

Study Centre Sanitary Conditions and Its Impact on Health and Academic Outcomes of Distance Learners at University of Cape Coast.

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Abstract

This study examined the impact of Study Centre Sanitary and hygiene conditions and its impact on health and academic outcomes of Distance Learners at the University of Cape Coast (UCC). The major objective of the study was to find out how sanitary conditions at the host institutions used by the College of Distance Education (CoDE), as study centers for distance education (DE) delivery, impact on the health and academic status of distance education learners. Data was gathered using mainly self-developed and administered questionnaire. The simple random technique was used to select 300 DE learners from 10 study centers in the Ashanti Region of Ghana. Data was analyzed using descriptive and inferential statistics. Approval by the Institutional Research and Ethics Committee of the University of Cape Coast and informed consent from study participants were sought. The results of the study indicated that the state of sanitary conditions and general hygiene practices at CoDE study centres was poor, unmaintained, and inadequate in almost all study centres. This demonstrated that investment in school infrastructure was not given the due priority. The negative impact on the health status and academic outcomes of learners were due to inadequate sanitary facilities despite learners' knowledge on good personal hygiene and sanitary practices. The study concluded that sanitary facilities at CoDE study centres within the study area were not in good state and inadequate for the learner population in the host institutions. Gaps were identified in the management of school resources and enforcement of hygiene and sanitation practices. It was recommended that management of (CoDE-UCC) should collaborate with host institutions to improve sanitary and hygiene practices at the study centres for the benefit of learners.

Keywords: sanitation, hygiene, educational outcomes, study centre, hygiene practice, health status.

Introduction

The provision of good sanitary school environment has a lot of positive impacts on the health status and academic achievement of learners. According to the World Health Organisation (WHO) (2000), sanitation generally refers to the provision of facilities and services for safe disposal of human excreter and other solid waste; and inadequate provision of these facilities is a major cause of diseases worldwide. It has been realized that improving sanitation and hygiene in schools have a significant impact on the health of learners in schools and across communities (WHO, *ibid*). Sanitation could also be explained as the maintenance of good hygiene conditions, through services such as proper waste collection and disposal through good drainage systems. UNICEF, (1988) & Coppens (2005) consider School Sanitation and

Hygiene Education (SSHE) as the combination of hardware and software components that are necessary to produce a healthy school environment to support safe hygiene Behaviour. The authors argue that the hardware components include supply of safe drinking water and facilities for hand washing and safe disposal of human excreta and other solid waste in and around the school environments. The software components are the activities that promote good sanitary and hygiene conditions in the school environments and practices of staff and students that help to prevent the spread of water and sanitation related parasites and diseases.

Snel (2004) & Water Aid Uganda (2013) affirm that the health status of learners greatly influences their educational outcomes and the learners of knowledge on healthy living practices also influences their health status. The authors argue that the negative effects of sicknesses from diseases may lead to learner absenteeism that might affect educational outcomes. However, smart investments in good sanitation and hygiene practices in school environments could greatly prevent the spread of parasites and diseases, increase family incomes, keep learners in school, help preserve the environment, and enhance human dignity. DANIDA, (2007) corroborates this assertion by maintaining that there that there is increasing evidence shows that school sanitation and hygiene education programmes in schools offer high cost benefits to learners and other stakeholders. Unfortunately, the promises of school health and hygiene education programmes have not always been fulfilled by either the government or other stakeholders of education. Many school environments are not safe for students due to neglect of operation and maintenance of sanitation and hygiene facilities. The schools often suffer from non-existent or insufficient water supply, sanitation facilities, dirty and unsafe water supply; unhealthy dirty classrooms and compounds among others. WHO, (ibid) estimates that 88% of diarrhea disease is caused by unsafe water supply and inadequate sanitation and hygiene practices. Under these conditions, school environments become unsafe where disease parasites are transmitted to learners. (WHO, 1997). Learners' ability to learn may be affected by inadequate water supply and poor sanitary and hygiene conditions (Cairn cross & Valdmanis, 2006). This can contribute to poor health which can affect learners' ability to learn and influence their educational achievements and prospects (Clarke & King, 2004; Faheem & Yasir, 2007; Macro, 2010).

