

# Impact of Health Education Campaigns on Awareness and Attitudes Towards Environmental Sanitation and Waste Management Practices

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## Abstract

**Background:** Environmental sanitation and effective waste management are critical determinants of public health and environmental sustainability, particularly in developing communities where improper practices remain prevalent.

**Objectives:** This review examines the impact of health education campaigns on the level of awareness, attitudes, and practices related to environmental sanitation and waste management.

**Method:** The research adopts a descriptive and analytical approach using existing scholarly literature published from 2015 to 2025 to assess the changes in knowledge and behavioral attitudes before and after exposure to structured health education interventions delivered through community outreach programs, media campaigns, and school-based education.

**Results:** Health awareness activities in Nigeria have expanded in recent years, evidenced by a 75% increase in COVID-19 vaccination uptake and a 50% rise in mental health consultations, alongside improved heart-health awareness, increased primary healthcare utilization, and high HPV vaccination coverage. These gains have been accompanied by more positive attitudes toward sanitation and community responsibility, though inadequate infrastructure, weak policy enforcement, and socio-cultural barriers continue to limit the translation of awareness into sustained healthy practices.

**Conclusion:** The study concludes that health education campaigns are effective tools for promoting positive attitudes and improving environmental sanitation and waste management behaviors. It recommends the integration of continuous health education with supportive policies, community engagement, and improved waste management facilities to achieve long-term environmental and public health benefits.

## A. Introduction

The health education and awareness campaigns are powerful supports that have the potential to transform the lifestyle of people, as well as the health of their communities (Settersten et al., 2020). Such programs are important to disseminate the message about the need to detect illnesses early, make healthy lifestyle

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choices, and prevent diseases (Pronk et al., 2021). Such programs encourage a proactive healthcare behavior since they can reach out to various audiences using various platforms and channels and trigger a collective awareness regarding issues related to health (Wilkins et al., 2022). The impacts of health education and awareness programs extend way beyond the change in the behavior of individual people. Such programs assist in meeting greater public health objectives such as reducing healthcare spending, enhancing the quality of life, and reducing the incidence of chronic illnesses through the promotion of a preventive and early intervention attitude (Englund et al., 2020). The initiatives can help to decrease health inequalities and achieve inclusive health outcomes among diverse populations through the work of the initiatives that will target the root causes of poor health and ensure that people have equal access to resources and information (Thapliyal et al., 2024).

Health awareness campaigns are vital to the health of the population (Rayan et al., 2022), and they are the tools of the base to educate, inform, and encourage people and communities to incorporate healthier behavior, resulting in the prevention of illnesses (WHO, 2018), lower health burden, and health outcomes, due to effective communication, media coverage, and customized approaches that enhance knowledge and behavior change, such as vaccination or eating healthy (Johnson, 2018; Phillips et al., 2018). Such campaigns are meant to create awareness, behavior change, and attitude change (Garcia, 2019). Non-communicable diseases are a major burden in the world. Unhealthy lifestyles such as tobacco use, lack of exercise and poor dieting predisposes one to a number of chronic diseases. Avoiding disease through public health campaigns is meant to raise awareness and motivate populations to embrace healthy lifestyles (Lee, 2016; Rayan et al., 2022).

Environmental sanitation and effective waste management are critical components of public health and sustainable development. Poor waste disposal contributes to environmental degradation, increased disease transmission, and reduced quality of life, especially in developing communities with limited infrastructure and resources (Anthonia et al., 2025). Health education campaigns aim to raise awareness, influence attitudes, and motivate positive behavioural change toward environmental sanitation and waste practices. Studies show that health education can significantly improve knowledge and behaviors related to waste management, although the translation from awareness to sustained practice is inconsistent across contexts. These campaigns serve as vital tools to bridge gaps in understanding and community engagement in sanitation efforts (Karout & Altuwaijri, 2015).

Reports showed that while health education campaigns improve knowledge and attitudes toward sanitation, (Ezeaka et al., 2025) argued that these gains often do not lead to long-term behavioral change. Effectiveness varies across demographics, and the lack of sanitation infrastructure can limit practical adoption of good practices. Additionally, inconsistent study designs and metrics make it difficult to assess or compare the sustained impact of such campaigns. This review examined the impact of health education campaigns on awareness and attitudes towards environmental sanitation and waste Management practices.

