STUDENTS' PERCEPTION OF SANITATION IN THE CAPE COAST MUNICIPALITY

Abstract

*Background:*Poor sanitation is a danger to many parts of the world including Ghana. Efforts over the years by the government of Ghana and other environmental NGOs to address this canker have not yielded the required results. *Objectives:*This study sought to investigate University of Cape Coast (UCC) distance students' perception of prevalence, causes, and diseases associated with poor sanitation and strategies that can be applied to address the problem. *Methodology:*The study applied themixed method approach and the descriptive research design. The convenience sampling technique and a structured questionnaire comprising open and close-ended items were applied to obtain data from 294 distance education students made up of 158 males and 136 females aged between 26 and 50years pursuing either diploma, degree or masters' programme at the University of Cape Coast.*Results:*Refuse dumps were perceived as the most prevalent insanitary condition;attitude as the topmost cause of poor sanitation and malaria as the commonest sanitation-related disease.Students perceived the supply of adequate and appropriate sanitation infrastructure, public education and law enforcementas the three top strategies for improving sanitation in the Cape Coast municipality. Students' perception of causes of poor sanitation as well as sanitation-related diseases was unrelated to one's level of education. *Conclusions:*Poor sanitation is a major health problem in the Cape Coast municipality. Adequate and appropriate sanitation infrastructure, public education and law enforcement are three important strategies recommended by students fordealing withpoor sanitation in the Cape Coast municipality.

Keywords: Sanitation, Perception, Students, Municipality, Cape Coast.

Introduction

Safe management of solid and liquid waste is a key challenge that confronts many developing countries experiencing rapid urbanization (Briscoe, 1996; Potter & Lloyd-Evans, 1998; Chaplain, 1999). Poor sanitation is common among vulnerable people in low-income countries; mainly in rural settings and urban slums in Asia and sub-Sharan Africa (WHO/UNICEF, 2010). Current data from the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) Joint Monitoring Platform (JMP) showthat globally, an estimated 4.5 billion people still experience poor sanitation. The situation is even worse as only 28% of the people in sub-Saharan Africa have access to improved sanitation (WHO/UNICEF JMP, 2017).

Inadequate sanitation is linked to the spread of pathogens through urine and faeces (Hutton & Chase, 2016). It is estimated that 842,000 people who live in low-and middle-income countries die each year from diarrhoea and other diseases associated with poor sanitation with children less than five years being the most affected (WHO/UNICEF JMP, 2018). Besides health, poor sanitation causes huge economic losses. Improvements in sanitation can considerablylower the rates of morbidity and the severity of many diseases and thus enhance the quality of life of many people, especially childrenin developing countries (Esrey et al., 1991).

At a conferencethat took place in New York from 25 to 27 September 2015 on the theme "Transforming our world: the 2030 Agenda for Sustainable Development", sanitation was adopted as the 6th Sustainable Development Goal (SDG) out of 17 SDGs (WHO/UNICEF, 2017).Essentially, this goal aims to make safe water resources and improved sanitation available to everyone by 2030 (WWAP, 2017).

Management of environmental sanitation in Ghana is regulated by Act 462 of the 1992 constitution of the Republic of Ghana. The act mandates the Metropolitan, Municipal and District Assemblies (MMDAs) to develop by-laws to regulate attitude to sanitation in Ghana

(Oduro-Kwarteng & van Dijk, 2013). Solid waste management in Ghana is largely handled by Zoomlion Ghana Limited, the primary subsidiary of the Juspong group of companies. Juspong group of companies is a diversified company in Ghana that operates in sectors such as banking, finance and manufacturing. The company has been contracted by the Ministry of Local Government and Rural Development to oversee waste management in Ghana. Trucks belonging to the company transport solid waste from homes to various approved dumpsites on daily basis. Unfortunately, most of these disposal sites are poorly managed 'open dumps' rather than engineered sanitary landfills resulting in public health risks. Again, owing to the limited nature of the collection services and the high cost involved, individuals frequently resort to on-site burning near their households releasing toxic substances into the atmosphere. The Ministry of Health (MoH) and the Environmental Protection Agency (EPA) have specific guidelines for managing hazardous and healthcare waste including the use of autoclaves for infectious medical waste. There are also several companies involved in composting and recycling of solid waste on a limited scale in Ghana. One of these is the Accra Compost and Recycling Plant (ACARP)which sorts and processes waste to produce high-quality organic compost for agricultural uses. It also recovers recyclable materials like plastics, paper, and metal scraps at the same time.

