Establishing the influence of School Infrastructure on Drug Abuse among Secondary School Students in Naivasha Sub-County, Nakuru County, Kenya

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Abstract
Drug abuse is a rampant problem in secondary schools and colleges in Kenya. High number of students are abusing drugs while in school. Some studies have indicated a correlation between drug abuse and school infrastructure. This study sought to investigate whether school infrastructure influenced secondary school students in Naivasha Sub County into drug abuse. The study employed a descriptive survey research design and was guided by Social cognitive theory by Albert Bandura and the Modified Social Stress Model by Rodes and Jason and as modified by World Health Organization/Programme on Substance Abuse (WHO/PSA). The target study population was 31,626 respondents comprising 63 deputy principals, 63 guidance and counselling teachers and 31,500 students. A sample of 20 percent was considered suitable for schools. Therefore, 13 schools were randomly sampled for the study. Sampling for students was based on Krejcie and Morgan (1990) matrix whereby 380 students (form 2 and 3) were sampled. Simple random sampling method was used to select student respondents. Teacher counsellors and deputy principals were purposefully selected from the 13 sampled schools. A total sample size of 406 respondents was obtained. Three questionnaires presented in Likert scale were used in the study targeting students, teacher counsellors and deputy principals. The questionnaires were checked and validated by expert psychologists and counsellors from the Laikipia University, Department of Psychology, Counselling and Education Foundations. In ensuring reliability, test re-test method was applied by administering the questionnaire in a pilot study in two schools in the neighbouring sub-county of Gilgil. Pearson's correlation coefficient (r) values of 0.753, 0.812 and 0.823 were obtained for students, Deputy Principals and teacher counsellors respectively; indicating a high positive correlation. Frequencies, percentages and means were computed by use of Statistical Package for Social Sciences (SPSS) version 24. The results revealed that school infrastructure influenced drug abuse among secondary school students in Naivasha sub-county. Based on the findings, the government, entrepreneurs and school administrators need to put up conducive infrastructure in schools because of its contribution in the reduction of drug abuse amongst students. However, research across Kenya would give a wider perspective on how school infrastructure influenced drug abuse in secondary schools.

Keywords: Drug abuse, influence, school infrastructure, school administrators, students

Introduction

Drug abuse is a problem in the 21st Century that is ruining the lives of millions of people. The past two decades have witnessed the use of illicit drugs and substances spread at an unprecedented rate penetrating every part of the globe. United Nations Office on Drugs and Crime (2014) reported an estimated 183,000 drug-related deaths worldwide in 2012. The report

estimated that about 243 million people (aged between 15 & 24 years) used illicit drugs at least once in the previous year and 39 million people suffered drug use disorders or entirely depended on drugs. In Kenya, drug abuse is one of the top problems confronting the nation, especially among the youth (Chesang, 2013). According to Chesang, incidences of drug abuse and related anti-social behaviour in recent years, have tremendously increased.

The Government of Kenya through the National Authority for the Campaign against Alcohol and Drug Abuse (NACADA) recognizes drug abuse as a major threat to the lives of citizens and realization of the national development dream (NACADA, 2017). Drug problem is rampant in secondary schools and colleges in Kenya where it has strangled students, reducing them to dummies and zombies at the age in life when they are energetic and most needed in the society. The problem is prevalent, real and serious in Kenya with more than 25 percent high school and university students reported as addicts (NACADA, 2017). The problem is reported to have taken root leading to high number of school drop outs, strikes and indiscipline cases.

Some researchers have alluded to a correlation between drug abuse and school infrastructure on secondary school students (Siddiqui & Pandey, 2003). A school is defined by factors like the physical area and the student population. A school's physical environment includes the school buildings and the surrounding grounds (Killeen et al., 2003). Since students spend the major part of their days in school, the school environment provides a standard against which young people test behaviour (NACADA, 2016).