Sanitation and sound waste management of the environment are the cornerstones of communal wellbeing and health. They are essential in disease prevention, environmental protection, and the general quality of life of people and communities (Okoro & Nweke, 2019). Poor sanitation and poor waste disposal habits are some of the major causes of many health issues including the infection of communicable diseases like cholera, typhoid, malaria, and respiratory diseases. Additionally, poor sanitation is a factor that leads to environmental degradation by polluting water bodies, soil, and increasing the population of vectors, such as mosquitoes and rodents that further increase health risk (Imoh & Asuquo, 2018; Amusan & Amidu, 2019).

The problem of environmental sanitation in most developing areas including some parts of Nigeria is attributed to the lack of infrastructure, awareness of people and the absence of effective waste management systems. These issues are aggravated by the high rate of population increase, urbanization and socio-economic constraints which limit the provision of proper sanitation services. As a result, the communities are still susceptible to heal (Ajibade & Akinbode, 2016).

In Nigeria, environmental sanitation practice is crucial in determining the efforts made to have clean and healthy living conditions, prevent diseases spread, and environmental protection. (Danbaba et al., 2016) defined environmental sanitation to include those rules and actions intended to provide a healthy and hygienic environment. This entails the adequate collection, disposal or removal of human excreta, household wastewater and refuse, which has an effect on people and leads to the enhancement of public health, welfare, enhanced quality of life, reduction of poverty, and sustainable development. Sanitation is not limited to the availability of toilets or latrines, but it is considered as health and hygiene awareness, affordable and sustainable provision, and proper behavior. Poor sanitation is not only limited to poor accessibility to toilets but also on the importance of excreta treatment systems and wastewater systems in the sanitation value chain. Lack of proper treatment of wastewater has far-reaching effects, such as the degradation of the environment, drinking water pollutions, and many other related effects in health and livelihood (Torlesse et al., 2016).

Environmental sanitation is very important in terms of protecting the health, productivity and well being of the communities. It involves adequate disposal and treatment of human excreta, solid waste, and wastewater, and management of disease vectors, and provision of personal and domestic hygiene washing facilities. This holistic strategy works together to produce a clean environment (Schertenleib, 2015). Although sanitation and better hygiene have improved the health outcomes to a great degree, there remains one major challenge, namely, many people have inadequate means of disposing their waste in a proper manner. This is especially troublesome in the crowded neighborhoods where there is increased danger of infectious diseases and more specifically to the highly susceptible population such as the very young, the elderly and people with weakened immune systems. The uncontrolled waste management leads to daily contact with the unacceptable environmental conditions (Sommer et al., 2015).

Serious concern has been the importance of water supply, sanitation and hygiene, which have been incorporated under human development measurement through their inclusion in Sustainable Development Goal 6 Sustainable Development Goal 6 (SDG 6). This increased concern is supported by the official reports, which show that about a billion people on the planet do not have access to better drinking water sources, and 2.6 billion people do not have sanitation. In Nigeria, water and sanitation rights are still one of the issues that cause high morbidity and mortality rates among children younger than five years old. The use of polluted drinking water and lack of sanitary facilities makes people highly prone to water-borne illnesses especially diarrhoea, which leads to the death of more than 70,000 children under five years (Schertenleib, 2015).

Awareness campaigns on health education can be used to fill knowledge gaps and provide individuals with actionable insights to take good care of their health (Alotaibi et al., 2021). It has been shown that higher levels of risk factor awareness like tobacco use, poor dieting, and sedentary lifestyles result in major behavioral changes (Broniatowski et al., 2018). As an example, the prevalence of smoking is decreasing globally with the help of anti-smoking campaigns, which demonstrates the transformative nature of the awareness program. Equally, hand hygiene and vaccination education have been key to controlling infectious diseases like the COVID-19 and influenza (Chou et al., 2020).

Health education awareness plays an important role in the prevention of communicable and non-communicable disease (NCD) (Loomba et al., 2021). The concept of awareness, to be applied in the prevention of communicable diseases, especially in regard to hygiene practices, vaccination and early diagnosis has been effective in curbing the outbreak. As an example, the World Health Organization campaign Vaccinate Your Family has raised the vaccination rates in the underserved areas substantially (Chou et al., 2020).

Another factor that leads to a decrease in the health disparity is public health awareness activities targeting marginalized demographics with limited access to healthcare resources (WHO, 2019). Multi-purpose campaigns based on cultural, language and socioeconomic aspects are important to the achievement of the

diverse groups. The health education awareness programs also focus on the role of health literacy in enabling underserved groups to make knowledgeable health decisions and demand improved access to healthcare (Noar et al., 2017).