Previous studies by Karon, Cronin, Cronk & Henrdwan, (2017) has shown considerable evidence regarding the impact of lack of appropriate hygiene and sanitation practices on the health status and academic achievements of learners. Impaired cognitive learning and learning performance are long- term outcomes of the negative impacts of poor sanitation and hygiene conditions in the school environments. Studies from Karon et al, (2017) have shown that about 75% of all absenteeism are illness related poor hygiene and sanitation conditions in school environments. Information regarding school absences from middle- and high-income countries has shown that poor academic and social development, high dropout rates, and reduced learning performance are attributed to learner absenteeism in schools.

Sanitation and hygiene issues in school environments are of critical concern to all stakeholders of education as far as learners' achievement are concerned.

Many of the study centres of CoDE-UCC by cursory look, appear to be challenged with issues of poor sanitation and hygiene conditions. The poor sanitation and hygiene conditions caught the attention of the researcher. This situation and its inherent poor hygiene practices which are not different from what pertains in other study centres across the country, which make the study centres no longer an enabling environment

for learning (WHO, 2009). Thus, the decision to examine the sanitary conditions and its impact on learners' health and academic achievement. The following research questions were formulated to guide this research: *How do learners hygienically dispose of waste at the study centres? How do learners assess the state of sanitation conditions at the study centres? How does the poor sanitary conditions impact on the health academic achievement of learners?*

It is believed that findings from the study would add on to existing knowledge and help learners to increase their knowledge in hygiene and sanitation. The findings from this study would also help CoDE – UCC to collaborate with host institutions to improve the sanitary conditions at the study centres.

History of School Health Education Programme (SHEP) in Ghana.

In 1992 the Government of Ghana directed the Ministries of Education and Health to introduce the School Health Education Programme (SHEP) to complement and supplement the academic component of formal education. WHO defines as School Health Programme Education which as a combination of services ensuring the physical, mental and social well-being of learners to maximize their learning capabilities? SHEP also seeks to equip learners with the necessary health skills that will enable them take control of their own well-being by using available human and material resources to ensure improved health status. This programme also advances the well-being of learners, by positively influencing their health, knowledge, attitudes, beliefs and values. In addition, SHEP aims at ensuring the provision of comprehensive health and nutrition education and its related support services in schools. It is also to equip learners with basic life skills for healthy living, which leads to improvements in survival and educational outcomes, including school enrolment, retention and academic performance. SHEP is also envisioned to create well informed health conscious school populations who have full potentials to act as change agents in their homes and communities and to contribute effectively and efficiently to national development (WHO, *ibid*). The mission of SHEP is to facilitate the effective mobilization and deployment of available human, material and financial resources to equip school learners with basic life skills for healthy living through skill – based health education, promoting good health and preventing diseases among the school population (Snel, *ibid*; DANIDA, *ibid*).

The Importance of School Sanitation and Hygiene Education (SSHE)

Del Rosso and Marek (1996) argue that healthy learners are more likely to attend school regularly and are likely to perform better in their academic work. The authors explain that learners who are taught in schools to acquire essential health related knowledge and skills are not only less likely to engage in health-compromising behaviour but more likely to carry the knowledge and skills for healthy lifestyles. Learners pass on health-related knowledge and skills acquired from schools to parents and other members of the household. Thus, school-based health education programmes benefit not only students but family members and the community at large (WHO, *ibid*). A learner educated to the benefits of sanitation and good hygiene behaviour is a conduit for transmitting the knowledge gained far beyond the school environment, leading to lasting improvement not only to his or her health and wellbeing, but also to that of the family and the wider community, (Snel IRC *ibid*). Investing in school sanitation and hygiene education and the importance of School Health and Hygiene Education therefore cannot be over- emphasized.

