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Waste Disposal Practices, Environmental Attitudes and Wellbeing of Undergraduates in Lagos State, Nigeria.

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ABSTRACT

Healthy living of residents in every society is a prerequisite for continuous growth in the society. It has been observed that schools especially tertiary institutions are sited close to industries and markets in Lagos state which has made waste becomes a menace to students' wellbeing. Hence, this study was conducted to examine waste disposal practices, environmental attitudes and well-being of undergraduates in Lagos State. The study was guided by 3 research objectives which is to determine the relationship between waste disposal practices and environmental attitudes among undergraduates. Also, to determine the relationship between waste disposal practices and well-being of undergraduates and to determine the relationship between environmental attitudes and well-being of undergraduates in Lagos State. The study adopted a cross-sectional survey research design. The population of the study covered all undergraduate students in Lagos State. Purposive and simply random sampling technique was used to obtain 240 respondents. Data were collected through a self-structured questionnaire. The data obtained were analyzed using Pearson Product Monument Correlation Coefficient. The study found that there is a significant relationship between waste disposal practices and environmental attitudes of undergraduates; waste disposal practices and well-being of undergraduates and finally a significant relationship was found between environmental attitude and well-being of undergraduates in Lagos State. Based on the findings of the study, it was concluded that waste disposal practices and environmental attitude remained significant factors that are associated with undergraduates' well-being and recommends that adequate sensitization and awareness programmes should be done in tertiary institutions to inculcate right environmental attitude that foster proper waste disposal practices among students.

KEYWORDS: *Environmental Attitudes, Lagos State, Undergraduates, Waste Disposal Practices, Well-Being.*

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1. Introduction

Humans are depending on the environment for numerous things to satisfy their needs of food, dress materials, devices, building constructions, vehicles, etc; and those are received from our environment and used by us in our daily activities (Vijayalakshmi, 2020). Protecting our mother earth from the pollution has become a massive challenge for all. In order to preserve our natural resources as well as enjoyed healthy living especially among university students, waste materials should be appropriately managed; so that all living beings on this earth can live safely and securely and can benefit from it. Waste has so many synonyms – such as trash, garbage, junk or anything worthless. Waste can be perceived as any unwanted or undesirable material that is, they are no longer needed or does not have any function anymore, although, some may still be useful through recycling. (Vijayalakshmi, M., 2020). Besides, sound health of residents in every society is a prerequisite for continuous growth in the society. It has been observed that schools especially tertiary institutions are sited close to industries and markets in Lagos state which has made waste

becomes a menace to students' wellbeing.
The unregulated dumping of waste has become a global concern, contributing to pollution, environmental degradation, flooding and disease outbreaks (Ofoezie et al, 2022). This is because of the adverse effects it has on the populace. According to Salami, et al. (2024), indiscriminate wastes disposal and management as observed, in a public establishment like a university remain a growing problem. Students and staff disposal waste indiscriminately. Similarly, the continuous usage of plastic and polythene packaging has to a greater extent contributes to waste management challenges on university campuses (Wondimu, 2020). Conversely, the dumping of waste near hostels, offices, and classrooms characterized by poor management attracts pests and disease vectors, posing serious health risks. The rapid expansion of university populations could exacerbate this issue, as waste generation outpaces proper disposal capacities. There is a paucity of information on the attitudes and knowledge of university undergraduates about waste management, with little information available from other higher institutions in Nigeria. It is essential to ascertain whether students are aware of the health hazards linked to improper waste management in order to promote appropriate behaviours that safeguard public and individual health (Salami, et al., 2024). Besides, environmental attitudes of individuals in an educational setting needs to be examined. This is because positive environmental attitudes to has the capacity to promotes proper waste disposal practices.

According to Iloh and Inmpey (2023), waste management includes all actions related to handling waste materials, particularly collection, transportation, processing, and disposal, with the aim of reducing environmental hazards and promoting sustainability. This perspective highlights that effective waste disposal is not merely about discarding waste but ensuring it is managed responsibly throughout its lifecycle. In recent years, the concept of waste disposal has evolved significantly due to increasing environmental awareness and the need for sustainable resource utilization. Modern approaches now emphasize the waste hierarchy, which prioritizes waste reduction, reuse, and recycling before final disposal. This framework reflects a shift from traditional disposal methods such as open dumping and uncontrolled burning toward more environmentally friendly practices like recycling, composting, incineration with energy recovery, and sanitary landfilling. Studies show that the integration of waste hierarchy and circular economy principles helps reduce the volume of waste disposed of in landfills and promotes resource efficiency.

Waste is an unavoidable consequence of the need for survival. To live, we eat, drink and provide other necessities of life. In addition, poor waste handling especially disposal practices and inadequate provision of solid waste management facilities in schools and developing countries result in indiscriminate disposal and an unsanitary environment that pose a threat to the health of secondary school students and urban residents (Woko & Ogoloco, 2019). According to Boakye-Ansah, et al. (2023) revealed that poor student behavior in waste management is a major obstacle for rural schools, urban schools had the challenge in terms of poor waste collection practices. While, the formation of environmental education clubs by school authorities among students can be a sine qua non for effective waste management practices among students, especially for rural people. Waste sorting plans within the waste management system in societies require accurate planning and cooperation of all residents. In particular, successful waste management programs for colleges and universities, as a large community, need the support and effective participation of residents. College students are the most important part of college community residents, and their attitude and participation in campus waste disposal practice play a key role in the successful implementation of college waste disposal and management projects. Therefore, this study is conducted to critically examine the waste disposal practices, environmental attitudes and well-being of undergraduates in Lagos State, Nigeria.

