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WASTE DISPOSAL PRACTICES IN SOME PRIMARY SCHOOLS IN KWARE LOCAL GOVERNMENT, SOKOTO, NIGERIA

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Article Info

Abstract

Young ones and other school actors spend much time at schools and therefore make waste that if treated improperly can elicit harm to health, learning, teaching, and environment. This study assessed waste disposal practices in primary schools in Kware, Sokoto State, Nigeria using visual inspection. The results showed that waste management in these schools is inadequate, with no segregation of waste and a reliance on open burning (57.5%) and open dumping (32.5%). The components of waste disposed include plastics (42.5%), paper (25.0%), and organic waste (25.0%). The study highlights the need for proper waste management practices in schools to mitigate the negative impacts on the environment and public health.

Keywords:

Waste disposal, Primary schools, Segregation, Open burning, Open dumping, Environmental pollution, Public health.

Introduction

Human activities in most of the times generates waste. Serious problems arise when the human population is large, therefore, there is tendency that large chunk of waste will be made which may create problems if improperly handled. Poor waste management has led to contamination or pollution of soils, water bodies, air, and consequently exerting a major impact on public health (Singh et al., 2018; Sarkingobir et al., 2021). McAllister (2015) complained that communities in developing countries disposed waste in manner that is destructive and catastrophic to public health. Furthermore, open dumping, and burning are typical instances of destructive methods of waste disposal or management engaged in developing countries. People are forced to live amidst waste materials despite the linked health problems (McAllister, 2015). There are several constraints to proper waste management including poor infrastructure, poor funding, poor knowledge and awareness, for instance (McAllister, 2015; Shamaki & Shehu, 2017; Sabo et al., 2022; Sarkingobir et al., 2022). For instance, a study in Sokoto Town by Sarkingobir et al. (2023) indicated that there was rampant disposal of plastics, open defecation, and quasi.

Waste is verily a component of WASH (water, sanitation, and hygiene) in schools that was mandated for provision of safe water, safe waste disposal and public health promotion in order to set barriers against diseases causing agents (Singh & Raj, 2018). It is a critical component of sustainable development (or Sustainable Development Goals, SDGs). WASH in schools give required priority to the protection of young ones and other school actors (Sarkingobir et al., 2020; Mensah et al., 2022). Schools are to secure the WASH components and initiatives so that healthy and safe environment is ensured. More than 800 children die from diarrhea each and every day, as linked to poor WASH (Mensah et al., 2022). However, information about waste management in schools is scarce. The major objective of this paper is to assess the methods of waste disposal utilized in some primary schools in Kware Local Government, Sokoto, Nigeria.

Materials and Methods

Study area is the Kware is a Local Government Area in Sokoto State, Nigeria, which is characterized by a savannah climate with distinct wet and dry seasons. The economy is primarily driven by agriculture, with crops like millet, sorghum, and cowpeas being major staples, alongside livestock rearing. The people of Kware are predominantly Hausa, with Islam being the dominant religion. Like many other LGAs in Nigeria, Kware faces challenges related to infrastructure, healthcare, education, and economic development, requiring investment and development to unlock its full potential. Study Design used was the cross-sectional study using visual inspection in a sample of 40 primary schools in Kware Local Government. Data Collection follows those tips:

1. Visual inspection of waste disposal sites/areas in each school.
2. Observation of types of waste disposal methods used (e.g., open burning, open dumping, landfilling).
3. Identification of components of waste disposed (e.g., plastics, paper, organic).
4. Assessment of segregation practices (presence/absence).

Meanwhile, data Analysis utilized descriptive statistics to summarize findings on waste disposal methods, components of waste, and segregation practices. This methodology allows for a snapshot of waste disposal practices in primary schools in Kware Local Government, providing insights for improvement.

Results and Discussion

Results in this study are shown in Tables 1-3.

Table 1: Use of segregation in waste disposal or handling among primary schools

Use of segregation	Frequency	Percentage
Yes	0	0.0
No	40	100.0
Total	40	100.0

Table 2: Method Used in waste disposal or handling among primary schools

Methods of waste disposal	Frequency	Percentage
Open burning	23	57.5
Landfilling	4	10.0
Open dumping	13	32.5

Table 3: Composition or Type of waste disposed among primary schools

Component of waste	Frequency	Percentage
Plastic	17	42.5
Paper	10	25.0
Food or organic	10	25.0
Others	3	7.5

Waste disposal practices in primary schools in Kware, Sokoto State, Nigeria was assessed. Table 1 shows that the waste management at primary schools sites is marred without segregation. Segregation is important aspect of waste management or disposal, because it helps by screening various waste components to distinct groups for recycling, reusing, and disposal. Failure to segregate waste into various distinct components make it difficult to handle waste properly and encourage release of toxic chemicals during disposal or treatment, which will not augur well to the environment and health. Poor segregation may be due to lack of technical knowhow or poor financing to buy containers or other hardwares (Karshima, 2016). However, similar study in Biu, Nigeria shows that majority of the respondents observed are not practicing segregation during waste handling (Jibatswan et al., 2022).

Table 2 shows the methods employed to dispose waste materials at schools. The results indicate open burning (57.5%) as the most applied method, and open burning (32.5%) followed suit. The least method observed was the landfilling (10.0%). The open burning and open dumping are the prevalent methods in areas of poor settings, but they are characterized with effects, especially at schools where young ones learn. The methods utilized for waste management as noticed in this study are similar to the ones reported by Kaoje et al. (2017). Similarly, Jibatswan et al.(2022) in Biu, Nigeria reported similar behaviors of waste disposal among residents.