Health education can remain effective even when physical facilities like toilets or trash bins are lacking by focusing on behavior change, community engagement, and low-cost alternatives. For instance, (Aseyo et al., 2018) argued that people can be taught safe practices such as hand washing with available resources, proper waste disposal in temporary pits, and reducing open defecation. Education can also mobilize communities to organize clean-up efforts, construct simple latrines, and advocate for improved infrastructure. Promoting risk-reduction habits, using innovative interim solutions like tippy-taps, and empowering communities to demand better sanitation help minimize disease transmission. Knowledge and collective action can significantly improve health outcomes despite infrastructural limitations (Garn, 2021).

## B. Methods

Based on a literature review methodology, this study used a descriptive and analytical research design. The main sources of data for the study were already published academic works from 2015 to 2025. Peer reviewed journal papers, reports, and other scholarly publications that explored how health education campaigns influenced public knowledge and behavioral attitudes around waste management and environmental sanitation were among these sources.

Relevance to the research objectives informed the selection of literature, with an emphasis on studies that examined changes in knowledge, attitudes, and practices prior to and following exposure to structured health education interventions. The community outreach activities, mass media campaigns, and school-based education projects that promoted environmental cleanliness and appropriate waste management techniques were among the interventions examined in this study.

Descriptive and comparative methods were used to analyze the data. To detect patterns, trends, and recurrent results pertaining to gains in awareness and behavioral attitudes, the results from the chosen research were methodically analyzed. Additionally, an analytical interpretation was used to evaluate the efficacy of various health education initiatives and investigate the variables determining their limitations or success in diverse social and cultural contexts.

The study was able to provide a thorough knowledge of how health education programs contribute to changes in public awareness and attitudes toward environmental sanitation and waste management practices because to this methodological approach, which also allowed the study to combine previous information.

## C. Results and Discussion

### 1. Results

There is no officially published nationwide statistic that quantifies the overall percentage increase in health awareness campaigns in Nigeria across all health sectors (Iwegbue et al., 2024). This is largely because health promotion activities in the country are implemented by multiple actors including the Federal and State Ministries of Health, international development partners, NGOs, faith based organizations, and community groups without a centralized system for aggregating campaign frequency or coverage into a single national metric (Okunade et al., 2024).

Nevertheless, evidence from specific, well-documented campaigns demonstrates substantial growth and impact of health awareness efforts in recent years (Effiong et al., 2023). For example, large-scale risk communication and community engagement initiatives during the COVID-19 pandemic were associated with an estimated 75% increase in vaccination uptake, highlighting the effectiveness of targeted messaging, community mobilization, and media outreach (John-Akinola & Adeyemo, 2025). Similarly, mental health awareness campaigns, particularly those using mass media and digital platforms, have been linked to approximately a 50% rise in mental health consultations, reflecting reduced stigma and improved help-seeking behavior. In the area of non-communicable diseases, heart-health awareness initiatives reportedly led to about a 35% improvement in public awareness, alongside increased participation in preventive health checks (table 1) (Iwegbue et al., 2024).

**Table 1.** Health awareness campaign in Nigeria

Health Area	Type of Awareness Campaign	Reported Increase / Impact	Key Outcome Indicators
COVID-19	Vaccination awareness and risk-communication campaigns	~75% increase in vaccination uptake	Improved public confidence, higher vaccination coverage
Mental Health	Mass media and community-based mental health awareness campaigns	~50% rise in mental health consultations	Reduced stigma, increased help-seeking behavior
Cardiovascular Health	Heart-health education and lifestyle awareness programs	~35% improvement in public awareness	Increased preventive health checks and screenings
Primary Health Care	Integrated health promotion and community outreach	Significant increase (indirect indicator)	Higher utilization of primary healthcare services
HPV & Cervical Cancer	HPV vaccination awareness and school/community mobilization	High coverage (near-target achievement)	Increased HPV vaccination uptake among eligible populations
Overall Health Awareness (National)	Multi-sectoral health promotion activities	No aggregated national percentage available	Evidence of expansion inferred from campaign outcomes

Beyond individual campaigns, indirect indicators further suggest an expansion of health awareness activities nationwide (Okunade et al., 2023). These include rising utilization of primary healthcare services, improved community participation in preventive programs, and the high uptake of HPV vaccination, which reached a substantial proportion of the target population following intensive awareness and mobilization efforts. Collectively, these outcomes indicate that health awareness campaigns in Nigeria have expanded in scope, reach, and effectiveness, even though a single aggregated national percentage increase has not been formally reported (Effiong et al., 2023).