Objectives of the Study
The main objective of the study is to examine waste disposal practices, environmental attitudes and wellbeing of undergraduates in Lagos State. Other specific objectives are:

1. To determine the relationship between wastes disposal practices and environmental attitudes among undergraduates in Lagos State.
2. To determine the relationship between wastes disposal practices and well-being of undergraduates in Lagos State
3. To determine the relationship between environmental attitudes and well-being of undergraduates in Lagos State.

Research Questions

The following are the research questions guiding the study:

1. Is there any significant relationship between wastes disposal practices and environmental attitudes among undergraduates in Lagos State?
2. Is there any significant relationship between wastes disposal practices and well-being of undergraduates in Lagos State?
3. Is there any significant relationship between environmental attitudes and well-being of undergraduates in Lagos State?

Research Hypotheses

$H0_1$: There is no significant relationship between wastes disposal practices and environmental attitudes among undergraduates in Lagos State

$H0_2$: There is no significant relationship between wastes disposal practices and well-being of undergraduates in Lagos State

$H0_3$: There is no significant relationship between environmental attitudes and well-being of undergraduates in Lagos State

2. Literature Review

The Concept of Waste

From a general point of view, waste refers to **any material, substance, or by-product that is discarded after primary use because it is no longer considered useful or valuable to the user.** This definition emphasizes the idea that waste is not inherently useless, but becomes so based on human perception and context. According to the United Nations Environment Programme (UNEP, 2023), waste is defined as *substances or objects which are disposed of, intended to be disposed of, or required to be disposed of by the provisions of national law.* This definition highlights the legal and regulatory dimension of waste, stressing that waste management is governed by environmental policies and standards. Similarly, the World Health Organization (WHO, 2024) defines waste as *any substance or object that the holder discards, intends to discard, or is required to discard, which may pose risks to human health and the environment if not properly managed.* This definition links wastes directly to public health and environmental safety. Tchobanoglous et al. (2022) describe waste as **materials arising from human and animal activities that are normally discarded as useless or unwanted**, particularly in the context of solid waste management. This definition underscores the anthropogenic (human-generated) nature of waste. Wilson (2023) conceptualizes waste as **a misplaced resource that can be recovered, reused, or recycled within a circular economy system**, thereby transforming waste from a problem into a potential economic and environmental asset.

Omar, Hossain and Parvin (2018) conceptualized waste as unwanted remains, residues discarded and material or by products which are no longer required by the initial user. These materials are by-products of human activities such as process of preparation, manufacture, packing, repacking, unpacking, construction, renovation of structures and mining operations. Solid Waste is any solid material that comes from domestic, commercial, industrial, agricultural and demolition activities, and is regarded as unwanted by those who own it (Muaaz, 2017). Waste management usually relates to all kinds of planned activities concerned with the proper handling and disposal of waste from the point of generation to the point of final disposal. Wastes are generated during the extraction of raw materials, the processing of raw materials into intermediate and finished products, the consumption of final products, or other human activities in the society (Sankoh, Yan & Tran, 2013).

According to Iloh and Inmpey (2023), waste management includes all actions related to handling waste materials, particularly collection, transportation, processing, and disposal, with the aim of reducing environmental hazards and promoting sustainability. This perspective highlights that effective waste disposal is not merely about discarding waste but ensuring it is managed responsibly throughout its lifecycle.

In recent years, the concept of waste disposal has evolved significantly due to increasing environmental awareness and the need for sustainable resource utilization. Modern approaches now emphasize the waste hierarchy, which prioritizes waste reduction, reuse, and recycling before final disposal. This framework reflects a shift from traditional disposal methods such as open dumping and uncontrolled burning toward more environmentally friendly practices like recycling, composting, incineration with energy recovery, and sanitary landfilling. Studies show that the integration of waste hierarchy and circular economy principles helps reduce the volume of waste disposed of in landfills and promotes resource efficiency.

Types of wastes

Unarguably, whenever human beings exist, there will be waste at the same time (Jayarama, 2017). There are so many types of waste on the planet earth but a few shall be mentioned here, for the purpose of the study, however we shall classify waste according to their origin namely, biodegradable waste, biomedical waste, business or commercial and industrial waste, chemical waste, medical (clinical) waste, institutional waste, construction waste, municipal solid waste (MSW) controlled and hazardous waste. These wastes are discussed below

The encyclopedic dictionary of environment (2017) defined biodegradable waste as a type of waste, typically originating from plant or animal sources, which may be broken down by other living organisms. Waste that cannot be broken down by other living organisms may be called non-biodegradable. Solid Waste, also called urban solid waste, is a waste type that includes predominantly household waste (domestic waste) with sometimes the addition of commercial wastes collected by a municipality within a given area. They are in either solid or semisolid form and generally exclude industrial hazardous wastes. The term residual waste relates to waste left from household sources containing materials that have not been separated out or sent for reprocessing. Having talked about some of the waste types, this study would be incomplete if we fail to bring to the fore what hazardous waste is all about.