Sanitation and hygiene are therefore fundamental to good health and dignity of learners and improving school sanitation and hygiene practices in school environments should not be underestimated. SSHE is an integral package of school health education systems on water, sanitation and hygiene and needs to be recognized and endorsed by all stakeholders. Likewise, a joint strategy session at the World Education Forum held in Dakar in (2000) made a strong case that provision of effective school health services is an important strategy for achieving Education for All. Provision of school health services not only responds to a need, but also increases the efficacy of other investments in development, ensures better educational outcomes, achieves greater social equity and is a highly cost-effective strategy (Integrated School Health Policy 2012). Globally, about 1.1 billion people are currently without access to improved water supply and about 2.4 billion do not benefit from any form of improved sanitation service (WHO, *ibid*). Majority of these people live in Asia and Africa. In a study conducted by WHO in Africa, it came to light that two out of five people lack improved water supply. Burgers (2000), opines that the main component of sanitation and hygiene is the provision of safe water and sanitation facilities in schools. To him, this is the first step towards a healthy physical learning environment, benefiting both learning and health. However, Burges is of the view that, the mere provision of these facilities does not necessarily make them sustainable or produce the desired impact. It is the use of the facilities and its related appropriate hygiene practices of people that provides health benefits. In schools, sanitation and hygiene education aims to promote these practices that will help to prevent water and sanitation-related diseases as well as encouraging healthy behaviour of learners to ensure academic success and the future generation of adults. The success of a school sanitation and hygiene programme is therefore not determined only by the number of facilities constructed or installed and water connections built but by what learners know about sanitation and hygiene practices and how they put this knowledge into practice (WHO, *ibid*).

Methodology

The research adopted a survey design. According to Bryman and Bell (2007), this research design allows researchers to easily describe and provide an understanding of a phenomenon using simple descriptive statistics. The design was found suitable because it permitted the researcher to obtain data from the respondents at a relatively low cost. The population of the study comprised all learners at the various study centres of CoDE-UCC throughout the country. The sample for the study comprises 300 learners, who were randomly selected from the Ashanti Regional study centres. The study centres were purposively selected because they were those which appeared have severe sanitation and hygiene challenges.

Data Collection and Analysis

The main instrument used in gathering data was a well-structured questionnaire. Fifteen items made up of open and close ended types of questions were used to collect data on how learners assessed, practice sanitation and hygiene in their study centres. The questionnaire was designed based on the objectives. According to Wallen and Fraenkel (2001), cited in Inacom (2012), questionnaires are designed to collect data for decision in research. To them, it is considered as the best for researchers who wish to acquire original data for describing a large population. Semi-structured interview was used to throw more light on

issues that arose from the questionnaire. In order to obtain validity for the study, the instrument for data collection was pre-tested at the UCC study centre. The pre-testing was to reveal any ambiguity that may be identified in administering the questionnaire. The questionnaire was further validated by colleagues and other experts in science to determine its content and face validity. Cronbach alpha test was applied to establish the internal consistency of the questionnaire at (0.751). Thus, the instrument was highly reliable (Cohen, Mannion & Morrison, 2007). In order to examine the views of the respondents on the topic, the field data were checked for consistency and organized in tables according to the research questions. Descriptive statistics using frequencies and simple percentages were used to describe the data based on the reaction of the respondents to the questionnaires. The Statistical Package for Social Science (SPSS) was used for data analysis. The findings were discussed and supported with related literature.

Ethical considerations

Approval by the Institutional Research and Ethics Committee of the University of Cape Coast and informed consent from study participants were sought.

Results and Findings

The results are presented based on the objectives underlining the study. These are presented below:

Table 1: Demographic Characteristics of Respondents

Demographic Variables	Number of Respondents	Percentage (%)
<i>Gender</i>		
Male	112	53.8
Female	96	46.2
<i>Age Distribution</i>		
18-25 years	80	38.5
26-35 years	112	53.8
36-45 years	13	6.3
46-55 years	2	1.0
Over 50years	1	0.5
<i>Program of Study</i>		
DBE	126	60.6
DPFE	75	36.1
DMSE	7	3.4
<i>Educational Level</i>		
Level 100	29	13.9
Level 200	6	2.9
Level 300	17	81.7
Level 400	3	1.5

(Source: Field Work, 2019)