In spite of the legal provisions andgovernment's yearly increment in financial investments into the sanitation subsector, Ghana is yet to find a permanent solution to its sanitation challenges. In 2018, total access to basic sanitation in Ghana was estimated at 21% with rural and urban coverage being 17% and 25%, respectively(Appiah-Effah et al., 2019). According to Angelique et al. (2022), despite the many years of investments into the sanitation subsector, 10% of Ghanaians, especially those living in rural communities still do not have access to safe drinking water and 14% need adequate sanitation equipment. According to Mariwah (2018), the problem

could largely be blamed on rapid urbanization which puts pressure on infrastructure and sanitation equipment.In the view of Mensah et al. (2022), the problem arises from lack of commitment from enforcement institutions, weak sanctions regime, insufficient funding for enforcement, and lack of political will. One could easily recall the disaster that occurred at a fuel service station close to the Kwame Nkrumah Circle in Accra on June 3, 2015. More than 150 people lost their lives in that flood and fire disaster.This twin catastrophe was largely attributed to chocked drains and improper town planning.Sanitation in Ghana is a social and environmental issue of great concern, not limited to any particular city or town (Faith Karimi & Chris Lett, 2015).The question is why have past interventions by government and other environmental NGOs failed to address the sanitation challenges in Ghana? There is limited documented information on how the Ghanaian public perceives the sanitation canker and the strategies they consider appropriate for achieving the 6th Sustainable Development Goal (SDG 6) by the year 2030.It is in line with this that the present study sought the views of UCC distance students from the Cape Coast municipality on the subject. It wasassumedthat being people with formal education, the information they provide would be key in helping policy makers and waste management institutions to make the right decisions for improving sanitation in the Cape Coast municipality.The results of the study will also serve as a useful reference material for researchers in the field of environmental health and sanitation.Additionally, the study will contribute to the existing body of knowledge on waste management and also stimulate further research on the subject in other Metropolitan, Municipal and District assemblies in Ghana.

Methods

This study sought to evaluate distance students'perception of sanitation and sanitation-associated diseases in the Cape Coast municipality. A cross-sectional surveydesign was employed to collect data at one point in time from 3 categories of distance education students-diploma, degree and masters. The study employed the cluster and convenience sampling technique to collect data

from the first three hundred students (outside those used for the pilot study) from the Cape Coast municipality who reported for lectures on Saturday, 24thAugust, 2024. The instrument was developed by three academics (authors) at the university of Cape Coast, guided by Ghana's National Sanitation Strategy and Action Plan (NESSAP) which identifies education, information and legislation as some of the key capacity building strategies for dealing with poor sanitation.Expert judgement by colleagues from the Population and Health department was utilized to establish the validity of the instrument. The questionnaire was first pilot tested on 30 distance students outside the study participants. The purpose of the pilot study was to ensure that all ambiguities and repetitions were removed. It was also meant to ensure that the questionnaire was well structured and effective for collecting the intended data. Using Cronbach Alpha, a reliability coefficient of 0.89 was obtained which suggests an appreciable measure of internal consistency of the research instrument.The questionnaire had two sections: A and B. Section A elicited responses on students' demographic characteristics while section B examined students' ranking or perception ofsanitation-related variables.A 5-point Likert scale ranging from 1 to 5 with 1 being the lowest level of agreement and 5 indicating the highest level of agreementwas used. The students were first assembled in an auditorium and a thorough explanation on the questionnaire provided. They were provided with informed consent as part of the questionnaire. The students were assured of confidentiality of the information they provide and were asked not to write their names or index numbers on the questionnaire. The questionnaires were retrieved immediately after they were completed. A total of 294 mature students (not less than 26 years) comprising 215, 50 and 35 students were sampled frompopulations of 614 diploma, 152 degree and 95 masters respectively studying at UCC.Out of the numbers sampled, 213 diploma, 50 degree and 31 master students completed and returned their questionnaire. This constitutes a return rate of 98%. The data was then cleaned to ensure there were no missing information or ambiguities. Data collected were coded and entered into a data analysis software (Statistical