## 2. Discussion

### Effectiveness of Health Education and Awareness Training.

Several researches have proven the impact of health education awareness campaign in encouraging healthy behaviors. Indicatively, a study conducted by (Smith et al., 2017) established that a campaign about physical activities among adults caused an increase in the number of people who regularly exercise. In the same way, (Jensen et al., 2015) carried out a study on a healthy eating campaign and discovered that it resulted in the massive reduction of drinking sugary beverages by children. Besides advocating certain healthy behaviors, public health campaigns have been effective in creating awareness about the dangers of a given unhealthy behavior. Indicatively, a research conducted by (Johnson et al., 2018) identified that a smoking management campaign about the health risks of smoking resulted in a reduction in the smoking prevalence among teenagers. The results indicate the effectiveness of health education awareness campaigns in terms of behavioral change and the establishment of healthy lifestyles (Onyedibe, 2017).

Health education can overcome infrastructural barriers by using community spaces (markets, schools, religious centers), training local health educators, employing mobile and radio-based communication, integrating programs into existing campaigns and schools, using low-cost visual and cultural materials, partnering with NGOs and private sectors, and monitoring with simple tools enabling effective health learning without relying on formal facilities (Junejo et al., 2025; Pierre & Dzinamarira, 2019).

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## Promotional Health Education Initiatives and Human Health

Educational campaigns are one of the major factors in promoting mental wellbeing and minimizing the stigma surrounding mental illness (Bjornsen et al., 2019). The programs aim to minimize barriers to help and support seeking through education about common mental health problems, coping, and resources (Dyrbye et al., 2019). It will aim at encouraging early identification and treatment. Moreover, these programs enable individuals to address the challenges of life and enhance their mental health through learning more about mental health problems and learning the methods to be resilient (Feller et al., 2018).

Nutrition education is another significant component of health promotion and helps people gain the knowledge that would enable them to make more responsible food choices (Feller et al., 2018). An educational program would enable individuals to develop healthy eating behaviors, by emphasizing the importance of the balanced diet, controlling of the portion, and eating mindfulness. Moreover, nutrition education programs are often intended to promote the variety of the food people eat and eradicate inequalities in access to healthy food to help everyone in the population to nourish their bodies with healthy options (Dyrbye et al., 2019).

Moreover, the stress management education programs train individuals on how to cope with the demands of the contemporary life and how to become emotionally resilient (Hammond et al., 2020). Such programs prepare one to be generally able to cope with stresses and enhance their general well-being by learning relaxation methods, mindfulness, and effective stress-reduction strategies. Self-care should also be given priority and well-formed coping methods should be developed. These initiatives raise awareness regarding the adverse impact of chronic stress on the outcome of health (Corbett et al., 2018).

### Effects of Health Awareness Programs and Campaigns on the health of people.

The long-term impact of health awareness campaigns and educational initiatives on preventative healthcare behaviors is an aspect that should be determined when assessing their consequences (Dye, 2018; Igwe & Nwankwo, 2020). Scientists have demonstrated that such campaigns have the ability to alter the minds of people regarding the importance of preventative care, which consequently translates to the increment in the number of people who undergo screenings, immunizations, and other forms of preventive treatments (Ayuba & Bello, 2015). To minimize the chances of becoming sick and ensuring people remain healthy, such programs seek to enhance their opportunities to know about their health, providing means of making healthy decisions, and ensuring that individuals become responsible of their health (Jennings et al., 2019; Eze & Okafor, 2017).

Other concerns that have to be considered when analyzing the sustainability and long-term consequences of health education initiatives include socioeconomic status, cultural practices, and environmental influences (Adebayo & Oladipo, 2017). According to research, limited access to resources, social support, and healthcare services are some of the specific barriers that individuals with marginalized or disadvantaged backgrounds might face in the attempt to sustain positive behavioral changes. The health education programs will be more effective and sustainable over time to guarantee that people have an opportunity to achieve their optimal health results, should they address these systemic barriers and promote health equity (Dye, 2018).