Table 1 provides information on the demographic characteristics of the respondents. A total of 208 respondents participated in the study. It was observed that majority of the respondents (53.8%) were males

and the remaining proportion were females. Another 53.8% of them were between the ages of 26 to 35 years while 38% were aged 18 to 25. Also, 6.3% were aged 36 to 45, while 1% and 0.5% respectively were between the ages of 46 to 55 and above 50 years. Furthermore, 60.6% of them were undertaking a program in Diploma in Basic Education (DBE). This was followed by 36.1% for those undertaking a program in Diploma in Psychology and Foundations of Education with only 3.4% of them taking a program in Diploma in Mathematics and Science Education. Another 81.7% of them were in the third year of their studies. This was followed by 13.9% for those who were in first year, while the remaining proportions, 2.9% and 1.5% respectively were in second and fourth years of their studies.

Table 2: Availability and Type of Toilet Facilities at the Study Centres

Variable	Number of Respondents	Percentage (%)
Availability of Toilet Facilities		
Yes	146	70.2
No	62	29.8
Type of Toilet Facilities Available		
Pit Latrine	22	10.6
Improved Pit Latrine	15	7.2
KVIP	17	8.2
WC	86	41.3
Others	7	3.3

(Source: Field Work, 2019)

The researcher sought to find out about the toilet facilities available at the study centres (Table 2). It was observed that 70.2% of the centres have toilet facilities available at their study centres. For the 70.2% with toilet facilities, 41.3% of them were Water Closets (WC). This was followed by 10.6% for those with Pit Latrines at their study centres. For Kumasi Ventilated Improved Pit Latrines and Improved Pit Latrines, they were represented by 8.2% and 7.2% respectively. Only 3.3% have other types of toilet facilities.

Table 3: Conditions of Sanitation at the Study Centres

Statements	Disagree (%)	Neutral (%)	Agree (%)
The centre is not crowded with distance learners and students from the host institutions	27 (13.0)	15 (7.2)	166 (79.8)
The centre is always neat and clean	88 (42.3)	36 (17.3)	84 (40.4)
The centre is free from disease-causing insects such as tsetse fly, bedbugs, mosquitoes, etc.	124 (59.6)	21 (10.1)	63 (30.3)
Classrooms are Large Enough for Good Ventilation	28 (13.5)	24 (11.5)	156 (75.0)

Classrooms are well illuminated (There is proper lightening systems) to enable us to see clearly	67 (32.2)	31 (14.9)	110 (52.9)
Classrooms are Large Enough to Contain us	26 (12.5)	20 (9.6)	162 (77.9)
Classrooms are Always Kept Neat Throughout the Weekends	123 (59.1)	31 (14.9)	54 (26.0)
Washrooms at this Study Centre are Gender Friendly	115 (55.3)	20 (9.6)	73 (35.9)
Washrooms at this Centre are Clean and Neat	144 (69.2)	28 (13.5)	36 (17.3)
Waste Bins are Available at the Study Centre	70 (33.7)	28 (13.5)	109 (52.4)
There are Adequate Cleaners Who Ensure That Waste is Collected and on Time	131 (63.0)	33 (15.9)	44 (21.2)