Biodegradable waste can be commonly found in municipal solid waste (sometimes called biodegradable municipal waste, or BMW) as green waste, food waste, paper waste, and biodegradable plastics. Other biodegradable wastes include human waste, manure, sewage, slaughter house waste. This is peculiar with undergraduates and found in school premises. It can also be classified as institutional waste consists of waste from premises used wholly mainly for the purposes of recreation, education or entertainment but not including household, agricultural or industrial waste.

Biomedical waste consists of solids, liquids, sharps, and laboratory waste that are potentially infectious or dangerous and are considered bio-waste. It must be properly managed to protect the general public, specifically healthcare and sanitation workers who are regularly exposed to biomedical waste as an occupational hazard. Biomedical waste differs from other types of hazardous waste, such as industrial waste, in that it comes from biological sources or is used in the diagnosis, prevention, or treatment of diseases. Common producers of biomedical waste include hospitals, health clinics, nursing homes, medical research laboratories, offices of physicians, dentists and veterinarians, home health care, and funeral homes. Chemical waste is a waste that is made from harmful chemicals (mostly produced by large factories). Chemical waste may or may not be classed as hazardous waste.

Medical waste, also known as clinical waste, normally refers to waste products that cannot be considered general waste, produced from healthcare premises, such as hospitals, clinics, doctor's offices, laboratories and nursing homes.

Business (or commercial and industrial) waste – cover the commercial waste and industrial waste types. Generally, businesses are expected to make their own arrangements for the collection, treatment and disposal of their wastes. Waste from smaller shops and trading estate where local authority waste collection agreements are in place will generally be treated as municipal waste.

Methods of Waste Disposal

The environmentally preferable concept with respect to waste is to consider wastes as resources out of place (UNEP, 2023; World Bank, 2024). We may not be able to recycle and reuse everything, but the increasing cost of raw materials, energy, transportation and land will make it financially feasible to reuse and recycle more resources. This is what is called industrial ecology – the industrial society functions more like an ecological system, where waste from one part of the system becomes a resource for another part (OECD, 2023; Ellen MacArthur Foundation, 2022). Some of the modern methods of waste disposal are sanitary land filling which includes confining the waste, compacting it and covering with soil. It not only prevents burning of garbage but also helps in reclamation of land for valuable use (UNEP, 2023). The placement of solid waste in landfills is the oldest and one of the most prevalent forms of ultimate waste disposal (World Bank, 2024). Recent studies emphasize that modern landfills involve engineered systems for environmental protection, including leachate and gas management.

Open dumps are characterized by the lack of engineering measures, no consideration of landfill gas management and few, if any, operational measures such as registration of users, control of dumping, or compaction of waste (UN-Habitat, 2023).

Furthermore, landfills are one form of waste management that nobody wants but everybody needs (World Bank, 2024). There are simply no combinations of waste management techniques that do not require some

form of land filling to make them work. According to the United States Environmental Protection Agency (2024), recycling turns materials that would otherwise become waste into valuable resources, yielding environmental, financial, and social benefits such as natural resource conservation, energy savings, pollution reduction, and economic growth. More importantly, a sizeable portion of what is thrown away contains valuable resources—metals, glass, paper, wood, and plastics—that can be reprocessed and reused as raw materials. Another common method of waste disposal practice is the open burning that involves burning waste in an open space without control of environmental factors such as wind or air (WHO, 2024). In this method, smoke and toxic gases are released into the environment in an uncontrolled manner, leading to severe air pollution and associated health risks. Recent studies link open burning to respiratory illnesses and environmental degradation (UNEP, 2023; WHO, 2024).

The Concept of Environmental Attitude

Several scholars had given their opinion on community's attitude towards waste disposal (Word Health Organization, 2024) defines environmental attitude towards waste disposal refers to individuals' beliefs, perceptions, and predispositions toward how waste should be managed in ways that protect human health and the environment. Attitude plays a crucial role in shaping how people respond to environmental issues, particularly in relation to waste disposal practices. It can be either positive or negative, and this distinction significantly influences the quality of environmental outcomes within communities. (WHO, 2024)

A positive environmental attitude encourages individuals to engage in responsible waste disposal practices such as proper waste sorting, recycling, reuse, and the avoidance of indiscriminate dumping. Conversely, a negative attitude toward waste disposal often results in harmful practices such as open dumping, burning of waste, and disposal of refuse in unauthorized locations. These negative practices contribute to environmental degradation, pollution, and increased health risks, thereby making the environment unsafe and unconducive for living (UNEP, 2023; World Health Organization, 2024).

Empirical studies have consistently shown that individuals' attitudes significantly influence their waste disposal practices. Earlier studies, such as those by Eveth, Lustia, and Christian (2016) and Kiran et al. (2015), reported that respondents generally exhibited positive attitudes toward waste disposal methods. However, contrasting findings by Rhule (2010) indicated the presence of negative attitudes in some communities, highlighting variability across different contexts. More recent studies further affirm that although awareness of proper waste disposal is increasing, the translation of positive attitudes into consistent practices remains a challenge, particularly in developing countries (Adebayo et al., 2025; Nwankwo, 2023).

