



Access to Safe Drinking Water and Sanitary Facilities and Pupil Participation in Education in Public Primary Schools in Kenya: A Case of Gichugu Constituency, Kirinyaga County

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ABSTRACT

Provision of safe water for consumption and appropriate sanitation facilities have variously been advocated as critical forerunners to pupil participation in primary school education. However, these facilities are not consistently provided, that in various schools, water and cleanliness services are in dilapidated condition and thus expose pupils to obvious health risk and unsafe learning environments. This study investigated the access to clean water for drinking and sanitary facilities and pupil participation in education in public primary schools in Gichugu Constituency, Kirinyaga County, Kenya. The objectives of the study were to; assess the relationship between availability to safe drinking, establish the provision of sanitation facilities and pupil participation in public primary schools. The research design used in this study was the descriptive survey and the theory that guided it was the Social Constructionist of Sahlin. The target population covered 75 head teachers in public primary schools in Gichugu Constituency. Krecjie and Morgans formula was used in sample size determination which yielded a sample of 63 respondents and simple random sampling to select the study sample. A self-scoring questionnaire administered to the sampled respondents was used to collect data. Descriptive statistics, namely frequencies and percentages were used in data analysis and was aided the computer software SPSS version 20. The findings were represented in form of frequency tables and narrations. The research revealed that most schools had hygienic and water for drinking available to the learners. The study also revealed that academic participation improved in schools where pupils had hygienic drinking water, while absence of clean water for drinking led to poor school. The study established that poor sanitation amenities led to occurrence of infections which affected learners' participation in curricular activities. Lack of clean conveniences added to absenteeism and high occurrences of diseases among pupils in primary schools. In line with the findings, the study commends that the, National and County Governments and the local community should ensure that all public primary schools in Gichugu Constituency have been supplied with piped water in order to control infections that affect pupils' attainment of education. Education stakeholders ought to underscore the provision of adequate sanitation facilities schools so as to advance pupils' hygiene and participation in school.

Key words: safe drinking water, sanitation facilities, pupil participation, absenteeism, parasitic infections.

INTRODUCTION

All over the world there has been intensified efforts to sensitize communities of the importance of providing clean water to pupils in school as a measure avert the spread of water born infections, improve school participation and ultimately their academic achievement (Greene et al., 2012). Unhygienic water and poor sanitation have been



identified as the major contributing factors in the spread of infections such as diarrheal related diseases every year, causing deaths among kids and contributing significantly to school absenteeism among pupils in developing counties (WHO/UNICEF, 2018). In line with this, pupils have a right to access reliable and safe school toilets, clean water, hand washing facilities, hygienic surrounding and information on maintenance of hygiene. Where these measures are imputed, learning among pupils is improved, attend school consistently in addition to appropriate hygiene in their families thus passing behavioural changes to the entire community (IRC, 2007). Sanitary services in education institutions are progressively being acknowledged as basic to promotion of children's health. Clean water is vital in averting ill health, for both the school going children and the larger community. According to Jayachandran (2018) several global initiatives have underscored the importance of provision of water as a prerequisite to health care and tackling priority diseases; notably the World Health Organization has underwritten several international conferences, such as Alma-Ata Declaration, World Water Conference in Mardelplata, the MDGs and the WSFSD remains relevant in provision of primary health care. Additionally, the United Nations Sustainable Development Goals (2015) states that the global move towards achievement of universal primary school education and to ensure the children complete the full cycle of primary education is being compromised by failure to provide clean water to learners in learning institutions. Education and access to clean hygiene and sanitation are very critical to a child's growth, wellbeing and learning. When schools lack these basic facilities, learning opportunities are lost as children have to spend more time collecting water or looking for a safe place to relieve and when these children are girls the situation is even worse (WHO/UNICEF, 2018). According to UNICEF (2009) in developing countries many primary schools have deplorable sanitation facilities, which pose a health risk to the pupils. This contributes to spread of infections among pupils which results in irregular school attendance, low academic achievement and high dropout rates especially among girls. UNICEF (2012) further mentions the benefits of water and sanitation and points out that groups in the population that reliably make use of less water tend to be afflicted by poor health in comparison to population segments using more water. Several health surveys have affirmed this noting that prevalence of diarrheal is strongly correlated to children well-being and morbidity (Bado, Susuman & Nebie 2016).