Hygiene (hand washing, sanitation), infection, and vaccination can be used to educate to reduce the transmission of diseases such as cholera, malaria, and influenza (Budreviciute et al., 2020). Awareness campaigns inform people about the risk factors (poor diet, physical inactivity, tobacco use) and the significance of healthy lifestyles in the prevention of such conditions as heart disease, diabetes, and some types of cancer (Okechukwu & Oboshi, 2021). In case of those who already have conditions, education allows them to know how to take care of themselves, how to take medicine and how to cope with the

situation to have their health well and avoid complications. Awareness programs lessen the stigma of mental illness and offer people methods and coping abilities to manage stress and assistance information on where to obtain help in case of anxiety and depression (Manli et al., 2018). Educational programs at schools and communities encourage healthy eating, eating in moderation, and physical activities, and counter the problems of obesity and health complications. The thorough sex education about sexual aspects, safe sex, birth control, and consent encourage responsible behaviors and decrease the risks of STIs and unwanted pregnancies (Kristina et al., 2024). Vital health information is delivered to large populations through mass media (TV, radio, social media) and community workshops and this aspect of social work affects social norms and can create behavior change at community levels. Health education informs the formulation of the population policy (e.g., anti-smoking laws, financial incentives of healthy food) and assists in decreasing the total amount of healthcare spending by emphasizing on cost effective preventive actions (Huda et al., 2017). Health education equips individuals, especially communities that cannot afford health services, to take charge of their health and fight health disparities through the provision of accessible and culturally sensitive information (UNESCO, 2020).

### **Future Outlook of Health Education, Sanitation, and Awareness Campaigns.**

The future of health education, sanitation and awareness campaigns looks bright due to technological advancement, policy cooperation, and increasing awareness by people on the relationship between hygiene, environment, and general well-being. The future prospects will include the following:

#### **1. Digitization of Information Systems**

The Information and communication technologies will be improved and the effectiveness and the reach of the health education campaigns will be extended. Mobile health (mHealth) applications, social media, e-learning tools and community radio will enable customized message delivery, instant feedback and broader reach particularly in the youths and inaccessible communities.

#### **2. Participatory and community-Centered Approaches**

The current campaigns are bound to be more community-owned in the future. The involvement of the local leaders, schools, and religious organizations, as well as the youth groups, will facilitate the adoption of behavioral changes, culture acceptance, and long-term maintenance of sanitation behaviors.

#### **3. Better Policy and Institutional Backing**

Governments and international bodies are supposed to reinforce policies to incorporate health education and sanitation in the national developmental strategies. Better campaign results will be attained through increased funding, monitoring, and inter-sectoral collaboration (health, education, environment, and urban planning).

#### **4. Limit Environmental Sustainability and Climate Resilience**

Health education will more focus on environmental sanitation regarding climate change, waste recycling, water conservation, and pollution. This interdisciplinary strategy will aid communities to adjust to the environmental health hazards like floods and epidemics.

#### **5. Health Education School-Based Expansion**

Schools will be more instrumental in influencing the attitudes of the long term on sanitation and hygiene. Integrating practical hygiene education in schools will contribute towards the cultivation of thoughtful habits at a tender age.

#### **6. Evidence-Based Campaigns**

Campaigns will be more precise, efficient, and measurable with the help of data analytics, geographic information systems (GIS), and frequent impact evaluations to improve the process and be answerable continuously.

## 7. Innovation and Public-Private Partnerships

The interaction between governments, NGOs, the private sector organizations and community-based organizations will lead to effectiveness in sanitation infrastructure, waste management technologies and health communication (Manli et al., 2018).

## D. Conclusion

The study concludes that health education campaigns play a vital role in improving awareness, shaping positive attitudes, and promoting better practices related to environmental sanitation and waste management. Through targeted education and consistent messaging, individuals become more informed about the health and environmental risks associated with poor sanitation, leading to increased willingness to adopt responsible waste management behaviors. The observed improvements in knowledge and attitudes demonstrate that education is a powerful catalyst for behavioral change at both individual and community levels. However, the effectiveness of health education campaigns is influenced by supporting factors such as availability of waste management infrastructure, enforcement of environmental regulations, and sustained community involvement. While increased awareness often leads to improved attitudes, translating this awareness into long-term practice requires continuous education, policy support, and accessible sanitation facilities. Therefore, a holistic approach that combines regular health education campaigns with strong institutional support, community participation, and adequate resources is essential for achieving sustainable environmental sanitation and effective waste management practices.

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## F. Author Contribution Statement

BU contributed to the research design, literature review, data collection, analysis, and interpretation of findings, as well as manuscript preparation. BU also reviewed and approved the final version of the manuscript for publication.

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