Lee and Kim opined that attitude towards waste disposal is considered a critical determinant of sustainable waste management. Contemporary environmental research emphasizes that individuals who possess strong pro-environmental attitudes are more likely to adopt sustainable waste disposal practices. These attitudes are often shaped by environmental awareness, cultural values, education, and exposure to environmental campaigns (Lee & Kim, 2024; UNESCO, 2023). As such, improving environmental attitudes is essential for promoting responsible waste disposal practices.

Furthermore, the adoption of appropriate waste disposal practices is influenced not only by attitude but also by knowledge. Knowledge refers to an individual's awareness and understanding of environmental issues and proper waste management techniques. Nugent (2013) described knowledge as the information and understanding acquired through learning and experience, while recent scholars argue that environmental knowledge is a key driver of sustainable behaviour and practices (Kaza et al., 2023). When individuals are well-informed about the consequences of improper waste disposal, they are more likely to develop positive attitudes and engage in responsible practices.

Similarly, Asuamah et al. (2012) emphasized that knowledge is essential in promoting proper waste collection and disposal, as poor knowledge often leads to improper waste management practices. Recent evidence supports this assertion, indicating that lack of environmental education contributes significantly to indiscriminate waste disposal, which in turn increases the spread of diseases and environmental pollution (Olawepo et al., 2023; World Bank, 2024).

In addition, environmental attitude and waste disposal practices are influenced by socio-demographic

factors such as age, gender, educational level, occupation, and residential location. Banga (2013) noted that these variables affect individuals' willingness to adopt sustainable waste disposal options. Recent studies confirm that higher levels of education and environmental awareness are associated with more positive attitudes and better waste disposal practices (Alabi et al., 2022; Adekunle, 2024). For instance, individuals living in urban areas with better access to waste management facilities are more likely to demonstrate responsible waste disposal practices compared to those in rural or underserved communities.

Moreover, Ifegbesan (2010) highlighted the relationship between socio-demographic variables and environmental attitudes, a position that is supported by recent research showing that social and contextual factors significantly shape environmental behaviour. These findings suggest that interventions aimed at improving waste disposal practices must consider not only individual attitudes but also the broader socio-economic and environmental context.

Environmental attitude toward waste disposal is a key factor influencing how individuals manage waste in their daily lives. Positive attitudes promote sustainable waste disposal practices, while negative attitudes contribute to environmental degradation and health hazards. Although awareness of proper waste disposal methods is increasing, there is still a gap between knowledge, attitude, and actual practices. Therefore, efforts to improve waste management should focus on environmental education, awareness campaigns, and the provision of adequate waste disposal infrastructure to encourage positive attitudes and responsible practices among individuals and communities.

Student/Undergraduate Well-Being

Well-being among undergraduate students means many things to many students and many scholars, the concept that includes the overall physical, psychological, emotional, and social functioning of students within the university environment. Student well-being is not limited to the absence of illness but includes the presence of positive mental states, life satisfaction, effective functioning, and the ability to cope with academic and environmental demands as opined by Bersia, et al., (2024). Undergraduate well-being reflects a **balance between academic responsibilities and personal life,** including emotional stability, social relationships, and physical health.

University life is widely recognized as a critical developmental stage that exposes students to various stressors such as academic pressure, financial challenges, environmental conditions as related to this study, and social adjustment. These factors significantly influence students' well-being. According to Bersia et al. (2024), students are required to navigate academic demands alongside personal development, and these experiences can either enhance or undermine their mental health and overall well-being. This suggests that well-being is dynamic and influenced by both internal and external conditions.

Furthermore, well-being among undergraduate students is closely associated with **mental health outcomes**, including levels of stress, anxiety, depression, and emotional resilience. Recent findings indicate that university students are particularly vulnerable to poor mental health compared to the general population, which negatively affects their academic performance and quality of life. Scholars had proven it several times that factors such as academic workload, environmental stressors, and lack of social support can significantly reduce students' psychological well-being (Fadiji & Eloff, 2024).

Student well-being is influenced by environmental and contextual factors, including the physical and social conditions within the university setting. Poor environmental conditions such as inadequate sanitation, improper waste disposal, and environmental pollution can negatively impact students' health, comfort, and psychological state. Recent research highlights that unhealthy environments contribute to stress, discomfort, and reduced concentration, thereby affecting students' academic engagement and overall well-being (WHO, 2024; UNEP, 2023). Furthermore, **waste disposal practices and environmental attitudes** play a significant role in shaping students' well-being. Poor waste disposal practices, such as indiscriminate dumping and lack of sanitation, can create unhygienic environments that expose students to diseases, unpleasant odors, and environmental stress. These conditions may lead to discomfort, anxiety, reduced academic focus, and decreased satisfaction with the learning environment. On the other hand, positive environmental attitudes and responsible waste disposal practices contribute to a clean, safe, and healthy environment, which promotes students' physical health, emotional stability, and academic productivity. (WHO, 2024)