According to UNICEF (2006) provision of clean and reliable water and improved sanitation amenities in schools is the surest way that safeguards high standards of hygiene are maintained. Aschalew, Charles, Amy and Tammo (2013) argued that the spread of infections is affected by personal hygiene and environmental hygiene and therefore provision of clean learning environments is paramount to reduce incidence of infection among learners. They impressed the notion that learners lose valuable time when undertaking treatment and healing process which translates in low academic performance. Schools and other educational institutions are normally crowded and this offers a breeding ground for parasitic and other infections. Pinar et al. (2004) pointed out that good sanitation was related with reduced prevalence of abdominal parasites which safeguarded that pupils attend school consistently without missing classes.

A study conducted by Laura et al. (2012) in Rome amongst children, revealed that unhygienic lavatories contributed to worsening of well-being in children as a result of widespread transmission of parasitic. The study further revealed that the parasitic diseases contributed to high rates of absenteeism among learners from these backgrounds which drastically affected their academic performance.



According to Vikram et al. (2008) poverty, lack of education, low standards of cleanliness, lack uncontaminated water and moist conditions are the main influences related to abdominal parasites in children. Unsanitary sewage disposal, lack of well-organized learner hygiene measures in educational institution such as provision of good and clean toilets was associated with high rate of infection spread among learners. Al-Shammari, et al (2001) study in Riyadh, Saudi Arabia concluded that poor storage of water and exposed sewerage removal were significantly linked to stomach infections amongst learners although they added that care of pit latrines, poor solid waste disposal and open sewerage in the proximity of institutions significantly increased the risk of intestinal parasitic infections. Learners who suffered from intestinal infections were unable to attend school and if they attended the classes they exhibited lower concentration levels and ideally when assessment was done, such learners posted very low scores.

According to WHO/UNICEF (2015) provision of clean water has been a major advancement toward curtailing the proportion of children affected by diarrheal morbidity, however, in sub-Saharan Africa this goal has remained elusive with major challenges being experienced with respect to clean water supply. According to World Bank (2017), if no action is taken to address water and sanitation issues, diseases related to a lack of water will claim as many as 135 million lives by 2020. A related study in Nigeria by Ezeagwuna, Okwelogu and Ogbuagu (2009) on intestinal parasitic infections revealed that the spread of these intestinal infections among primary school pupils was positively correlated to overcrowding in institutions and negatively correlated to academic performance. The scarcity of clean toilets and pit latrines in schools is a risk factor to health and may negatively impact on learners' prospective to schooling.

In an attempt to improve enrollment, participation and completion of the primary school cycle, the Kenya government introduced the free primary school programme in January 2003 with a view to provide more prospects to the underprivileged children in the society (Sifuna, 2005). The FPE programme stopped direct payment of levies to schools arguing that such levies were a barrier to children from poor backgrounds accessing education. The free education policy was so popular that additional 1.5 million children enrolled in primary schools. This huge increment in enrollment caused in congestion since the government did not put measures to expand the prevailing facilities to cater for the large population (Republic of Kenya, 2005). Benta and Simatwa (2010) points out that despite the heavy investment by the government in terms of monetary and human resources in the FPE, serious challenges related to hygienic facilities particularly toilets, clean water, hygienic pads threatened to roll back the gains as diseases and infections among pupils escalated by the day. According to Yieke (2006) sudden expansion in enrollment has exerted excessive pressure on existing sanitation facilities that threatens to compromise the health of learners, instructional quality, discipline, dropout and repetition particularly among female learners.

A survey by Mbula (2014) in public primary schools in Machakos County found out that upgrading in sanitation amenities resulted in reduction of pupil absenteeism and increase in academic performance in examinations. According to Kirinyaga County Ministry of Health (2015) in Gichugu Constituency, public primary schools face fiscal challenges and thus most do not have funds to cater for expanding the social amenities following the introduction of FPE, thus the need to evaluate the amenities in schools. Additionally, there are limited



studies on the status on provision of clean water health facilities in public primary schools in Gichugu Constituency despite the large increase in enrollment. The primary schools and the availability of water and sanitary services in primary schools in Gichugu Constituency.

Statement of the Problem

Water and sanitation are vital components in schools that are fundamental in ensuring social and cognitive development of children at early stages. However, these facilities are not consistently provided in public primary schools, particularly with the provision of Free Primary Education policies. In some public primary schools, water and sanitation facilities are in dilapidated condition and thus exposing pupils to apparent health risk and unsafe learning environments. Such facilities are likely to negatively affect pupils' academic performance. In addition, few scholars have investigated availability of clean water and hygienic conditions as precursors to learners' academic performance in Gichugu Constituency. This study therefore provides paradigm shift from opinion based evidence to research based empirical evidence on providing clean water and hygienic services to pupils in public primary schools in Gichugu Constituency in Kenya.

Purpose of the Study

The aim of this investigation was to establish the access to clean drinking water and sanitary facilities by pupils in public primary schools Gichugu Constituency, in Kenya.

Research Objectives

The study was guided by the following objectives, which were to;

Assess the relationship between provision of safe drinking in schools and pupil participation in public primary schools Gichugu Constituency, in Kenya.

Establish the relationship between provision of sanitation facilities and pupil participation in public primary schools Gichugu Constituency, in Kenya.

Theoretical Framework

This research was informed by Sahlin (2006) Social Constructionist Theory propounded. Social Constructivism theorizes that information gaining is a compound development that involves linguistic, public, community interface and cognitive roles that affect a person's rational improvement. Social Constructivism also holds that social processes aids in expansion of logical thought and therefore providing social conveniences might be related to academic achievement. The status of social comforts in educational institutions was investigated to support the theory that social processes aid in development of intellectual capacity among learners. The provision of social amenities supports pupils in acquisition of social competencies which provide a measure for intellectual growth as well as life skills development. This study was based on the premise that amenities play a pivotal part in aiding social skills growth in children. This study collected information from Gichugu Constituency primary schools that showed the link between social amenities and academic performance of children.

METHODOLOGY

This research assumed a descriptive research design. Orodho (2013) states that descriptive studies permit a scholar to collect data, sum up, present and infer the data without manipulating the variables. This design was appropriate for the study because it enabled assessment of providing clean drinking water and sanitary services to pupils in public



primary schools in Gichugu Constituency, Kenya. The population consisted of 75 head teachers in Gichugu Constituency. According to the DEO (2014) there were 75 head teachers out of which 30 were female and 45 were male. A representative sample of 63 primary school head teachers were selected by random sampling using Krecjie and Morgans (1971) formula for sample size determination. This yielded a sample size of 25 female and 38 male head teachers giving a total of 63 respondents. Data was collected using a self-scoring questionnaire administered to the sampled respondents. The study issued 63 questionnaires of which 60 were returned; this was 95.2% of the target group and thus a good representation. Data analysis used descriptive statistics and the computer software SPSS aided in analysis. The findings were represented in form of frequency Tables and narrations.

RESULTS AND DISCUSSION

This section discusses the findings of the research which are presented in line with the objectives of the study. The aim of the study was to find out the provision of clean water and sanitary services by pupils in in Gichugu Constituency.

The first research objective of the study sought to find out access to safe drinking and school participation by pupils in public primary schools Gichugu Constituency, in Kenya. The respondents were provided with three items in a five point likert scale that sought to establish: access to safe drinking water and academic attainment, clean water and school absenteeism and access to piped water and disease prevalence among pupils.

The respondents were presented with an item which sought to find out if provision of safe drinking water improved academic performance of pupils. A summary of their responses is provided in Table 1.