Based on the results displayed in Table 3, components of waste at schools observed include, plastics (42.5%), paper (25.0%), food or organic (25.0%), and others (7.5%). The components of waste identified are in tandem with the results of Kaoje et al.(2017) in Sokoto, Nigeria. The plastics and papers fall within the category called inorganic waste. The inorganic waste cannot easily decompose, they are non-biodegradable (to a large extent). Therefore, they stay for millions of years or less or more and on this course traversing the environmental components (such as air, water, and soils while leading to pollution.

Burning of these inorganic waste materials divulge chemicals that are harmful to environment and public health, such as respiratory effects, vision effects, especially in children (or young ones) and old citizens. It can also cause sick building syndrome that reduces productivity, learning, concentration, and effective teaching classroom management (Shehu et al., 2020; Sidi & Yahaya, 2022). While, the organic components of waste may easily degrade and spur smelling or serve as a haven for vectors and vermin that encourage spread of infectious diseases. If the students or teachers fall such as a result of vector borne diseases or relations they may not be able to learn or teach properly. Sick staff or students abstain school or classes and in turn productivity or academic performance is inflicted (Ibrahim et al., 2021).

Conclusion

The study highlights the importance of proper waste segregation and disposal practices in primary schools in Kware, Sokoto State, Nigeria. The findings indicate that waste management in these schools is inadequate, with no segregation of waste and a reliance on open burning and dumping. These methods can have negative environmental and health impacts, especially in a school setting where children are more vulnerable. The study's results are consistent with other research in Nigeria, emphasizing the need for improved waste management practices in schools. To address these issues, potential solutions could include:

1. Providing technical training and resources for school staff on proper waste segregation and disposal.
2. Implementing waste segregation programs and providing necessary infrastructure, such as separate bins for different types of waste.
3. Promoting environmentally friendly waste disposal methods, such as recycling and composting.
4. Raising awareness among students, teachers, and the community about the importance of proper waste management.

By adopting these solutions, primary schools in Kware and similar settings can improve their waste management practices, reducing environmental and health risks and promoting a healthier learning environment.

REFERENCES

Ibrahim, M.F., Hod, R., Toha, H.R., Nawi, M.A., Idris, I.B., Yusoff, M., & Sahani, M. (2021). The impacts of illegal toxic waste dumping on childrens health: A review and case study from Pasir Gudang, Malaysia. International Journal of Environmental Research in Public Health, 18(221), 1-18. Http://doi.org/10.3390/ijerph18052221

Jibatswan T., Joshua WK., Azedo AP., & Owoeye, F.T.(20022). Assessing household solid waste management and disposal practices in Biu Local Government, Nigeria. Journal of International Environmental Applications and Sciences., 17(1), 1-9.

Kajoe, A.U., Sabir, A.A., Yusuf, S., Jimoh, A.O., & Raji, M.O. (2017). Residents perception of solid waste disposal practices in Sokoto, Northwest Nigeria. African Journal of Environmental Science and Technology, 11(2), 94-102. http://doi.10.5897/AJEST2014.1791

Karhsima, S.N. (2016). Public health implications of poor municipal waste management in Nigeria. Vom Journal of Veterinary Science, 11(2016), 142-148.

McAllister,J. (2015), "Factors Influencing Solid-Waste Management in the Developing World" (2015). All Graduate Plan B and other Reports. 528. https://digitalcommons.usu.edu/gradreports/528

Mensah, A.A., Adei D., Kuubagr, G., Duah SO., & Ajibey, MO.(2022). Water, sanitation, and hygiene (WASH) in schools: Evidence from a vulnerable and deprived area in Ghana. Cogent Public Health, 9, 1-19.

Sabo, G., Zayyanu, A., Abdullahi, K.M., Malami, Z., Aliyu, A., Muhammad, S. & Bello, A. (2022). Assessment of biomedical waste management among primary healthcare workers in Gwadabawa local government of Sokoto state, Nigeria. Transaction on Biomedical Engineering Applications and Healthcare, 2 (1)1-9.

Sarkingobir, Y., Bello, A M. & Yabo, H.M. (2021). Harmful effects of plastics on air quality. Academia Letters, Article 2967. Https://doi.org/10.20935/AL2967.

Sarkingobir, Y., Hiliya, A.A., & Umar, K. (December, 2022). Schools in Nigeria; An assessment of water, sanitation, and hygiene in Sokoto state. Archives of Educational Studies, 2(2), 223-242.

Sarkingobir, Y., Mustapha Sahabi, & Malami Dikko (2020). Water, Sanitation and hygiene among healthcare facilities in Sokoto State, Nigeria. Virtual Conference On Advancements in Nanotechnology (VICAN) On 1st November 2020 Jointly Organized by Association of Global Academicians and Researchers (AGAR) And Association of Indian Biologists, Tamil Nadu, India (AIB). ISBN978-81-948129-1-3.

Shamaki, S.B. & Shehu, A.A. (2017). Assessment of solid waste management in Sokoto metropolis. Journal of Agriculture and Environment, 13(2), 159-167.

Shehu, A.A., Maiyaki, F.U., Yahaya, M.H., & Aliyu, S. (2020). Stakeholders views on ways to reduce the use of plastic bags and its environmental and public health impacts in Sokoto metropolis, Sokoto state, Nigeria. International Journal of Research and Scientific Innovation, vii(iv),196-200.

Sidi, A.S., & Yahaya, U.F. (2022). Chemical additives of concern in electronic plastics: Theoretical view. ISSRA Journal of Applied Medical Sciences, 1(3), 12-19.

Singh, A., & Raj, P. (2018). Segregation of waste at source reduces environmental hazards of municipal solid waste in Patna, India. Archives of Environmental Protection, 44 (4), 96-110.

Singh, J., Saxena, R., Bharti, V., & Singh, A. (2018). The importance of waste management to environmental sanitation: A review. Advances in Bioresearch, 9(2), 202-207.