Table 4.2 presents information from the respondents on their awareness and appreciation for the use of mobile technology-based library services. With regards to the statement “*The centre is not crowded with distance learners and students from the host institutions*”, it was observed that 27(13%) disagreed with the statement while 15(7.2%) neither agreed nor disagreed. However, 166(79.8%) agreed with the statement. With reference to the centre being always neat and clean, it was observed that 88(742.3%) are in support of the statement while 36(17.3%) neither agreed nor disagreed. However, 84(40.4%) agreed with it. With respect to whether respondents the centre is free from disease-causing insects such as tsetse fly, bedbugs, mosquitoes, etc. or not, 124(59.6%) of the respondents disagreed with the statement while 63(30.3%) agreed. However, only 21(10.1%) were not sure of such condition at the study centres. On the issue of classrooms being large enough for good ventilation, 28(13.5%) disagreed with the statement while only 24(11.5%) neither agreed nor disagreed. However, 156(75%) are fully in support of the statement. With reference to the classrooms being well illuminated (there is proper lightening systems) to enable students see clearly, it was observed that 67(32.2%) disagreed while 31(14.9%) neither agreed nor disagreed with the statement. However, 110(52.9%) agreed. On the issue of whether classrooms are large enough to contain students or not, 26(12.5%) disagreed while only 20(9.6%) were not sure. However, 162(77.9%) agreed with the statement. With reference to the statement “*Classrooms are Always Kept Neat Throughout the Weekends*” it was observed that 123(59.1%) disagreed with the statement while 31(14.9%) neither agreed nor disagreed. However, only 54(26%) agreed. With regards to the statement “*Washrooms at this Study Centre are Gender Friendly*”, it was observed that 115(55.3%) disagreed with the statement while 20(9.6%) neither agreed nor disagreed. However, 73(35.9%) agreed with the statement. With respect to the statement “*Washrooms at this Centre are Clean and Neat*”, it was observed that 36(17.3%) of the respondents agreed with the statement while 28(13.5%) neither agreed nor disagreed. However, 144(69.2%) disagreed with the statement. With respect to the statement “*Waste Bins are Available at the Study Centre*”, it was observed that 109(52.4%) of the respondents agreed with the statement while 28(13.5%) neither agreed nor disagreed. However, 70(33.7%) disagreed with the statement. On the issue of whether there are adequate cleaners who ensure that waste is collected and on time, 44(21.2%) agreed with the statement while 131(63%) disagreed. However, 33(15.9%) neither agreed nor disagreed.

Table 4: Disposal of Waste at the Study Centres

Ways of Disposal of Waste	Number of Respondents	Percentage (%)
Throwing rubbish anywhere on the compound	44	21.2
Dustbins are provided at vantage points at the centre	121	58.2
Sending it to the nearest rubbish dump directly	31	14.9
Others	12	5.7

Table 4 shows that 58.2% of the respondents believed that wastes are disposed off at the various study centres into dustbins provided by the authorities. These dustbins are provided at vantage points at the centre. This was followed by 21.2% for those who claimed they throw rubbish anywhere on the compound of the centre, while the only 14.9% of the study centres have rubbish dumps around where students put their rubbish into.

Table 5: Condition of Washrooms at the Study Centre

	Responses		Percent of Cases (%)
	Frequency	Percentage (%)	
Smelly	69	25.7	36.7
Dirty	58	21.6	30.9
Lack of Comfort and Privacy	81	30.2	43.1
Location (Too far away from Lecture Theatres)	36	13.4	19.1
Others	24	9.0	12.8
Total	268	100.0	142.6

Table 5 provides information on the view of the respondents on the condition of the washrooms at the study centres. It was observed that 30.2% believed the washroom lack comfort and privacy. This was followed by 25.7% and 21.6% for those who think the washrooms are smelly and dirty respectively. Those who think the location (Too far away from Lecture Theatres) also followed with 13.4%. The with description of other conditions ended it with 9%.

Table 6: Ranking of Sanitation Condition at the Centre

Rankings	Number of Respondents	Percentage (%)
Good	47	22.6
Very Good	11	5.3
Poor	93	44.8
Very Poor	57	27.4

The respondents were to rank the sanitary conditions at their study centres. The responses are presented in Table 6. It was observed that 44.8% rated the sanitary conditions are poor. This was followed by 27.4% who also rated it as very poor. However, 22.6% and 5.3% of them respectively rated it as good and very good.

Table 7: Effects of the Sanitary Conditions on Health of the Students

Variable	Number of Respondents	Percentage (%)
<i>Do the Sanitary Conditions Have Effects?</i>		
Yes	146	70.2
No	62	29.8
<i>Effects of the Sanitary Conditions</i>		
Fall sick and miss out on lectures	41	28.1
Bad odour	59	40.4
Causes disease	46	31.5

The researcher sought to find out about the effects of the sanitary conditions on the health of the students. It was observed that 70.2% of the students believed that the sanitary conditions of the study centres have effects on their health. Out of these number, 40.4% of them believed that the bad odour from the washrooms at the study centres is a problem to their health. This was followed by 31.5% and 28.1% respectively for those who believed that the sanitary conditions of the study centres in general are not free from disease-causing insects such as tsetse fly, bedbugs, mosquitoes, and falling sick and missing out on lectures as a result of the bad sanitary conditions of the study centres.

