

Gauging The Efficacy of Plateau Environmental Protection and Sanitation Agency's Communication Strategies in Curbing Open Defecation Practice Among Residents of Jos, Plateau State, Nigeria

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Abstract

The study set out to assess the effectiveness of Plateau Environmental Protection and Sanitation Agency's communication campaign strategies in addressing open defecation practice in Jos metropolis. The study was guided by the Persuasive Communication Theory. Mixed research methods were used. Finding revealed that PEPSA employed various communication strategies such as town hall meetings with stakeholders, engagement of town criers, community theatre, use of traditional and religious worship centres, and use of billboards, pasting of information on walls, and other strategic locations and use of banners. Others are the use of conventional mass media like television, radio, newspapers, magazines; use of social media such as Facebook, Whatsapp, X, Instagram, YouTube, TikTok; and distribution of leaflets, flyers, pamphlets otherwise known as information education communication materials. The study however found that the communication strategies have not been effective due to certain challenges such as people's attitude and lack of monitoring mechanisms. The study recommended among others that PEPSA should increase the knowledge of the people on open defecation through increased use of various communication strategies.

Keywords: Open defecation, communication strategies, sanitation, Plateau Environmental Protection, Open Defecation Practice.

Introduction

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Statistics by the World Health Organisation (2024) reveals that more than 2.4 billion across the world engage in open defecation practice. This practice, according to WHO is more pronounced in developing countries due to lack of toilet facilities, ignorance and poor sanitary education. For instance, data from Afghanistan shows that an estimated 4.2 million people defecate in the open (UNICEF, 2022). In India, a document released by WHO and UNICEF in 2021 indicated that 15% of the country's population were engaged in open defecation.

In Latin America and the Caribbean, information by Pan American Health Organisation and the World Health Organisation (2019) reveals that 82.7 million people living in these regions do not have access to safe-managed water and sanitation services and about 15.5 million of these persons representing 18.8% still practice open defecation.

The situation is not different in countries like Uganda, Senegal, Kenya, Rwanda, Lesotho, Cameroun, etc. For example, reports by MWE MoWaEGoU (2019), Rakotomanana et al (2020) and Nafula (2023) reveal that 14.6 million Ugandans still engage in open defecation. A report by the World Bank in 2017 shows that 24.1% of Senegal's rural population were practicing open defecation. In 2020, the figure stood at 11.25% (World Bank, 2020). In 2018, statistics of those practicing open defecation in the country was 12.48%, in 2016 it was 13.73%, while in 2014, the data revealed a total of 15.01% of Senegalese involved in open defecation (World Bank, 2023).

Open defecation practice is still rampant in Nigeria. Babalola (2019) contends that Nigeria is one of the countries of the world with the highest number of people practising open defecation with an estimated 47 million people doing it.

Plateau State, according to a report by Sahara Reporters (2021) is the second with the highest number of people practicing open defecation after Kwara State. This negative report among others have attracted the attention of the Plateau Environmental Protection and Sanitation Agency (PEPSA) as observation has shown that PEPSA has come up with various communication campaign strategies to deal with this menace. The goal of persuasive communication is to alter the normal practice of people to a refined and globally accepted practice. That is PEPSA has designed its communication strategies to educate and enlighten people on the need to avoid defecating in the open. PEPSA believes that through persuasive communication ending open defecation in Jos North Local Government Area and by extension Plateau State as a whole is possible. But the effectiveness of these communication strategies needs interrogation.

Studies on communication strategies and curbing the menace of open defecation have been conducted (Abdullaihi, Sarkingobir & Yabo, 2023; Abebe & Tucho, 2020; Okon & Ikpi, 2019; Bealy, et al, 2022; Adinlewa, & Olubodede, 2021; Bwakan, 2021 and Alom, Ogah & Dogo, 2020; Melea, 2023; Kakade, 2015; Oluwalanu et al., 2022; Alhassan, 2019; & Coffey et al. , 2014). Nevertheless, a study on the communication strategies adopted by PEPSA in eradicating open defecation in Jos metropolis from 2020 to 2024 have not been subjected to empirical test to ascertain their efficacy. This is the gap that this study filled.

OBJECTIVES OF THE STUDY

- i. Find out the communication strategies used by PEPSA in addressing open defecation in Jos North Local Government Area.
- ii. Explore the extent of the use of communication strategies by PEPSA in addressing open defecation in Jos North Local Government Area.
- iii. Examine the effectiveness of the communication campaign strategies adopted in sustaining open defecation-free communities by PEPSA in North Local Government Area.
- iv. Find out the challenges hindering the assimilating of PEPSA's communication strategies concerning anti-open defecation menace among the respondents.