Table 1: Provision of Safe Drinking Water and Academic Performance

Responses	Frequency	Percent
Strongly Agree	45	75.0%
Agree	14	23.3%
Do not know	0	0.0%
Disagree	1	1.7%
Strongly Disagree	0	0.0%
Total	60	100.0%

Analyzed data presented in Table 1 indicates that 45(75.0%) of the respondents strongly agreed that access to safe drinking water improved academic performance, this was followed by 14(23.3%) who agreed and 1(1.7%) who disagreed. These findings indicate that the respondents were of the opinion that academic improved in schools where pupils had access to safe drinking water. These findings concur with Aschalew, Charles, Amy and Tammo (2013) who pointed out that the spread of infections among pupils in schools is affected by quality of drinking water available and therefore availability of clean water is vital in decreasing infections among learners. This impressed the notion that learners without access to safe drinking water fell ill more frequently, lost tuition time when undergoing treatment and the healing process which translated to low academic performance. Consequently, in this study the observed inadequacy in provision of clean drinking water to pupils in primary schools could be a contributing factor to the pupils academic performance.



The respondents were presented with an item that sought to find out if lack of safe drinking water in primary schools resulted in school absenteeism among learners. Table 2 provides a summary of their responses.

Table 2: Does Lack of Safe Drinking Water results in Pupil Absenteeism

Responses	Frequency	Percent
Strongly Agree	22	36.7%
Agree	14	23.3%
Disagree	8	13.3%
Strongly Disagree	16	26.7%
Total	60	100.0%

Table 2 shows that 22(60.0%) of the respondents strongly agreed that absence of clean water led to an increase in absenteeism among pupils, 14(23.3%) agreed, 8(13.3%) disagreed and 16 (26.7%) strongly disagreed. These findings indicate that on average the respondents agreed that safe drinking water led to school nonattendance by pupils. The results concur with Al-Shammari, Khoja, El-Khwasky and Gad (2001) in the kingdom of Saudi Arabia which established that water storage was significantly associated with parasitic infections among learners who suffered from intestinal infections were unable to attend school regularly. This perhaps could have been among the variables that contributed to absenteeism among pupils in public primary schools in Gichugu Constituency.

The study further sought the respondents' opinion on access to piped water in public primary schools and prevalence of diseases among pupils. The respondents were expected to indicate the opinion to an item in a likert scale. Table 3 presents a summary of their responses.

Table 3. Lack of Access to Piped Water leads to high Prevalence Diseases among Pupils

Responses	Frequency	Percent
Strongly Agree	0	0.0%
Agree	46	76.7%
Disagree	0	0.0%
Strongly Disagree	14	23.3%
Total	60	100.0%

Table 3 reveals that 46(76.7%) lack of access to piped water in schools led to high prevalence diseases among pupils and 14(23.3%) strongly disagreed with the statement. The study concluded that on a general scale the respondents were of the opinion that absence of piped water led to occurrence of diseases among learners'. These findings concur with a study by Ezeagwuna, Okwelogu and Ogbuagu (2009) in Nigeria and Redhouse (2004) who established that absence of clean water through pipes led to incidents of diseases related to contaminated water, for instance typhoid, bilhazia, cholera among others.

The second objective of the study wanted to assess the provision of sanitation facilities and school participation by pupils in public primary schools Gichugu Constituency. To address this objective, the respondents were provided with two items that sought information on incidences of diseases and absenteeism among pupils in relation to sanitation facilities.



The respondents were presented with a dichotomous (Yes/No) item. The respondents were asked to indicate their opinion on the statement that sanitation amenities influenced incidences of diseases among pupils in primary schools. Table 4 summarized the responses.

Table 4: Sanitation Conveniences and Incidence of Diseases

Responses	Frequency	Percent
Yes	38	63.33%
No	22	36.67%
Total	60	100.00%

Table 4 revealed that 38 (63.33%) of the respondents agreed that sanitation amenities influenced primary school incidences of diseases among learners and 22(36.67%) disagreed. The researcher noted that schools with dilapidated sanitation amenities had very low numbers of learners compared to schools with modern and well maintained sanitation amenities. The UNICEF (2006) report affirms this position and argues that provision of improved sanitation amenities in schools is the surest way that safeguards high standards of health among learners are maintained. WHO/UNICEF (2015) reiterated that Sub-Saharan Africa was among the regions that still faced challenges in regard to provision of better sanitation in primary schools, which resulted to high incidences of diseases among learners. A related study in Nigeria by Ezeagwuna, Okwelogu and Ogbuagu (2009) found out that in primary school with inadequate provision of sanitary facilities pupils had high incidence of abdominal infections. Infrastructure investments to improve water quality and sanitation can have direct effects on the health of pupils, thus, special attention need to be paid towards provision of clean water supply to meet health needs of pupils in public primary schools in rural communities.