Table 8: Things to be Improved at the Study Centres

Variable	Number of Respondents	Percentage (%)
<i>Is there Anything to be Improved?</i>		
Yes	149	72.2
No	33	15.9
<i>Things to be Improved at the Study Centres</i>		
Ventilation	30	14.4

Provide dustbins	20	9.6
Provide More Toilet Facilities	35	16.8
Desks in the classrooms not in good conditions	18	8.7
Control Noise Making at the Centre	6	2.9
Lightening System	5	2.4
Provide Cleaners at the Centre	18	8.7

The researcher sought to find out about the effects of the sanitary conditions on the health of the students. It was observed that 72.2% of the students believed there were so many things they think should be improved at the study centres. Out of these number, 16.8% of them want the authorities to provide more toilet facilities at the study centres. Also, 14.4% opted for ventilation to be improved while 9.6 wanted more dustbins to be provided at vantage points at the various centres. Furthermore, 8.7% each requested for more desks in the classrooms as well as more cleaners at the centres. The remaining 5.3% wanted control noise making at the centre from churches and lightening system at the various centres to be improved.

Table 9: Relationship Between Condition of Washrooms and Health of the Students

Variables of interest	Pearson Chi-Square Value	DF	P-value
Smelly Washrooms	11.643	4	0.020
Total	208		
Dirty Washrooms	19.429	4	0.001
Total	208		
Lack of Comfort and Privacy	5.223	4	0.265
Total	208		
Location (far away from lecture theatre)	5.993	4	0.200
Total	208		
Others	8.819	4	0.066
Total	208		

The hypothesis of interest to the researcher was that the conditions of the washrooms at the various study centres do not have effects on the health of the students. Table 9 presents the results of the Chi-Square test. It was observed that only smelly and dirty washrooms have significant effects on the health of the students. This is because these two conditions obtained p-values of less than 0.05 (i.e., 0.020 and 0.001 respectively). That is to say that the smelly and dirty nature of the washrooms at the study centres have effects on the health of the students.

Table 10: Relationship Between Waste Disposal Methods and Health of the Students

	Value	DF	p-value
Pearson Chi-Square	26.516	8	0.001
Number of Valid Cases	208		

(Source: Field Work, 2019)

The hypothesis of interest to the researcher was that the waste disposal methods at the various study centres do not have effects on the health of the students. Table 10 presents the results of the Pearson’s Chi-Square test. It was observed that the waste disposal methods at the centres have significant influence on the health of the students. This is because p-value (0.001) of less than 0.05. It is not surprising as majority of the students suggested provision of more dustbins at vantage points as one of the major things, they would like to be improved at the various study centres.

Conclusions and Recommendations

Good sanitation could be considered as policy and practice of protecting health through hygienic measures. Sanitation is necessary in all places which includes schools. School sanitation refers to hygienic practices that occur in schools. However, sanitation in schools and other institutions have been observed to be poor. This is due to a number of factors such as inadequate hygiene education, neglect of health facilities, insufficient water supply, inadequate facilities, lack of dustbins for disposing wastes, indiscriminate waste disposal in the school environments inadequate funds to provide sanitation equipment and poor waste storage methods adopted. Poor sanitation has led to negative effects on students’ health and academic outcomes.