Package for Social Science – SPSS Version 22). Descriptive statistics namely frequencies, means and standard deviation were employed to analyze data for the first three research questions. The open-ended questions were analyzed by grouping the responses into themes. A one-way analysis of variance (ANOVA) was performedto compare the perception of the different student groups at 95% confidence level.

Results

Demographic characteristics

Position of Table 1

A slightly higher number of male students (53.74%) than females (46.26%) participated in the study (Table 1). Majority of these distancestudents were however in the younger age category (26-30yrs). This shows that a higher number of youngerindividuals patronize the UCC distance educationprogramme than those in the higher age bracket. Again, the number of diploma studentswho participated in the study far exceeded those in the degree and masters' programmes. This is not unusual as one always has to progress from a lower academic qualification to a higher one. In developing countries such as Ghana, there are always more individualsthat need a lower qualification as against higher degrees.

Students' Perception of Sanitation Prevalence, Causes and Related Diseases

Position of Table 2

(i) Students' rankingof prevalence of insanitary conditionsin the Cape Coast municipality

The most prevalent insanitary condition in the Cape Coast municipality from the perspective of UCC distance students is refuse dumps (Table 2) which recorded a mean of 4.01 and standard deviation of 1.22. This is followed closely by chocked drains (M=3.99, SD=1.29) and then littering (M=3.86, SD=1.32). In the view of UCC distance students, gaseous emissions (M=2.93, SD=1.33) is the least prevalent insanitary condition in the Cape Coast municipality next to

polluted water (M=3.12, SD=1.49). The students perceived refuse dumps as the most disturbing insanitary condition in the Cape Coast municipalityandgaseous emissions the least important.

Position of Table 3

(ii) Students ranking of the causes of insanitary conditions in the Cape Coast municipality

The highest ranked cause of insanitary conditions in the Cape Coast municipality, according to UCC distance students is attitude (M=4.21, SD=1.06; Table 3). This is followed by poor town planning (M=4.13, SD=1.09), inadequate sanitation infrastructure (M=3.93, SD=1.26) and ignorance (M=3.89, SD=1.38) in that order. In the view of distance learners, poverty and water scarcity contribute very little to poor sanitation. In their opinion, the problem should rather be blamed on attitude, poor town planning and inadequate disposal facilities.

Position of Table 4

(iii) Students ranking of sanitation-related diseases in the Cape Coast municipality

The study also explored students' perception of the diseases linked to insanitary conditions in their communities. The results are presented in Table 4. The most predominant sanitation-related disease in the Cape Coast municipality, according to the distance students, is malaria (M=4.41, SD=0.96) followed in that order by Cholera (M=4.34, SD=0.1.06) and Diarrhoea (M=4.24, SD=1.11). Otherssuch as worm infestation (M=3.82, SD=1.12) was considered by the students as the least rated sanitation-related condition in Cape Coast.

Students' suggestions on ways of Improving Sanitation in the Cape Coast Municipality

The last research question sought to find out what can be done to improve the sanitation situation in the Cape Coast municipality. Responses were grouped into six themes as listed below. The themes are listed in a decreasing order of importance (i.e. from the highest number of responses to the lowest number).