Waste Disposal Practices in School Environments

Waste disposal policies and practices in school environments include the approaches, practices, and frameworks put in place in handling the solid waste produced in the school boundaries (Nnonyelu & Dongjie, 2024). Just like many other organizations, a school is a potential producer of solid waste in the form of papers, plastic, food leftovers, food cans, glass containers, and at times, other materials such as used laboratory chemicals, which can be classified as dangerous waste (Kofi et al., 2023). The importance of waste disposal systems in schools goes beyond the hygienic and safe learning atmosphere. It also extends to the impact systems have in reinforcing the cultural practices of students. It is noted that in most developed countries, the school waste management approach is usually centered around the 3Rs, which is, Reduce, Reuse, and Recycle (Wapwera et al., 2022). For instance, students shown bins to throw away different types of waste which is later used for recycling and or composting. Such practices instill waste management practices and develop the appreciation of environmental responsibility. These undertakings are often supported in school clubs and nature of programs, or supported with basic science to help in the purposeful daily practice of waste disposal (Debrah et al., 2021). A school in a developing country has to deal with the emerging issues without the systems. In addition, in a developing nation, the school has to deal with much levels of the waste management systems. This is shown in the lack of basic infrastructure, waste collection irregularities, and the practice of waste within the school boundaries without any form of discipline (Ferronato & Torretta, 2019). Playgrounds that tend to get ignored often end up haphazardly strewn with garbage and trash and tend to have overfilled trashcans alongside clogged water drains, and those can lead to health issues like pestilence, illnesses, and odor. In such scenarios, how waste is disposed of is more of an offensive measure as there is little to no prevention that is organized. Tackling sanitation is treated as a unitary system, instead of a complex system that is organized is more system. In scientific contexts, the role of students and teachers is crucial. Teachers are viewed as role models, and their participation in fostering the behaviors of responsible disposal often determines the success of waste management (Sharma & Dr. Anamika, 2022). Students on the other hand, are as much and producers of waste and agents of change. Their participation in projects that involve waste sorting, recycling and clean up campaigns positively affects their personal and communal attitudes. For example in Nigeria, some schools have formed eco-clubs in collaboration with local NGOs to foster segregation and recycling. While others have spearheaded “Don’t Litter, It Starts With You” campaigns (Aikowe & Mazancová, 2021). The aim of such tactics is to cultivate responsible littering and waste disposal. However, there are inadequate funds, poor monitoring, lack of commitment and other such factors lead to poor sustainability of the programs. In general, waste disposal activities within the school system demonstrate the general attitudes of the community to waste management (Kamanga et al., 2024). Improvement of waste disposal activities through purpose education, sufficient facilities, and the constructive involvement of the students is vital to fostering the disposal of better waste to reclaim and reprocess waste material and healthy school atmosphere (Kofi et al., 2023).

The Relationship between Effective Waste Management Practices and Undergraduate wellbeing

Effective waste management practices are fundamental to promoting environmental sustainability and enhancing human well-being, waste management is recognized as a critical component of public health protection, resource conservation, and sustainable development. Proper handling and disposal of waste are therefore essential priorities for society, particularly in rapidly urbanizing environments such as Lagos State, where high population density and increased waste generation place significant pressure on existing waste management systems (UNEP, 2023; World Bank, 2024).

In Lagos, waste management practices play an important role in shaping students’ environmental quality and overall well-being. Improper waste disposal within and around academic environments can lead to environmental pollution, unpleasant living conditions, and health risks. Conversely, effective waste management practices contribute to a clean, safe, and conducive learning environment that supports both physical and psychological well-being.

Several studies had shown that there are so many benefits in managing waste properly which could even result to other benefits like economic factor, social factor, health factor, academic, etc. One of the key benefits of proper waste management practices is resource conservation. Through practices such as waste sorting, recycling, and reuse, valuable materials such as plastics, paper, and metals can be recovered and reintegrated into the production cycle. Recent environmental studies emphasize that circular economy practices significantly reduce pressure on natural resources and promote sustainability by minimizing raw material extraction (OECD, 2023; UNEP, 2024). In a university environment like LASU, LASUED,

encouraging students to adopt such practices can contribute to environmental responsibility and long-term sustainability awareness.

Waste management practices also play a significant role in mitigating climate change. Poor waste disposal, especially open dumping and uncontrolled burning, contributes to the emission of greenhouse gases such as methane and carbon dioxide. These emissions contribute to global warming and environmental degradation. However, sustainable practices such as recycling, composting, and improved waste treatment systems can significantly reduce greenhouse gas emissions and environmental pollution (IPCC, 2023; WHO, 2024). In urban settings like Lagos, where waste generation is high, effective waste management becomes a crucial strategy for climate resilience.

Furthermore, proper waste management practices have direct implications for public health and human well-being. Improper disposal of waste can lead to contamination of water sources, spread of infectious diseases, and exposure to harmful microorganisms. Recent public health evidence shows that poor environmental sanitation is strongly associated with diseases such as cholera, typhoid, and other waterborne infections, particularly in densely populated urban areas (World Health Organization, 2024). In a university environment, such conditions may negatively affect students' health, concentration, and academic performance.

Effective waste management also contributes to improved psychological and social well-being. Clean and well-maintained environments reduce stress, promote comfort, and enhance satisfaction with living and learning spaces. On the other hand, environments characterized by indiscriminate waste dumping often create discomfort, anxiety, and reduced motivation among students. Recent studies indicate that environmental cleanliness is positively associated with psychological well-being and life satisfaction among young adults and university students (Lee & Kim, 2024).