The study revealed that majority of the respondents (53.8%) were males. Another 91.8% of them were between the ages of 18 to 35 years. Furthermore, 60.6% of them were undertaking a program in Diploma in Basic Education (DBE). Another 81.7% of them were in the third year of their studies. Only 41.3% of the study centres have WCs. The study also revealed that 79.8% of the respondents are of the view that their study centres are not crowded with distance learners and students from the host institutions. Thus, there is always easy flow and movement of people at the various study centres, both in and out of the lecture rooms. Only 42.3% of the respondents are of the view that the centre is not always neat and clean. About 60% are of the views that the centre is full of disease-causing insects such as tsetse fly, bedbugs, mosquitoes, among others. Another majority, (75%) of them support the fact that classrooms are large enough for good ventilation whiles another 52.9% agreed that the classrooms are well illuminated (thus, there is proper lightening systems) to enable students see clearly. Also, 77.9% of the respondents are of the views that classrooms are large enough to contain students whiles another 59.1% of them are not in support of the statement that classrooms are always kept neat throughout the weekends. Furthermore, 55.3% of the respondents disagreed that washrooms at this study centre are gender friendly. Thus, there are situations where both males and females share the same washroom at some centres. Moreover, another 69.2% of them are not in support of the assertion that washrooms at this centre are clean and neat. Finally, 52.4% of the respondents agreed with the statement that waste bins are available at the study centre whiles another 63% of them are in support of the fact that there are adequate cleaners who ensure that waste is collected and on

time. Another 58.2% of the centres studied have dustbins at vantage points where respondents dump their refuse.

In addition, 77.5% of the respondents are of the view that the conditions of the washrooms at the study centres lack comfort and privacy, are smelly and dirty. Another 72.2% of them rated the sanitary conditions at the various study centres as poor. The major effects of the poor sanitary conditions of the study centres on the health status of the distance learners that impact on their academic outcomes include, bad odour from the washrooms, disease-causing insects such as tsetse fly, bedbugs, mosquitoes and flies among others. DE learners frequently fall sick and miss out Face- to- face sessions as a result of the poor sanitary and hygiene conditions of the study centres. The respondents however suggested the following to be improved at the various study centres; more wash room facilities, proper ventilation in the classrooms, more dustbins provided at vantage points, more tables in the classrooms as well as more cleaners, control noise of making at the study centres from churches activities and improve lightening system at the various centres. With respect to the relationships between the conditions of the washroom and health status of learners, it was observed that only smelly and dirty washrooms have significant effects on the health of the students. This is because these two conditions obtained p-values of less than 0.05 (i.e., 0.020 and 0.001 respectively). That is to say that the smelly and dirty nature of the washrooms at the study centres have effects on the health of the students. It was also observed that the waste disposal methods at the study centres have significant influence on the health of the learners. This is because p-value (0.001) of less than 0.05. It is not surprising as majority of the students suggested provision of more dustbins at vantage points as one of the major things, they would like to be improved at the various study centres. Thus, the poor sanitation leads to learners' ill health which could impact negatively on their academic outcomes as result of absenteeism from ill- health. Effects of poor sanitation on learners' health is manifested when learners suffer from diseases like malaria, cholera, diarrhea, and even death in extreme cases.

Based on the findings and conclusions, the following recommendations were made to assist in improving sanitation and hygiene conditions at the study centre of CoDE-UCC. The management of CoDE, through the authorities of the schools (study centres) have to ensure that the various ways of improving sanitation within the institutions at the various study centres are used in synergy instead of in isolation due to fact that these methods are all important. They can also support the schools' management to ensure the purchase of various facilities/equipment needed for students to live in a hygienic environment. The host institution must ensure that workers in charge of cleaning the school environment are adequately monitored to ensure they discharge their duties properly. When this is supported by education to change behaviour towards the proper and consistent use of these facilities the incidence of public health diseases may reduce. Moreover, UCC CoDE should provide additional washroom facilities in all urban communities to help reduce the inadequacy of facilities for the learner population. Based on the above findings from the study, there is an indication showing that there are sanitation problems UCC CoDE study centres. Availability of cleaning materials has been a problem and other health related issues.

Limitations of the Study

This study was cross sectional in nature; therefore, the generalization of its findings is limited only to the study centers in used. Since the responses from the instrument were self- reported, DE learners were likely to give responses that were socially desirable that may not reflect their practices.