1. *Provision of adequate and appropriate sanitation facilities by government*
2. *Public education on sanitation*
3. *Enforcement of sanitation laws*
4. *Periodic clean-up exercises*
5. *Proper town planning*
6. *Ban on use of polybags*

Hypothesis

The study equally compared the opinions of the different student categories on:

(1) Prevalence of poor sanitation and

(2) Causes of poor sanitation in the Cape Coast municipality.

Position of Table 5

The results in table 5 show that whereas diploma (M= 35.07, SD=10.06) and post-diploma students (M=35.22, SD=7.96) had similar perception of the prevalence of poor sanitation in the Cape Coast municipality, the master students differed slightly (M=37.00, SD=9.81). The observed differences were however not statistically significant ($F(2, 291) = 0.534$, $P=0.587$). We can conclude that UCC distance students' level of education (measured by programme of study)

did not influence their perception of the prevalence of poor sanitation in the Cape Coast municipality.

Position of Table 6

The results in table 6 show that whereas diploma (M= 37.25, SD=7.80) and post-diploma students (M=37.16, SD=6.02) had similar perception of the causes of poor sanitation in the Cape Coast municipality, the perception of master students was slightly different (M=39.09, SD=7.60). Again, these differences were not statistically significant (F(2, 291) = 0.851, P=0.428). Level of education plays a significant role in the way people express opinions. However, in this instance, we can conclude that UCC distance students' level of education did not influence their perception of the causes of insanitary conditions in the Cape Coast municipality.

Discussion

Prevalence, Causes and Sanitation-related Diseases

The order of prevalence of poor sanitation in the Cape Coast municipality as provided by the students was refuse dumps, chocked drains, littering, refuse container sites, stagnant water pools, open defecation, dirty homes, leaking liquid effluent and gaseous emissions.This is not surprising as it is quite common for one to find refuse containers in the municipality 'overflowing' with rubbish. The refuse containers are sometimes left unattended for several days by the waste disposal companies even when they are full. Again, certain individuals sometimes create unauthorized dumpsites near their houses while others take delight in dumping their waste just at the outskirt of their communities. A similar situation was observed in Kumasi by a team of researchers from the Institute of Environment and Sanitation Studies (IESS), University of Ghana. In Kumasi,poor sanitation manifested in unsightly littering, foul-smelling excreta-laden

and choked gutters, stagnant pools of water and rodents on mounds of refuse dumps with attendant prevalence of malaria, cholera, diarrhoea and typhoid fever (Danso, 2016).

A study by Mensah et al. (2022) revealed that in many low and middle-income countries, poverty, poor sanitation infrastructure, low education, and social conventions are responsible for poor sanitation practices such as wastewater discharge into public spaces, garbage dumping close to households, and open defecation, which affect the quality of air, contaminate groundwater, and cause health and environmental problems.Our study confirmed these causes. Factors responsible for poor sanitation, in order of ranking, from the perspective of distance students at Cape Coast university was attitude, poor town planning, inadequate disposal facilities, ignorance, lack of enforcement, inappropriate technology, high waste collection charges, poverty and water scarcity.

With sanitation-related diseases, the decreasing order of importance from the students' perspective was malaria, cholera, diarrhoea, typhoid fever, skin infections, dysentery and others such as worm infestations. Lack of access to safe water and adequate sanitation are risk factors for poor health outcomes. According to the World Bank, about 19,000 Ghanaians living in rural areas, including children under the age of 5, die from water and sanitation- related diseases such as typhoid and diarrhea each year (Angeliqueet al., 2022).