CONCEPTUAL CLARIFICATIONS

Communication Strategies

A communication strategy delineates the primary stakeholders for whom the communication is intended, the essential messages to be conveyed, and the specific channels deemed suitable for engaging the target communities. Additionally, the communication strategy outlines the methods for evaluating its success or failure, as well as the anticipated behavioural changes among the targeted community members. For a communication strategy to be deemed successful, it must achieve the goals and objectives that were initially set.

These strategies are essential for articulating, clarifying, and advocating a vision along with a clearly defined set of objectives. Kibe (2014) asserts that they establish a dependable and unified "voice" that connects diverse activities and goals in a way that resonates with an organization's stakeholders. Sackey (2014) suggests that communication strategies also shape

the nature of relationships and collaborations formed with key constituents of the organization, such as investors, who play a vital role in the successful execution of the program. Skinner and Rampersad (2014) describe a communication strategy as a carefully coordinated series of actions designed to achieve specific goals through the implementation of a combination of communication methods, techniques, and approaches. Sanusi et al (2022) emphasise that communication strategies serve to bridge the disparity between the knowledge of the recipient and that of the sender in authentic communication contexts, thereby preventing disruptions in communication (Huang, 2010). Anjuwon and Okiyi (2018) further support this notion by identifying various communication methods utilised in social development strategies, including town hall meetings, market square gatherings, community interactions, radio jingles, talk shows, flyers, posters, handbills, traditional leaders, churches, schools, age groups, women's associations, family heads, field visits, film presentations, drama, and face-to-face discussions, among others. Strategic communication is intentional, focusing on the careful design of messages, processes, and the outcomes associated with message dissemination (Rhee, 2008).

Open Defecation

Open defecation refers to the act of defecating in unconfined areas, such as fields, forests, and bodies of water, without the appropriate disposal of human waste (Boschi-Pinto, Lanata & Black, 2009; Jones, Fisher & Reed, 2012). Open defecation denotes the act of relieving oneself in unconfined areas rather than utilising designated sanitation facilities. Individuals who engage in this detrimental behaviour often do so due to a lack of accessible toilets or adherence to cultural beliefs, even when such facilities are present. According to Iyorza (2015), open defecation involves the act of excreting in public spaces instead of utilising toilet amenities. Such activities may occur in various locations, including wooded areas, forests, drainage systems, and along roadways. The act of urinating in communal areas such as fields, parks, rivers, and open ditches adjacent to residential properties presents significant public health hazards (Clasen et al, 2014 cited in Oluwalanu, et al, 2022). This practice involves individuals choosing to relieve themselves in open environments instead of utilising toilets, resulting in the deposition of human faeces in various outdoor locations, including beaches and other public spaces (WHO & UNICEF, 2013).

Behaviour Change Communication

A behaviour change communication campaign can be defined as a systematic approach that employs a range of integrated strategies to convey messages aimed at informing, influencing, and persuading target audiences regarding the adoption or maintenance of healthy behaviours (Kauppi 2015). These messages can be disseminated through a variety of communication channels, including television, radio, newspapers, the internet, social media, brochures, posters, workshops, community forums, and personal interactions. According to Crawford and Okigbo (2014), one effective method for promoting public health is the implementation of communication campaigns that educate and inform the community about healthy habits and proper healthcare practices.

Skinner and Rampersad (2014) contend that within the stages of change model, individuals' transition from one level of change to another as a result of persuasive messages that have been communicated. They further elaborate that once a change is achieved, specific efforts are necessary to sustain that change and prevent relapse. Continuous and consistent exposure to persuasive messages regarding behaviour change can significantly contribute to the complete elimination of open defecation practices. The objective of a behaviour change communication campaign is to positively influence and modify the health behaviours of individuals and communities.

Review of Empirical Studies

Alom, Ogah and Dogo (2020) evaluated public awareness and understanding of anti-open defecation campaign methods in Benue State through the use of the survey research design. The investigation was supported by The Situation Awareness Theory. Finding of the research indicated that the people of Benue had adequate knowledge of open defecation campaign messages by the Benue Government. The study identified the most used communication techniques to include leaflets, posters, and signboards (50 percent). While the use of opinion leaders, town criers, and health experts' word-of-mouth campaigns as well as radio, television, and newspaper ads (21 percent). The lowest rated medium was social media/blogging (6 percent). According to the findings, community compliance is extremely excellent but not exceptional.