REFERENCES

- A Manual of School Sanitation and Hygiene: Towards better programming (1998) UNICEF/IRC. *International Water and Sanitation Centre, Delft, the Netherlands.*
- Aggarwal, Y. P. (2001) “Progress towards universal access and retention” *District Information Systems for Education, NUEPA.*
- Bryman, A. & Bell, E. (2007) The Ethics of Management Research: An Exploratory Content Analysis. *British Journal of Management, Wiley Online Library.*
- Burgers, L. (2000). “Background and rationale for school sanitation and hygiene education” *International Rescue Committee (IRC)*
- Cairn cross, S. & Valdmanis, V. (2006) In Jamison V.T, Breman, J.G., Measham A.R., Alleyne G, Claesson, M. Washington (DC): World Bank.
- Carter, R. C. & Kidega, G. (2013) Sustainability of WASH Services Supported by Water Aid in Uganda. Draft Report.
- Greene, L. E., Freeman, M. C., Rheingans, R., Akoko, D. & Saboori, S. C. (2012). Impact of a school – based hygiene promotion and sanitation intervention on pupil hand contamination in Western Kenya: A cluster randomized trial. *American Journal of Med. Hygiene (87) 385-393.*
- Gyabaah, D., Awuah, E. & Ackerson, N.O.B(2009). Sanitation in Basic Schools. – A case study of Tano South District. Accessed at <https://www.icwash.org/.../sanitation-basic-case-study-tano-south-district-paper-prepared-west-africa-on-24/2/18>.
- Integrated School Health Policy (2012) Republic of South Africa, Provincial Department of Basic Education. Government Services. Strobel Street, Pretoria.
- Jasper, C., Le T. & Bartram, J. (2012). Water and sanitation in schools: a systematic review of the health and educational outcomes. *International Journal of Environmental Research and Public Health.*
- Karon A. J., Cronin A., Cronk R., Henrdwan R. (2017) Improving water, sanitation, and hygiene in schools in Indonesia: A cross- sectional assessment on sustaining infrastructural and behavioral interventions. *International Journal of Hygiene Environmental Health.* Pp 220: 539-550.
- Mensah-Kuffour, A. G. & Gabblah, G. P. (2017). Sanitation in Accra Technical University Hostel and Its Environs: A case study of Accra Technical Old Hostel. *Hospitality&Management,2(1):1-12.*
- Musa, R. M.& Haque, M. (2016). Assessment of factors contributing to poor environmental sanitation in university’s male hostel. *International Journal of Pharmaceutical Research 8(3):59-63.*
- Nansereko, F. (2010). Adequacy and utilization of sanitation facilities in Mpigi District. Accessed at https://news.mak.ac.ug/documents/.../NANSEREKO_Fatumah.pdf.
- Snel, M. (2003). School Sanitation and Hygiene Education: Thematic Overview Paper. IRC *International Water and Sanitation Centre. Delft, the Netherlands.*

- Snel, M. (2004) The Worth of School Health Sanitation and Hygiene Education (SSHE)- IRC. *International Water and Sanitation Centre. Delft, the Netherlands.*
- SSHE, (2004) School Sanitation and Hygiene Education in India: investment in building children's future. *SSHE Global Symposium.*
- Trines V., Garn J., Chang H., Freeman, M. (2016). The Impact of a school-Based water, sanitation, and Hygiene Programme on Absenteeism, Diarrhea, and Respiratory Infection: A matched- Control Trial in Mal. *American Journal of Tropical Med. Hygiene* pp (94) 1418-1425.
- UNICEF, (2005) "Lack of safe water and sanitation in schools jeopardizes quality education" *Roundtable on Water, Sanitation and Hygiene Education for Schools.*
- WHO (2000) Health Systems: Improving performance: 53rd World Health Assembly Provisional Agenda Item 3.
- WHO (2000), "Global water supply and sanitation assessment 2000 report", Geneva.
- WHO (2009), "Water, sanitation and hygiene standards for schools in low-cost settings", (http://whqlibdoc.who.int/publications/2009/9789241547796_eng.pdf?ua=1, accessed 21 March, 2019
- WHO, (2005) "Sanitation and Hygiene Promotion: Programming guidance"
- World Health Organization & UNICEF (2012). *Progress on drinking water and sanitation: Update.* United States: WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation.