sanitation Authority	18	22	9	181	139	369	1.9	Accepted

adequately educated you on the importance of proper waste disposal so as to protect the environment and prevent diseases

Table 3 above shows respondents’ responses on the communication strategies used by Nasarawa State Waste Management and Sanitation Authority’s in addressing waste issues in Lafia metropolis. Based on the results, it could be inferred that most of the respondents adjudged that the communication strategies have not been effective.

Discussion of Findings

Participants expressed their opinions on the communication strategies employed by Nasarawa State Waste Management and Sanitation Authority to ensure best waste management practices (see Table 1). Here the study the communication strategies to include mass media such as television, radio, newspaper, magazine, social media and billboards, Information Education Communication (IEC) materials, town hall meetings, and announcement through town crier. Others include the words of mouth in worship centres, schools and markets, drama, distribution of handbills, pamphlets, flyers and leaflets, posting of posters on walls and other strategic locations and use of banners, use of family heads, women associations, traditional rulers and film shows. This finding is in tandem with that of Anjuwon and Okiyi (2018) who established that in social development strategies, communication techniques such as town hall meetings, market square meetings, community engagements, radio jingles and talk shows, use of branded TT-shirts and caps, posters, handbills, traditional rulers, churches, schools, age groups, women groups, parents, field visits, drama, face-to-face meetings and others are used. However, the conventional media, which include radio, television, newspaper, magazine, billboards were the most popular media through which the respondents receive waste management messages from the Nasarawa State Waste Management and Sanitation Authority. An earlier finding by Haruna (2023) corroborates that radio was the most information source for residents of Abuja regarding messages from the Abuja Environmental Protection Boards.

The study further assessed the types of messages used by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis. Findings here revealed these to include dissemination of waste management information such as messages on improper waste disposal and practices that are capable of causing environmental and health challenges. Others are poor waste disposal practices could lead to mosquito breeding around and messages on the responsibility of the people to dispose waste properly. The study finding agree with that of Sani and Aminu (n.d), who found that poor drainage sanitation practice could have health and environmental implications, as well as poor drainage sanitation could be caused by improper waste disposal.

Additionally, the study explored the extent of the use of these communication strategies by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis. The study found that the communication strategies have not been used extensively (see Figure 2). Haruna (2023) align with this finding by stating that sanitation messages from Abuja Environmental Protection Boards were too few and far between and not targeted specifically at drainage sanitation. The implication of this is that the government of Nasarawa State through its waste management and sanitation agency has not done enough as regards the use of communication avenues to sensitise and enlighten the people on waste management issues, and this scourge may continue to increase.

Lastly, the study examined the effects of the communication strategies used by Nasarawa State Waste Management and Sanitation Authority's in addressing waste issues in Lafia metropolis. Finding showed that the communication strategies have not yielded the desired impact. Finding here supports an earlier one by Sriram (2013), who found that there was low level of awareness on sanitation, and that the information education and communication by relevant agencies to sensitise the people on hygiene and sanitation matters have not been effective.

Conclusion

The concern of this study has been on assessing the effects of Nasarawa State Waste Management and Sanitation Authority's communication strategies in addressing waste issues in Lafia metropolis. From the findings, the study concludes that the communication strategies has not been extensive, effectively and people engaging. Despite these limitations, conclusion is also drawn that Nasarawa State Waste Management and Sanitation Authority disseminate waste management information such as messages on improper waste disposal and practices that are capable of causing environmental and health challenges. Others are poor waste disposal

practices could lead to mosquito breeding around and messages on the responsibility of the people to dispose waste properly.

Recommendations

1. The Nasarawa State Waste Management and Sanitation Authority's should use a variety of communication techniques, make the communication participatory, dialogue-based, use horizontal form of communication rather than being vertical in disseminating its messages.
2. There is also the need for the Nasarawa State Waste Management and Sanitation Authority communication strategies should be more focused, inclusive, wider, regular and consistent as this will assist in strengthening the people's positive behaviour change in line with global best practices on waste management.

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