Strategies for Dealing with Poor Sanitation in the Cape Coast municipality

Majority of students were of the view that there are inadequate disposal facilities or equipment to deal with the sanitation situation in the Cape Coast municipality. Among others, the students mentioned waste bins, refuse trucks, storm drains and public toilets as lacking in their communities. Some were of the view that providing sufficient public toilets in the communities

would discourage people from engaging in open defecation. Others suggested that refuse containers should be placed along the streets and emptied regularly by the local authorities. One student had this to say, '*there should be sufficient supply of refuse containers by the assembly to be placed at all vantage points*'. In a study by Mensah (2019) on which of three strategies (education, regulation and infrastructure) should be prioritized for best sanitation improvement outcomes in Ghana, manystudentsidentified sanitation infrastructure such as toilet and solid waste disposal services as key factors. They argued that if the proper sanitation infrastructure such as drains and waste containers were not put in place first, education and regulation would amount to nothing. Individuals will have no choice than to resort to unauthorized alternatives. This observation is similar to that of Mensah and Enu-Kwesi (2018) who found that the availability, adequacy, affordability, location and quality of sanitation facilities in the communities greatly influence sanitation management practices and need to be taken up as a matter of priority by the government, local councils, sanitation-focused NGOs and private companies. Improved sanitary infrastructures near residences provide privacy, comfort, and convenience, especially for vulnerable groups (Arowosegbe et al., 2021). A study by Tsinda (2011) and Mensah, (2019) identified refuse bins, drainagesystems, vehicles for transporting waste to the dumpsite and others as important facilities required for environmental sanitation management.

The next popular view of students as regards sanitation improvement in the country is public education. One student said '*the public should be educated because it is ignorance that causes the menace in the country*'. Students mentioned the need for the public to be educated on proper waste management techniques and the dangers associated with poor sanitation. Some advocated the use of the mass media whilst others proposed the study of sanitation as a course from KG through to the university. A student remarked '*The public must be educated on proper waste*

management and the risk involved if not followed'. Another student said '*People are ignorant of the effect poor sanitation poses to them and the community so they must be educated through every means of communication to enlighten them on the need to keep the environment clean*'. Many of the students who proposed public education as a way of dealing with the sanitation issue in Ghana thought this was the best way to bring attitudinal change. Their reason was that some of these offenders might be ignorant of the dangers associated with the manner they dispose of their waste. In the slum settlements of Kampala and Mukono located in central Uganda, it was found that the majority of community members had insufficient knowledge of the link between sanitation and health owing to their low level of education (Musoke et al., 2018). This observation reinforces the view by Spencer (2012) that sanitation education equips individuals with values, attitudes and behaviours required for proper management of sanitation. It is for this same reason that the Ministry of Local Government and Rural Development (MLGRD) in its report of 2010 of Ghana emphasized that environmental sanitation education should be an integral element of sanitation management activities in Ghana. Fortunately, there are now highly patronized community broadcasting stations popularly referred to as information centresfor making announcements on social functions such as funerals, wedding ceremonies and religious activities. Using such medium to launch a sustained education will greatly help to improve sanitation in the Cape Coast municipality.According to Owusu Sekyere, Bagah, and Quansah (2015), educating the public on environmental management and sanitation raises their consciousness not only on the importance of sanitation but also what should be done to improve sanitation for environmental sustainability, improved health and sustainable community development.

Enforcement of sanitation laws was the third in order of proposed methods for improving sanitation in Cape Coast by UCC distance students. Many of them were concerned about the

apparent lack of enforcement of sanitation by-laws in the country. Some students recommended a return of the 'town council' system where sanitary inspectors (referred to as 'tankas' or 'samansaman' in the fanti dialect) were appointed by the district assemblies to enforce sanitation laws.Other students advocated the imposition of instant fines on those found flouting sanitation laws. These students observed that this would inject some discipline into people who take delight in abusing the environment. One student remarked, '*authorities must impose strict punishments on any culprit found guilty'*. Another said '*government must enact strict sanitation laws that citizens must adhere to because we are never ready to change our attitudes towards sanitation'*. The foregoing observation is not surprising as severalsanitation investigations on Ghana have similarly highlighted the need to take enforcement seriously (Mensah, 2019; Money & Antwi-Agyei, 2018). Adukia (2017) argues that sanitation education and infrastructure availability alone may not provide the required standard of sanitation so it is important to regulate people's sanitation behaviour and practices. This view is further reinforced by Worlanyo's argument that regulation is one of the effective approaches to solving environmental problems in Ghana (Worlanyo, 2013). Ackoff (2010) advises that any plan to regulate sanitation behaviour should involve the provision of laws and by-laws, an inspection system for checking compliance, sanctioning mechanisms for failure to comply with the regulation and a system for conflict resolution. Ensuring a robust law enforcement regime could foster a greater civic responsibility towards environmental sanitation behavior, leading to improved environmental and public health for sustainable development. (Gustafsson et al., 2019; Tsinda et al., 2013).