In addition, waste management practices contribute to economic and institutional sustainability. Although informal waste recycling activities exist in many developing contexts, proper waste management systems can create structured opportunities for employment, recycling industries, and resource recovery initiatives. According to recent development reports, sustainable waste systems support job creation, reduce public health expenditures, and enhance urban sustainability (World Bank, 2024). Within university environments, this translates into reduced maintenance costs and improved campus infrastructure efficiency.

3. Methodology

The study was conducted to examine waste disposal practices, environmental attitudes and wellbeing of undergraduates in Lagos state. Cross-sectional survey research design was adopted for the study. The area of the study covers undergraduates of tertiary institutions along Badagry axis of Lagos State. Purposive and simple random sampling technique was used to select 240 respondents from the study population of all undergraduate students in Lagos State tertiary institutions. This was done by selecting 3 colleges/faculties, namely: faculty of education, faculty of science and faculty of arts. Thereafter, simple random sampling technique was used to obtain 80 respondents each from the selected faculties which invariably gave a total of 240 students being selected.

Furthermore, a self-structured questionnaire titled "Waste Disposal, Environmental Attitude and Wellbeing Questionnaire" (WDEAWQ) was used to collect required data for the study. The instrument was divided into 2 major sections, sections A and B. section A comprised of demographic data of respondents. Section B was further divided into 3 sections, I, II and III. Section I contain 5 items related to waste disposal practices; section II contains items related to environmental attitude while section III contains items related to wellbeing of undergraduates. Imperatively, all items used a 4-points Likert scale: strongly agree (4), agree (3), disagree (2) and strongly disagree (1) respectively. Statistical analysis such as mean, standard deviation and correlation analysis were used to analyzed the stated hypotheses. To validate the instrument, a copy of the instrument was given to experts in environmental science and education for content, face and construct validity. Their evaluation was implemented before the final administration of the instrument.

Also, a pilot test was carried out using 30 students from other faculty that are not among the selected faculties for the study. The Cronbach alpha coefficient were 0.72, 0.78 and 0.83 for the 3 sections. This however, indicated that the instrument reliability is acceptable.

Finally, the data collected were subjected to descriptive and inferential statistical analysis such as frequency counts, percentages, mean and standard deviation, while the stated hypotheses were tested using Pearson Product Monument Correlation Coefficient.

The estimation criterion

$$\text{Mean} = \frac{4 + 3 + 2 + 1}{4} = \frac{10}{4} = 2.5$$

The decision rule is that for every statement analysis with mean value that equals or greater than 2.5 will be accepted while the mean value less than 2.5 will be rejected. Additionally, for the hypotheses, p- value greater than 0.001 rejects the null hypothesis and accepts the alternative hypothesis as well as p-value less than 0.001 accept the null hypothesis and rejects the alternative hypothesis at 5% level of significance respectively.

4. Data Presentation and Analysis

Research Question 1: Is there any significant relationship between waste disposal practices and environmental attitudes among undergraduates in Lagos State?

Table 1: Mean Responses on the waste disposal practices and environmental attitudes

S/N	Item Statement	SA4	A3	D2	SD1	X	S.D	Decision
1	Improper disposal of waste is one of the issues that students face at school	156 (65.1%)	78 (32.5%)	6 (2.7%)	-	3.8	2.47	Accepted
2	Most students drop waste on road side	62 (25.8%)	158 (65.8)	16 (6.7%)	4 (1.7%)	3.4	2.65	Accepted
3	Students find it difficult to sort waste before disposal	108 (45%)	40 (16.7%)	30 (12.5%)	62 (25.8%)	3.9	2.84	Accepted
4	There is always waste littering around the school premises	68 (28.3%)	70 (54.2%)	26 (10.3%)	16 (6.7%)	3.4	2.36	Accepted
5	Open burning of waste around the school premises leads to poor environmental attitudes of students	50 (20.8%)	78 (32.5%)	46 (19.2%)	66 (27.5%)	3.5	2.99	Accepted

N = 240

From the above analysis, it can be deduced that respondents representing 234 respondents 96.3% agreed that improper disposal of waste is one of the issues that students face at school, while only 6 respondents representing 2.7% disagreed with the statement. Also, majority of the students believed that most students drop waste on road side with 91.6% of respondents agreed. Additionally, the analysis from item 3 revealed that most of the students find it difficult to sort their wastes before disposal. Furthermore, the respondents asserts that there is always waste littering around the school premises and finally, majority of the respondents agreed that open burning of wastes around the school premises leads to poor environmental attitudes of students with 53.3% of the total responses. It can therefore be concluded from the analysis above that waste disposal attitudes has correlation with environmental attitudes of undergraduates in Lagos State.

Research Question 2: Is there any significant relationship between waste disposal practices and well-being of undergraduates in Lagos State?