The respondents were asked if sanitation amenities contributed to absenteeism among pupils in schools. Table 5 summarizes their responses.

Table 5: Poor Sanitary Facilities results in Absenteeism

Responses	Frequency	Percent
Strongly Agree	32	53.3%
Agree	26	43.3%
Disagree	2	3.4%
Strongly Disagree	0	0.0%
Total	60	100.0%

Table 5 indicates that 32(96.6%) of the respondents strongly agreed that poor sanitation led to greater absenteeism among pupils. Similarly, the analysis also revealed that 26(43.3%) agreed and 2(3.4%) disagreed. The research established that unhygienic facilities in schools led to increased absenteeism among pupils. The results concur with UNICEF (2010) that access to sanitation amenities increased student enrollment and participation in educational activities. School absenteeism is a critical national problem that puts pupils at risk for falling behind academically, dropping out of school and serious long-term health, employment and financial consequences. There is a growing movement among government and non-governmental agencies to address the underlying causes of pupil absenteeism because absenteeism, its adverse impact on health and life outcomes, and potential solutions. In this



regard there is a serious problem that has been largely overlooked, but there is a growing movement to address the underlying health, causes.

CONCLUSION

On the basis of these findings the research concluded that primary school children in Gichugu Constituency were provided with clean water to their pupils. The study also established that academic participation improved in schools where pupils could access clean water. Additionally, it was observed that absence of clean drinking water led to increased absenteeism. Most importantly, poor sanitation amenities were found to lead to occurrence of infections which affected pupils' participation to education. It was also concluded that illnesses reduced school attendance among pupils. Sanitation facilities led to prevalence of diseases in schools.

RECOMMENDATIONS

The study makes the ensuing recommendations. The Ministry of Education, National and County Governments should make sure that all public primary schools in Gichugu Constituency have clean water supply to reduce incidence of diseases among learners. This is because access to safe water and sanitation, have been shown to provide significant leverage for existing investments in health and education which are central in unlocking economic growth and productivity. All the stakeholders in education ought to stress on the provision of adequate sanitation facilities in schools.

REFERENCES

- Al-Shammari, S., Khoja, T., El-Khwasky, F., & Gad, A. (2001). Intestinal parasitic diseases in Riyadh, Saudi Arabia: prevalence, socio-demographic and environmental associates. *Tropical Medicine International Health*, 6: 184-189.
- Aschalew, D. T., Charles, F. N., Amy S. C. & Tammo, S. S. (2013). Determinants of household participation in the management of rural water supply systems: A case from Ethiopia. *Water Policy*, 15 (6); 985-1000.
- Bado, A. R., Susuman A. S., & Nebie, E. I. (2016). Trends and risk factors for childhood diarrhea in sub-Saharan countries (1990-2013): assessing the neighborhood inequalities. www.tandfonline.com/doi/full/10.3402/gha.v9.30166
- Benta, A. & Simatwa, E. (2010). Opportunities and challenges for public primary school head teachers in the implementation of Free Primary Education in Kisumu Municipality, Kenya: An Analytical Assessment. *Educational Research and Review*, 5, 484-491
- Ezeagwuna, D. A., Okwelogu, I. S., Ekejindu, I. M., & Ogbuagu, C. (2009). The Prevalence and socio-economic factors of intestinal helminth infection among primary school pupils in Ozubulu, Anambra state, Nigeria. *International Journal of Epidemiology*. 3;41-56.
- Greene, L. E., Freeman, M. C., Akoko, D., Saboori, S., Moe, C., & Rheingans, R. (2012). Impact of a school-based hygiene promotion and sanitation intervention on pupil hand contamination in western Kenya: A 34 cluster randomized trial. *The American Journal of Tropical Medicine and Hygiene*, 87(3), 385-393.
- IRC. (2007). *Towards effective programming for WASH in schools: A manual on scaling up 65 programmes for WASH in Schools*. Delft: The Netherlands.
- Kirinyaga County Ministry of Health. (2015). Health at a Glance. www.healthpolicyproject.com/pubs/291/Kirinyaga%20County-FINAL.pdf
- Laura M, Federica B, David D. C, Lucia. E, Gioia C, Domenico, O. & Annunziata, G. (2012). Intestinal parasite infections in immigrant children in the city of rome, related risk factors and possible impact on nutritional status. *Parasites & Vectors*, 5:265.
- Jayachandran, N. (2018). Alma Ata Declaration: 40 years on, what has this public health initiative achieved? www.thenewsminute.com/article/alma-ata-declaration-40-years-what-has-public-health-initiative-achieved-88279.