The next popular opinion for curbing poor sanitation in Cape Coast, according to UCC students, is periodic clean-up exercises. According to the students, periodic but compulsory clean-up exercises organized at least once every month would be one of the ways by which the sanitation problem could be effectively dealt with in all communities in the country. One student said, '*Traditional*

authorities in our communities in collaboration with the government should institute compulsory communal labour every month'. Another posited '*Communal labour should be strongly encouraged in Ghana at least at the end of every month'.* Clean-up campaigns create a sense of belonging and friendship among community members. The power of beautification in communal clean-ups naturally encourages residents to participate in the exercise resulting in a shared responsibility for sustainable management of waste at the local level.

According to Nsiah-Gyabaah (2004), improper town planning is a common feature of many communities in Ghana. Students therefore identified proper town planning as the 5th most important condition to consider if the sanitation challenge in Ghana were to be solved. The town and country planning department of many Metropolitan, Municipal, and District Assemblies (MMDAs) in Ghana appear to lack the capacity to enforce planning regulations. One reason accounting for this is government's inability to provide social amenities in allproposed settlements areas prior to development. The result is that people put up their structures at sites where no planning has taken place. To reverse this trend, one student remarked, '*There should be proper town planning to prevent gutters from getting chocked*'.Periodic clean-up campaigns will not be able to fully address Ghana's sanitation challenges if poor land and structural management issues are addressed. Planned cities are Ghana's solution to poor sanitation. This is the view expressed by Dr. Clifford Amoako, an associate member of the Ghana Institute of Planners speaking at the 47th Annual General Conference in Kumasi. He cited poor physical planning amidst rapid population growth and inadequate social infrastructure as causes of bad public sanitation attitude; worsened by poor sanitation awareness. Sanitation and town planning are intrinsically linked. Hence effective town planning is necessary to ensure public health, environmental sustainability, and overall quality of life of the citizenry.

Currently, many Ghanaians package the goodsthey purchase from shops and marketsin black polythene bags (commonly referred to as take-away), making it one of the commonest causes of poor sanitation. These polybags are often left loose once the contents have been removed or used. They are then carried by the wind and deposited in every available space within the community especially the streets. Some students were therefore of the view that placing a ban on the use of polybags will greatly help to improve sanitation in Ghana and Cape Coast in particular. Media discussions on this option have been ongoing for years but government has to date been unable to implement the ban probably due to the convenience it offers the public, financial implication for polybag companies or perhaps the risk of losing political power in future national elections.

Conclusion

Prevalence of poor sanitation in the Cape Coast municipality in order of importance, according to the distance studentsis refuse dumps, chocked drains, littering, refuse container sites, stagnant water pools, open defecation, dirty homes, leaking liquid effluent and gaseous emissions. Causes of poor sanitation in order of ranking, according to the distance students are attitude, poor town planning, inadequate disposal equipment, ignorance, lack of enforcement, inappropriate technology, high waste collection charges, poverty and water scarcity.With sanitation-related diseases, the decreasing order of importance from the students' perspective is malaria, cholera, diarrhoea, typhoid fever, skin infections, dysentery and others such as worm infestations. In order of importance, students proposed the following strategies for dealing with poor sanitation: provision of adequate and appropriate sanitation equipment by government, public education on sanitation, enforcement of sanitation laws, periodic clean-up exercises, proper town planning and ban on use of polybags. Again, perception of sanitation does not depend on one's level of education measured by programme of study. Distance students from the Cape Coast municipality,irrespective of their level of education,

perceive sanitation as a major health problemin their communities and proposed provision of adequate sanitation equipment or facilities, public education and enforcement of sanitation by-laws as the three top strategies for effectively addressing the canker.