Table 2: Mean Responses on waste disposal practices and well-being of undergraduates

S/N	ITEM STATEMENT	SA4	A3	D2	SD1	X	S.D	DECISION
1.	Poor student behavior in waste management is a major obstacle for waste collection practices	144 (60%)	56 (23.3%)	16 (6.7%)	24 (10%)	3.4	2.19	Accepted

2.	Inadequate waste disposal practices contribute to health issues among students	80 (33.3%)	132 (55%)	14 (5.8%)	16 (6.7%)	3.1	2.47	Accepted
3.	Burning of waste by undergraduates contributes to air pollution in the environment.	150 (62.5%)	56 (23.3%)	16 (6.7%)	18 (7.5%)	3.6	2.73	Accepted
4.	The school lacks sufficient waste disposal bins which is well associated to students' well-being	116 (43.3%)	56 (23.3%)	30 (12.5%)	38 (15.6%)	3.3	2.65	Accepted
5.	The condition of the environments where students are found describes the environmental attitudes of the students	96 (40%)	70 (29.2%)	44 (18.3%)	22 (9.2%)	2.8	2.73	Accepted

N = 240

From the above analysis, it can be deduced that majority of the respondents 83.3% agreed that poor student behavior in waste management is a major obstacle for waste collection practices. Also, most of the respondents (88.3%) asserts that inadequate waste disposal practices contribute to health issues among students. Similarly, 85.8% of the total respondents believed that burning of waste by undergraduates contributes to air pollution in the environment. Furthermore, most of the respondents opined that the school lacks sufficient waste disposal bins which was well associated with students' well-being. Finally, 69.2% of the total respondents agreed that the condition of the environments where students are found describes the environmental attitudes of the students. The above analysis revealed that wastes disposal practices practiced by undergraduates significantly influences their environmental attitudes.

Research Question 3: Is there any significant relationship between environmental attitudes and well-being of undergraduates in Lagos State?

Table 3: Mean Responses on the relationship between environmental attitudes and well-being of undergraduates

S/N	ITEM STATEMENT	SA4	A3	D2	SD1	X	S.D	DECISION
1.	Clean and well-maintained environments reduce stress, promote comfort, and enhance satisfaction with living and learning spaces	136 (56.7%)	22 (9.2%)	62 (25.8%)	20 (8.3%)	2.8	2.39	Accepted
2.	A dirty environment makes students feel uncomfortable and anxious	32 (13.3%)	104 (43.3)	18 (7.5%)	90 (37.5%)	3.1	2.25	Accepted
3.	The school waste practices encourage negative environmental attitudes	108 (45%)	108 (45%)	20 (8.3%)	4 (1.7%)	3.5	2.60	Accepted
4.	The quality of the environment promotes students' concentration during lectures and other academic activities	62 (25.8%)	106 (44.2%)	90 (36.7%)	4 (1.7%)	3.4	2.46	Accepted
5.	Regulated wastes management authorities in the school and around the school premises do not carry out their duties effectively.	92 (38.3%)	98 (40.8%)	30 (12.5%)	20 (8.3%)	3.7	2.52	Accepted

N = 240

The above analysis revealed that a total of 158 respondents agreed that clean and well-maintained environments reduce stress, promote comfort, and enhance satisfaction with living and learning spaces. Additionally, 136 respondents believed that a dirty environment makes students feel uncomfortable and anxious. Also, 216 respondents agreed that the school wastes practices encourage negative environmental attitude of undergraduates. Similarly, majority of the respondents (168) agreed that the quality of the environment promotes students' concentration during lecturers and other academic activities. Finally, 190 respondents assert that regulated waste management authorities in the school and around the school premises do not carry out their duties effectively. This implies that environmental attitudes of undergraduates and waste management authority influences the wellbeing of students in the school.

Test of Hypotheses

Hypothesis One: There is no significant relationship between wastes disposal practices and environmental attitudes among undergraduates in Lagos State

Table 4: ***Pearson test of the relationship between waste disposal practices and environmental attitudes among undergraduates in Lagos State***

Correlations			
		WDP	EA
WDP	Pearson Correlation	1	.753**
	Sig. (2-tailed)		.000
	N	240	240
EA	Pearson Correlation	.753**	1
	Sig. (2-tailed)	.000	
	N	240	240
**Correlation is significant at the 0.01 level (2-tailed). Note: WPD = Waste Disposal Practices EA = Environmental Attitude			

The above result revealed a strong positive and significant relationship between waste disposal practices and environmental attitudes among undergraduates in Lagos State, with the result, r (238) = .753, p < .001, N = 240. The coefficient of determinant (R^2) = .567 revealed that 56.7% of the variance in environmental attitude is explained by waste disposal practices. This implies that undergraduates who engage in better waste disposal practices are more likely to demonstrate positive environmental attitudes. Therefore, the null hypothesis was rejected.

$H0_2$: There is no significant relationship between wastes disposal practices and well-being of undergraduates in Lagos State

Table 5: ***Pearson test of the relationship between waste disposal practices and well-being of undergraduates in Lagos Stat***

Correlations			
		WDP	WBU
WDP	Pearson Correlation	1	.886**
	Sig. (2-tailed)		.000
	N	240	240
WB	Pearson Correlation	.886**	1
	Sig. (2-tailed)	.000	
	N	240	240
**. Correlation is significant at the 0.01 level (2-tailed). Note: WPD = Waste Disposal Practices WB = Wellbeing of Undergraduates			

Table 5 presents the Pearson correlation result for the relationship between waste disposal practices and well-being of undergraduates in Lagos State. The result showed that a significant positive correlation between the variables; r (238) = .886, p < .001, N = 240. The coefficient of determinant (R^2) = .786 revealed that 78.6% of the variance in wellbeing of undergraduate is explained by waste disposal practices. This suggests that undergraduates who practices proper waste disposal tend to report higher level of wellbeing. Therefore, the null hypothesis was rejected. It can therefore be concluded that