- Mbula, S. Mulwa, A. & Kyalo, D. (2014). Access to improved sanitation: implication for sustainable implementation of hygiene practices secondary schools in Machakos County, Kenya. *European scientific journal* 10(1)151-168.
- Orodho, J. A. (2013). *Elements of education and social sciences research methods*. Maseno, Kenya: Kanezja publisher.
- Pinar, O., Ertug, S., Gultekin, B., Ozlem, O., & Beser, E. (2004). Intestinal parasites prevalence and related factors in school children, a western city sample -Turkey. *BMC Public Health*. 4(64), 2458-64
- Republic of Kenya (2005). Kenya Education Sector Support Programme 2005-2010. Nairobi: Ministry of Education, Science and Technology.
- Sahlin-Andersson, K. (2006). Corporate social responsibility. *Corp. Gov.* 6(5):595–608
- Sifuna, D. (2005). The Illusion of Universal Free Primary Education in Kenya. *Wajibu: A Journal of Social and Religious Concern*. http://africa.peacelink.org/wajibu/articles/art_6901.html
- UNESCO. (2005). *Global monitoring report: The quality imperative*. Paris: UNESCO.
- UNICEF. (2006). *Meeting the MDG drinking water and sanitation target, the urban and rural challenge of the decade*. Retrieved from: http://www.who.int/water_sanitation_health/monitoring/jmpfinal.pdf
- UNICEF. (2009). *Diarrhea: Why children are still dying, What can we do*. The United Nations Childrens Fund (UNICEF)/ World Health Organization (WHO).
- UNICEF. (2012). *Package for monitoring WASH in schools*. Available at ww.washinschools.org
- UNICEF/WHO. (2015). *Water, sanitation and hygiene standards for schools in low-cost settings*.
- UNSDG. (2015). *Sustainable development summit*. New York City: United Nations.
- Vikram, M., Juanita, H., Saeed, A., Ghazala, R. & Mohammad, A. B. (2008). Prevalence and Factors Associated with Intestinal Parasitic Infection among Children in an Urban Slum of Karachi. *PLoS ONE*, 3(11): 36-80.
- WHO & UNICEF. (2015). *Progress on sanitation and drinking water-update and MDG assessment*. Retrieved from:http://www.unicef.org/publications/files/Progress_on_Sanitation_and_Drinking_Water_2015_Update_.pdf
- WHO/UNICEF. (2018). *Joint monitoring program for water supply and sanitation*. <https://sustainabledevelopment.un.org/topics/waterandsanitation>.
- WHO. (2000). *Millenium Development Goals*. Switzerland: World Health Organization.
- World Bank. (2017). Millions around the world held back by poor sanitation and lack of access to clean water. Stockholm: World Bank
- World Bank. (2017). Millions around the world held back by poor sanitation and lack of access to clean water. Stockholm: World Bank.
- WSFSD. (2002). *Johannesburg world summit for sustainable development*. South Africa.
- Yieke, F. A. (2006). *Free Primary Education (FPE) in Kenya: Examining the benefits challenges and sustainability*. www.scientiasocialis.lt/pec/files/pdf/vol39/71-