Similarly, Okon and Ikpi (2019) conducted a survey on the efficacy of communication methods in dealing with open defecation in Ugep Community in Cross River State. The study utilised the Stages of Change Model to further deepen the understanding of the research. Finding of the investigation showed as a result of the various communication methods used to educate and

enlighten members of the studied community, some of them saw the need to shun open defecation, leading to them having modern toilet facilities. However, few people in the community still engage in open defecation practice despite their exposure to education materials. The study suggested that continuous communication campaign should be used to sensitise the public on the need to stop open defecation; while volunteer health communicators should sensitise children on the dangers of open defecation since the study showed that many of them still engage in this act.

In the same vein, Owusu (2021) dwelled on using communication to tackle the menace of open defecation. The study was carried out in La Dade-Kotopon Municipality in Ghana. The thrust of the investigation was to assess how the communication used has been able to change the attitude of the people against open defecation. The stud utilised the qualitative research strategy. The research was situated within the framework of social and behaviour change theory, social practice theory, and diffusion of innovation theory. The study established that authorities in La Dade-Kotopon Municipality in Ghana have made use of communication to enlighten the people against open defecation practice. Data from the investigation however showed that the communication strategies have been effective because members of the community still engage in open defecation practice. The ineffectiveness of the communication strategies was attributed to cultural factors and a reluctance to alter established behaviours, insufficient funding to maintain the communication efforts, a lack of toilet facilities in both public and private spaces, high levels of illiteracy, and increasing population numbers. The study suggested that for communication to yield positive results, it is essential to implement a greater variety of suitable communication channels that highlight the dangers linked to open defecation, alongside securing funding to support ongoing initiatives.

Also, the crux of Nwokolo and Nwokolo (2021) was on the utilisation of social media and mobile phones (GSM) in the initiative against open defecation in South-East Nigeria. The survey research method was employed. The study found that social networking sites like Facebook, WhatsApp, Instagram, YouTube, among others have become useful in educating and enlightening the people concerning the dangers of open defecation due to their wide reach ability, compare to conventional communication channels like radio, television and newspapers. These social communication platforms that are embedded in mobile phone, the study argued remain important tools in promoting campaigns against open defecation, chiefly owing to the rising and growing use of social media for literacy purposes, especially among the younger generation. Conclusion was drawn that taking advantage of online communication

platforms was important in promotion healthy practices such as behaviour change towards the use of modern toilet facilities, thus reducing the incidence of cholera and other transmissible ailments associated with open defecation. It was suggested that, considering the growing demographic of youth engaging with social media and GSM, the governments in South-East Nigeria should undertake preliminary studies to capitalise on this media accessibility for a more impactful campaign aimed at eradicating open defecation in the region.

Ugwu (2017) conducted a review to find out the application of behaviour change communication to curb open defecation practice in rural areas in Nigeria. The stud adopted the Diffusion of Innovation Theory to further deepen the thrust of the research. The study found that the use of behaviour change communication strategies contributed immensely in taming open defecation practice in some communities in Nigeria. It was recommended that all levels of government, programme planners, non-governmental organisations, and international agencies should enhance their efforts to eradicate the practice of open defecation in Nigeria.

Sanusi et al. (2022) investigated the use of communication strategies as means addressing open defecation. The research was conducted in rural communities in Southwest Nigeria. The researchers utilized survey and interview methodologies, gathering data from 391 participants. The findings indicated that the state’s radio station played a significant role in raising awareness about the hazards of open defecation and encouraging the community to construct toilets. Additionally, the Water and Sanitation Department employed dialogue and various interpersonal communication methods to educate the public and promote compliance, as revealed by further analysis of the data. The study concluded that radio serves as an effective medium for fostering awareness and facilitating behavioural change. It recommended that stakeholders should demonstrate genuine commitment to the objectives of the “Clean Nigeria: Use the Toilet” campaign. Furthermore, it was suggested that the issue of open defecation in Southwest Nigeria can only be effectively addressed if relevant sanitation agencies in the area implement integrated communication strategies, prioritising dialogue over coercive measures.