$H0_3$: There is no significant relationship between environmental attitudes and well-being of undergraduates in Lagos State

Table 6: ***Pearson test of the relationship between environmental attitude and wellbeing of undergraduates in Lagos State***

Correlations			
		EA	WBU
EA	Pearson Correlation	1	.867**
	Sig. (2-tailed)		.000
	N	240	240
WB	Pearson Correlation	.867**	1
	Sig. (2-tailed)	.000	
	N	240	240
**. Correlation is significant at the 0.01 level (2-tailed). Note: EA = Environmental Attitude WBU = Wellbeing of Undergraduates			

The above analysis revealed a very strong positive and statistically significant correlation between environmental attitude and well-being of undergraduates; r (238) = .867, p < .001, N = 240. The coefficient of determinant R^2 = .752, indicates that 75.2% of the variance in undergraduate wellbeing is explained by environmental attitude. This simply implies that undergraduates with more positive environmental attitudes are likely to report higher level of well-being. Therefore, the null hypothesis is rejected.

5. Discussion

The findings of the study revealed a strong and positive significant relationship between waste disposal practices and environmental attitudes of undergraduates in Lagos state. This findings is supported by the finding of Shi et al., (2021) where they found that although solid waste collection rate was above 80%, a huge percentage is disposed of illegally. This invariably revealed the relationship between waste disposal practices and environmental attitude. Also, the study corroborates with Wondumu (2020) where he stated that the widespread use of nonbiodegradable materials such as plastic and polythene packaging is associated with waste disposal challenges on university campuses. Similarly, Lee et al. (2013) highlighted that students' with strong environmental values are more likely to participate in sustainable waste management practices, affirming the interconnectedness between waste disposal practices and environmental attitudes. However, the findings of Nzeadibe (2009) reported an association between attitudinal disposition and solid waste management practices among residents in Enugu, Nigeria. It is also in line with Stern (2000) in the Value-Belief-Norm theory which describes a connection between environmental attitude and behavior. Furthermore, Cheung, Chan, and Wong (2017) documented a positive association between knowledge, attitude and practice in waste management, suggesting a co-occurrence between attitude and practice. The result findings from the current study implies that undergraduates with more positive environmental attitude are also more likely to report better waste disposal practices.

The findings of the study from hypothesis two revealed a significant relationship between wastes disposal practices and well-being of undergraduates in Lagos State. This finding is supported by the study of Olawepo, et al., (2023) that revealed that improper waste practices is connected to environmental pollution, disease transmission, and degradation of learning environments. Similarly, the findings corroborate with Ali, Malik and Khan (2021) who found an association between waste management behaviour and health indicators among households in Pakistan. Imperatively, Also, Molina (2021) stated that poor solid waste management is associated to a variety of health, environmental, and socioeconomic issues. The association suggests that engagement in better waste disposal practices tends to co-occur with higher

reports of physical and psychological well-being among undergraduates.
Furthermore, the findings of the study from research question 3 and hypothesis 3 indicated that there is a significant relationship between environmental attitudes and well-being of undergraduates in Lagos State. This is supported by the findings of Eneji, Eneji, Ngoka and Abang (2017) that found that attitude towards waste disposal practices is connected to the health status of the residents of Calabar South Local Government Area was recorded. Conversely, the study of Takkiyudin (2019) conveyed that improper waste management in various schools is adequately associated with students' wellbeing. Similarly, it corroborates with the study of Chiedozie (2021) where he found that students' attitude towards environmental sanitation in their surroundings is unacceptable. Shen and Yu (2017) reported a relationship between positive environmental attitudes and pro-environmental practices. Therefore, the association suggests that good environmental attitude is significantly associated with well-being among undergraduates in Lagos State.
Conversely, the extremely high correlations obtained from the findings may be due to shared self-report measurement from single questionnaire and common-method bias.

Conclusion and Recommendation

The study was conducted to examine waste disposal practices, environmental attitude and well-being of undergraduates in Lagos State. Based on the findings of the study, it was revealed that waste disposal practices among undergraduates is associated with their environmental attitudes. This is because when students possess positive attitude towards waste disposal practices, their attitude towards their environment will likewise be positive. They will find it difficult to live and learn in a dirty and untidy environment. Also, it was discovered that waste disposal practices are positively associated with students' wellbeing. This is because total wellness of students is related to the effective practice of waste disposal. Therefore, it can be concluded that improving waste disposal practices and fostering positive environmental attitudes among undergraduates are significantly associated with their well-being. The university environment plays a critical role in shaping these practices and attitudes. The study recommends that the management of tertiary institutions in Lagos State should provide adequate and well-placed waste disposal facilities such as dustbins and recycling bins across campus. This will encourage proper waste disposal practices among students. Similarly, school authority and policy marker should formulate and implement effective and efficient waste disposal sensitization programmes that will foster positive environmental attitude of undergraduates towards waste disposal practices. Finally, the university should collaborate with Lagos State Waste Management Authority to ensure prompt collection and proper disposal of waste on campus.

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