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STUDENTS' PERCEPTION OF SANITATION IN THE CAPE COAST MUNICIPALITY

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LIST OF TABLES

Table 1: Students' demographic characteristics

Demographic characteristic	Frequency (N=294)	Percentage
Gender		
Male	158	53.74
Female	136	46.26
Age		
26-30	225	76.53
31-35	33	11.22
36-40	16	5.44
41-45	14	4.76
46-50	6	2.04
Programme of study		
Diploma students	213 (614)	72.45
Degree students	50 (152)	17.00
Masters' students	31 (95)	10.54

488 **Table 2: Students' Ranking of the Prevalence of Poor Sanitation in the Cape Coast**
489 **municipality**

Insanitary condition	N	Min.	Max.	Mean	SD
Refuse dumps	294	1.00	5.00	4.01	1.22
Chocked drains	294	1.00	5.00	3.99	1.29
Littering	294	1.00	5.00	3.86	1.32
Refuse container sites	294	1.00	5.00	3.59	1.37
Stagnant water pools	294	1.00	5.00	3.51	1.37
Open defecation	294	1.00	5.00	3.43	1.44
Dirty homes	294	1.00	5.00	3.41	1.37
Leaking liquid effluent	294	1.00	5.00	3.40	1.22
Polluted water	294	1.00	5.00	3.12	1.49
Gaseous emissions	294	1.00	5.00	2.93	1.33

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492 **Table 3: Students Ranking of the Causes of Poor Sanitation in the Cape Coast municipality**

Causes	N	Min.	Max.	Mean	SD
Attitude	294	1.00	5.00	4.21	1.06
Poor town planning	294	1.00	5.00	4.13	1.09
Inadequate sanitation equipment	294	1.00	5.00	3.93	1.26
Ignorance	294	1.00	5.00	3.89	1.38
Lack of enforcement	294	1.00	5.00	3.84	1.25
Inappropriate technology	294	1.00	5.00	3.74	1.27
High waste collection charges	294	1.00	5.00	3.62	1.31
Population increase	294	1.00	5.00	3.56	1.32
Poverty	294	1.00	5.00	3.25	1.42
Water scarcity	294	1.00	5.00	3.21	1.40

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494 **Table 4: Students Ranking of Sanitation-related Diseases in the Cape Coast municipality.**

Sanitation-related disease	N	Min	Max	Mean	SD
Malaria	294	1.00	5.00	4.41	0.96
Cholera	294	1.00	5.00	4.34	1.06
Diarrhoea	294	1.00	5.00	4.24	1.11
Typhoid fever	294	1.00	5.00	4.04	1.16
Skin infections	294	1.00	5.00	3.93	1.18
Dysentery	294	1.00	5.00	3.83	1.17
Others e.g worm infestation	294	1.00	5.00	3.82	1.12

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Table 5: Students' perception of the prevalence of Poor Sanitation in the Cape Coast municipality by programme

Programme	N	Mean	SD	df	Mean Square	F	Sig.
Diploma	213	35.0751	10.06	2	50.340	0.534	0.587
Degree	50	35.2200	7.96495	291	94.348		
Masters	31	37.0000	9.81156	293			
Total	294	35.3027	9.69783				.

Table 6: Students' perception of the causes of poor sanitation in the Cape Coast municipality by programme

Programme	N	Mean	SD	df	Mean Square	F	Sig.
Diploma	213	37.25	7.80	2	48.022	0.851	0.428
Degree	50	37.16	6.02	291	56.427		
Masters	31	39.09	7.60	293			
Total	294	37.43	7.50				