Theoretical Framework

The study is situated within the purview of the Persuasive Communication Theory. This theory came into existence through Carl I. Hovland in 1940. Hovland posited that change of behaviour and attitude can be possible through the application of various communication techniques. He proposed that when people are persuaded via the instrument of communication, there is the tendency for them to absorb new ways of doing thins that the communicator wants or desires.

Persuasion according to Hovland aims at making people to see things through the lens of the person using communication to talk to them. In other words, the objective of persuasion is to influence other people's behaviour by changing their philosophy, thinking, principles, character or attitude. This further implies that persuasion, which also implies urging, is a skilful and systematic technique used by an individual or authorised organisation to raise people's consciousness and create awareness with a view to influencing or strengthening their held beliefs. In a way, the persuasive communication theory is made up of three distinct phenomena, which are Communication-Attitude-Behaviour.

This theory finds relevance in this stud due to the fact that PEPSA has been using various communication strategies to persuade the people of Jos metropolis for them to be aware of the health issues associated with open defecation and the need for the people to stop this act. The theory further applies to the stud in the sense that the researcher wanted to know whether the information the people of Jos metropolis gained from PEPSA has influenced their attitudes about open defecation.

Methodology

The study utilised a mixed method of qualitative and quantitative research strategy. The purpose of adopting the mixed research approaches include: to complement the lapses of one approach by the other; and qualitative research approach equally allows participants ample liberty to describe their feelings in their own words and possibly in their local dialect. Also, findings from qualitative and quantitative data sources can be compared after collecting both types of data. Another reason for adopting the mixed approaches is because the result of one approach can be used to help bridge the gap of the other. In summary, the advantage of the use of mixed research strategy is that it allows the generation of adequate and variety of data to achieve the research objectives as well as to draw valid and reliable deductions (Creswell, 2009). From this, in-depth interviews and quantitative survey were used to obtain data from the respondents.

The population of the study covered the entire residents of Jos North Local Government Area. Jos North LGA has a projected population of 643, 200 in 2024 (National Bureau of Statistics, 2024). From the total population (635, 330), the researchers used Krejcie and Morgan (1970) table method of getting sample size from a total population to get a sample size of 384 used for the quantitative aspect of the research. Further, the researchers conducted 15 interviews.

The research utilised the purposive sampling method. Purposive sampling was adopted to select Jos North Local Government Area. This choice of studying this LGA was because it is observed to be one of the areas with high rate of open defecation. Also, the purposive sampling was employed because the researchers needed information from only adult population of the area who are capable of answering the research questions.

On data presentation and analysis, quantitative data were analysed using descriptive statistics. Results were presented through the use of tables, figures, frequencies, and percentages. Mean deviation of five-point Likert Scale, which the criterion mean was put at 3.0 and above is accepted result, while 2.0 and below is rejected result were also used for the analysis and presentation of quantitative data. The qualitative data obtained through interviews conducted were analysed using the method proposed by Braun and Clarke (2013) to discover prominent themes and patterns within the interview data. This task entails encoding the material and classifying it into appropriate themes. Deductive analysis was also used.

Data Presentation and Analysis

A total of 384 copies of questionnaire were administered out of which 356 were retrieved, representing 93% of the sample size, and found valid for the analysis. Graphical representation of the response rate is shown in Figure 4.1

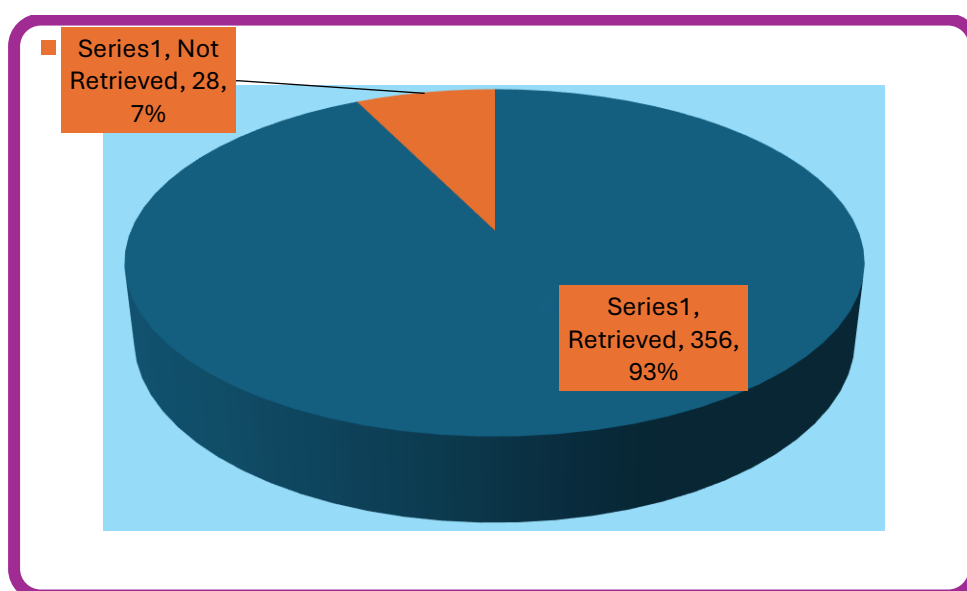


Figure 1: Analysis of Response Rate

Table 1: Awareness of Communication Strategies Used by PEPSA in Tackling Open Defecation

Options	AS	A	U	SD	D	Total	Mean Rating	Decision
Use of conventional mass media like television, radio, newspapers, magazines	139	193	13	8	3	356	4.2	Accepted
Use of social media such as Facebook, WhatsApp, X, Instagram, YouTube, TikTok	121	187	9	18	21	356	4.0	Accepted
Distribution of leaflets, flyers, pamphlets otherwise known as information education communication (IEC) materials	117	181	11	25	22	356	3.9	Accepted
Town hall meetings with stakeholders, engagement of town criers, community theatre, use of traditional and religious worship centres	129	195	6	15	11	356	4.1	Accepted
Use of billboards, pasting of information on walls, and other strategic locations and use of banners	89	208	11	27	21	356	3.9	Accepted

Data in Table 1 signifies that PEPSA uses a number of communication strategies with a view to ensuring open defecation free status in Nigerian communities. These strategies include use of flyers, new and traditional media, town hall meetings, workshops and seminars, etc. This is

as attested by a significant number of the respondents who either strongly agree or agree. This finding, therefore, infers that the respondents are aware of the communication strategies employed by PEPSA concerning open defecation issues. Furthermore, it suggests that PEPSA recognises the importance of using various communication methods to deepen behaviour change.

Further, participants were asked questions regarding the communication strategies of PEPSA during the interview session. In addressing this question, the participants exhibited uniformity in their replies. The communication strategies pointed out include: Engagement of town criers, community theatre, use of traditional and religious worship centres; use of billboards and other educational communication materials. For instance, one of the respondents said: “One of the methods that PEPSA used to enlighten us about dangers of open defecation that they came to our community sometimes ago and gave us talk in our primary school”. Another respondent concurred that “PEPSA used radio, our traditional and religious leaders, last time they were here, they shared branded T-shirts and caps and other enlightenment materials containing information regarding leaving in healthy environment”. Further reacting to the question, another respondent submitted that “PEPSA the last time they came, they visited our traditional rules and also went to churches and talked to us about the hazards associated with defecating in the open”. Another retorted that “I have been a participant of PEPSA hygiene programme, a recipient and a beneficiary of jersey, cap, T-shirt, flyers and posters”.

This finding, therefore, infers that the respondents are aware of the communication strategies employed by PEPSA concerning open defecation issues. Furthermore, it suggests that PEPSA recognises the importance of using various communication methods to deepen behaviour change.

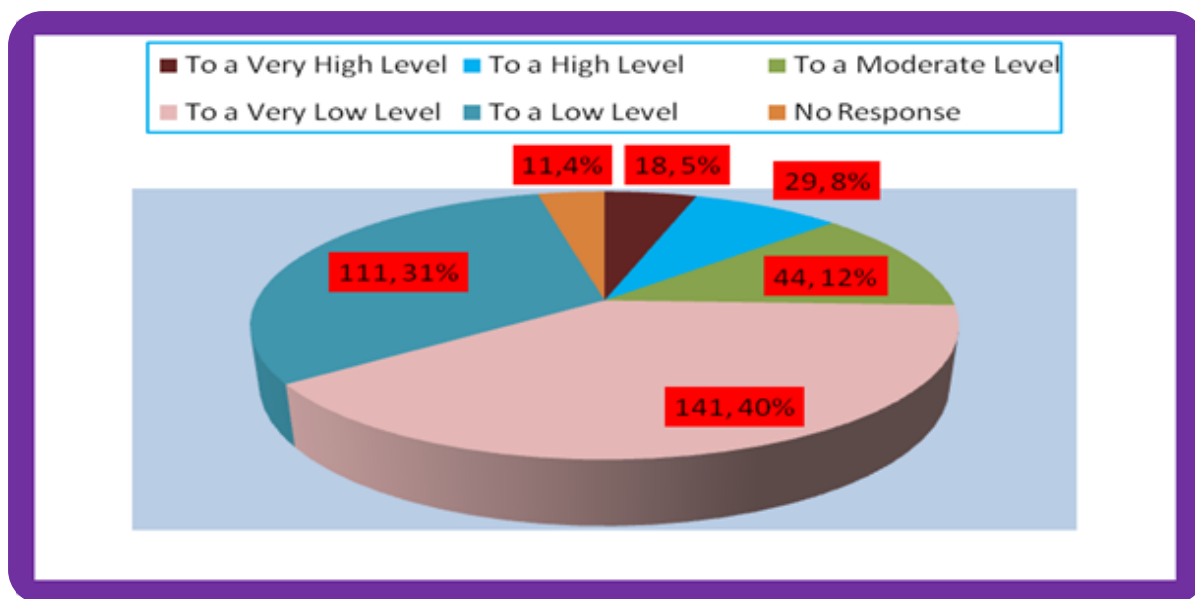


Figure 2: Extent of PEPSA’s Use of Communication Strategies in Addressing Open Defecation in your Area

It could be deduced from the result in Figure 2 that PEPSA has not extensively deployed communication to tackle open defecation in the studied areas. Therefore, the assertions by the participants above presuppose that they were not frequently updated with information regarding open defecation from PEPSA. Responding to similar question during interview, one of interviewees confirmed that “I received and read on an average of PEPSA open defecation messages sometimes once in four or five months”. Another participant affirmed that “Not frequently. But I know that most of their messages urged us to shun practicing open defecation”. One of participants further responded that “Though I got information about them sometimes in 2020, I was able to know the need to see open defecation as a dangerous practice”. Another respondent said that “No, to a low extent. I am aware that the PEPSA was here some years ago and organised workshop, but since then, I have not seen any of their activities again”. Therefore, the assertions by the participants above presuppose that they were not frequently updated with information regarding open defecation from PEPSA.

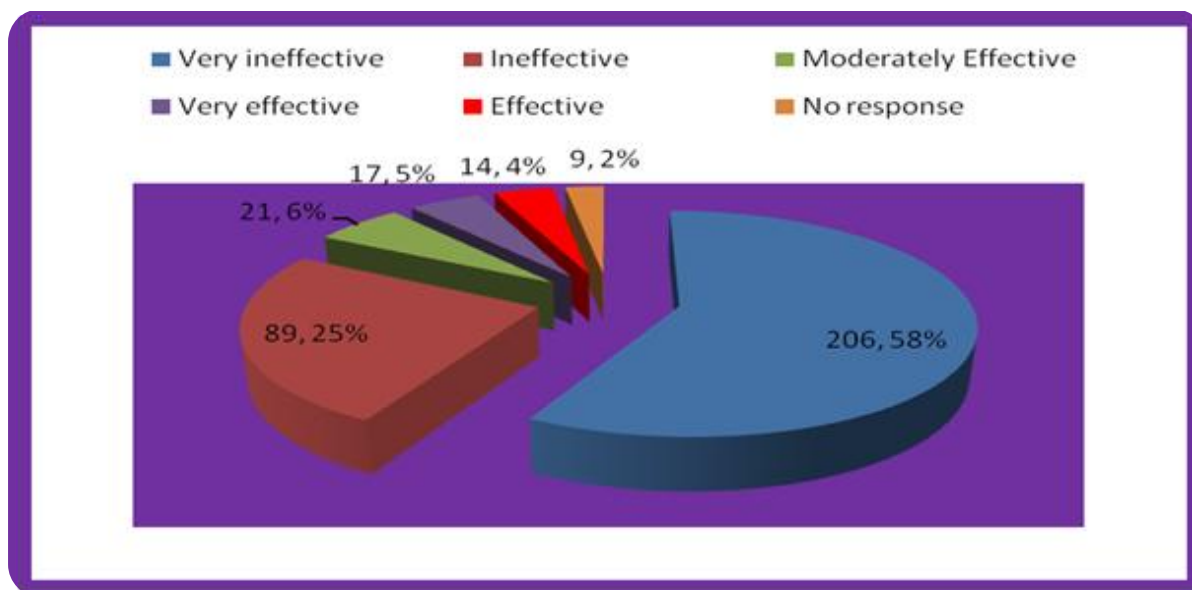


Figure 3: Effectiveness of PEPSA’s Communication Strategies in Addressing Open Defecation

Data in the above Figure indicates that the respondents rate the efficacy of PEPSA’s information and education on open defecation as not effective. The implication of this data is that a life threatening issue such as cholera needs an intensive information and education from organisations such as PEPSA so that people leaving the area covered by this study can desist from practicing open defecation.

Table 2: Could any of these be the Challenges of not Adopting and Using PEPSA’s Communication Strategies on Open Defecation in your Area?

Options	SA	A	SD	D	UD	Total	Mean Rating	Decision
Lack of understanding of PEPSA’s communication	13	27	18	143	155	356	1.8	Rejected
Held beliefs to traditional methods of defecating	214	88	9	16	29	356	4.2	Accepted

High cost of building modern toilet facilities	237	71	15	13	20	356	4.3	Accepted
Lack of sustainability of the communication strategies b PEPSA, weak monitoring and evaluation mechanism by PEPSA	251	55	6	19	25	356	4.3	Accepted

The data presented in Table 2 suggests that held beliefs, and cost of constructing modern latrines, poor monitoring and lack of sustainability of the communication strategies b PEPSA extensively slowed down the effectiveness PEPSA’s communication effort in tackling open defecation practice in Jos North Local Government Area. These limitations underscore the ongoing challenge of attitude of Nigerians to accepting new ways of keeping the environment healthy as well as poor policy and program implementation.

Many of the interviewees also contributed the voices to this result, expressing their preferences regarding open defecation practices. One participant remarked that “I prefer to go to the bush for defecation, as it is a practice I have been accustomed to since childhood”. Another interviewee noted “I also find the bush a better place to defecate, particularly because the pit toilet can often be unpleasantly odorous, leaving one with no alternative but to use the bush”. Additionally, another respondent emphasised the viewpoint that “in this area, certain individuals, regardless of the availability of toilet facilities, still choose to relieve themselves in the bush or any nearby space that the find convenient”. One interviewee further supported this claim b stating that “You mean to defecate in the stream, bush, river or an available place? Yes, I do that everyday. It is preferable to go to the bush when one feels the urge. Defecating in the bush is something that our ancestors followed. It is believed that one is less likely to contract infections when using the bush to defecate compared to utilising public toilet facilities, which are shared by many. There is no risk of infection from the bush”.

Another participant further expressed the opinion that that:

The primary reasons for that make people engage in open defecation practice stem from a lack of awareness concerning its detrimental effects. Despite hearing about the health and environmental risks associated with defecating in the open via television, radio, reading it on the pages of newspapers, many individuals remain uninformed. Additionally, the high levels of poverty and ignorance among members of various communities contribute significantly to this negative practice. While some may be aware of the health risks associated with open defecation, the often do not have the financial means to build

modern sanitation facilities, leaving them with no option than to resort to defecating in any accessible location.

Another interviewee pointed out that the near absence of education and inadequate dissemination of information regarding open defecation leads many individuals to perceive this practice as acceptable". Another respondent concurred that "Ignorance and insufficient knowledge about the harmful consequences of open defecation are significant factors contributing to its prevalence".

It could therefore be deduced that the communication strategies employed by PEPSA to address open defecation in the studied communities in Jos North Local Government Area have not yet achieved their intended objectives and goals. This shortfall can be attributed to several challenges, including the people's attitude to lack of sustainability of the communication efforts, ignorance, weak evaluation and monitoring mechanisms by PEPSA, among others.

Discussion of Findings

The finding of the study as showed in Table 1 revealed the communication strategies to include: use of conventional mass media like television, radio, newspapers, magazines; use of social media such as Facebook, Whatsapp, X, Instagram, YouTube, TikTok; and distribution of leaflets, flyers, pamphlets otherwise known as information education communication materials. Others are town hall meetings with stakeholders, engagement of town criers, community theatre, use of traditional and religious worship centres, and use of billboards, pasting of information on walls, and other strategic locations and use of banners. Very important to the findings of the study, further is that majority of the respondents were aware of PEPSA's communication strategies in addressing open defecation in their various communities.

This finding is in line with some of other scholars like Anjuwon and Okiyi (2018) who found that in social development strategies, communication techniques such as town hall meetings, market square meetings, community engagements, radio jingles and talk shows, flyers, posters, handbills, traditional rulers, churches, schools, age groups, women associations, family heads, field visits, film shows, drama, face-to-face meetings and others are used. Rhee (2008) revealed that a strategic communication is deliberate, and the emphasis is on designing appropriate messages, processes and outcomes of message delivery, using various means like traditional and religious leaders, gathering people in a place and talking to them, pasting of banners and distribution of flyers and pamphlets, use of traditional and new media.

Analysis of the findings further revealed the extent of communication strategies used by PEPSA in addressing open defecation in Jos North Local Area. Results indicated that the communication strategies have not been frequent. This implies that the practice of open defecation may continue to thrive among members of the studied communities. This finding is in agreement with earlier studies by some scholars such as Melea (2023) found that *Daily Trust*, *ThisDay* and *Nigerian Tribune* under report open defecation menace in Nigeria. This finding is however contrary to that Kakade (2015) who stated that newspapers have been used to deepen open defecation policies and programmes of the Indian government.

The implication of this data is that a life-threatening issue such as cholera needs an intensive information and education from the relevant organisations like PEPSA so that people leaving not only in communities covered by this study in can desist from practicing open defecation. This means that there should be regular sensitisation programmes and use of various enlightenment communication strategies to continually raise awareness about the dangers of open defecation.

Findings equally showed that PEPSA's communication messages on open defecation have not been satisfactory. The implication of this is that insufficient information and enlightenment about open defecation might lead to continue rise in this practice among the people of the studied area and that cholera and other diseases associated with contamination of the environment and water may continue to affect people in the studied communities. It also implies that open defecation practice is still high among the people. This finding align with that of Coffey et al (2014) who found that there was high rate in the practice of open defecation in rural communities which remains stubbornly widespread with several dire consequences for human health and the environment alike. The finding is however, contrary to that of Okon and Ikpi (2019) who found that most of the respondents attended sensitisation programmes which led to some community members abandoning the practice of open-defecation; and that many of them have toilets and do not defecate in the open, while about a quarter of the respondents still defecate in the open because they lack information on the dangers of such practice. Also, Ugwu (2017) research corroborates that social and behaviour change communication (SBCC) played significant roles in addressing the behavioural and attitudinal challenges affecting the eradication of open defecation in Nigeria.

The findings of this research further highlighted some challenges hindering the assimilating of PEPSA's communication strategies concerning anti-open defecation menace. These obstacles

include: Held beliefs to traditional methods of defecating, high cost of building modern toilet facilities, and weak monitoring and evaluation mechanism by PEPSA. The finding revealed that peoples' attitudes to a great extent influence their indulgence in defecating in open space. This was also reflected in the qualitative data too, with most of the respondents noting how difficult it is to build modern toilet facilities and shun traditional practice of open defecation.

The implications are that these challenges could undermine efforts not only by PEPSA to curb open defecation practices, but also efforts by other similar organisations. These challenges highlight the difficulty of changing peoples' behaviours through the use of communication, especially in an environment where the people are used to old practices.

Conclusion

From the findings of the research, it is concluded that PEPSA employed various communication strategies such as town hall meetings with stakeholders, engagement of town criers, community theatre, use of traditional and religious worship centres, and use of billboards, pasting of information on walls, and other strategic locations and use of banners. Others are the use of conventional mass media like television, radio, newspapers, magazines; use of social media such as Facebook, Whatsapp, X, Instagram, YouTube, TikTok; and distribution of leaflets, flyers, pamphlets otherwise known as information education communication materials. However, these communication strategies have not been effective due to a number of challenges highlighted in the study.

Recommendations

From the conclusions of the study, the following recommendations were proffered:

1. PEPSA should increase the knowledge of the people regarding open defecation through increased use of various communication methods or strategies.
2. PEPSA in partnership with various stakeholders, especially those concerned with environmental issues, should increase the involvement of volunteer health and environmental communicators. These individuals can effectively educate communities where open defecation is pronounced about the risk associated with this practice.
3. As a policy recommendation, the Nigerian government ought to study the policies and programmes of other nations that have used community-based methods to achieve

success in open defecation issues. Such policies and programmes that the Nigerian government can take a look at include that of Indian government known as the Clean India Mission (SWACHH Bharat Mission) launched in 2014. The programme's primary objective is to embark on the building modern toilet facilities in households and in strategic locations in various communities. The Indian fight against open defecation initiative uses community engagement approaches such as constant town hall meetings, seminars, among others to sensitise the people on the need to avoid open defecation practice.

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