According to research by Ulrich (2004), environmental factors such as cleanliness, lighting, ventilation, size, and location of the school affect how students learn and behave. Students spend a portion of their time in school moving from one place to another. There is potential for problems when such movement takes place in schools in which corridors, stairways, and entrances are poorly designed. There is also a challenge in monitoring students in schools characterized with remote places, unsafe and hidden stairways, vacant parking lots, and dense foliage around the school (Kumar et al., 2002). Such unsupervised spaces in and around school compound accord students the opportunity to be truant and to engage in problematic behaviours. Students are more likely to be truant and use cigarettes, marijuana, and alcohol in schools with a greater number of spaces where students can escape school management or adult supervision. Kumar et al. (2002) further argue that schools which are spacious enough in terms of size and student population to provide infrastructure for co-curricular activities such as sports, reduce boredom while idleness that may lead to drug use and other problematic behaviour.

Naivasha Sub County schools have not been excluded from the devastating impact of drug abuse (MoE, 2019). It is reported that one out of three cases of students suspended from schools in the sub county is due to drug abuse and related indiscipline cases (MoE, 2019). It is on this basis that the research was conducted to investigate whether school infrastructure influences drug abuse on secondary school students in the Naivasha sub-county.

Research Methodology

The study was conducted in the second term of the academic calendar of year 2021 and was guided by Albert Bandura's social cognitive theory (1986) which explains that students who get engaged in the behaviour of drugs abuse, have most likely learnt the behaviour from their environment. The study employed a descriptive survey research design and was carried out in secondary schools in Naivasha sub-county. The study targeted a total of 63 (38 Public and 25 Private) secondary schools with a total student population of 31,500 (MoE, 2019). The target sample population comprised 63 guidance and counselling teachers, 63 deputy principals and 31,500 students getting to a total of 31,626 respondents. Based on Mugenda and Mugenda (2003), a sample of 20 percent was considered suitable for schools. Therefore, a total of 13 schools were sampled.

Sampling for students was based on Krejcie and Morgan (1990) matrix in which 380 students (form 2 and 3) were sampled. Students in form two and three were selected in the study because they were considered to have acclimatized to the school environment and were not as busy as form four students who may have been busy in preparing for national examinations. Teacher counsellors and deputy principals were purposefully selected from the 13 sampled schools. Teacher Counsellors were selected due to their role in guidance and counselling of students while deputy principals were selected for the study because they are usually charged with student discipline in the Kenyan secondary school set up. Simple random sampling method was used to select student respondents. A total sample size of 406 respondents was obtained. Three questionnaires presented in Likert scale were used in the study targeting students, teacher counsellors and deputy principals. The questionnaires were presented to expert psychologists and counsellors of Laikipia University Department of Psychology, Counselling and Education Foundations for expert judgement and improvement of content validity. To ensure reliability of the study, test re-test method was applied by administering the same questionnaires in a pilot study.

The same questionnaires were administrated in a span of one week to 15 students, 4 deputy principals and 4 teacher counsellors under the same conditions in 2 schools in Gilgil Sub-County that neighbours Naivasha Sub County. That yielded two scores for the set of respondents and reliability coefficient was calculated using Pearson correlation co-efficient formulae (r) as guided by Fraenkel et al. (2012). Correlation coefficients (r) of 0.753, 0.812 and 0.823 were obtained for students, deputy principals and teacher counsellors' questionnaires respectively indicating a high positive correlation. Therefore, all the three instruments met the threshold of 0.7 and above confirming that they were reliable for use in the data collection process during the main study. Frequencies, percentages and means were computed by use of Statistical Package for Social Sciences (SPSS) version 24.

Results and Discussion

The study examined various variables generated by the questionnaires as per the objective. The findings are discussed in the various sections of this paper.

Demographic Characteristics of Student Respondents

The biographical data of student respondents in the study is captured in table 1. For the students who participated in the research, 51.8 percent were females while 48.2 percent were boys. The findings could be an indication that more girls than boys are enrolled in secondary schools in the sub county. Majority of the students (87.1%) were aged between 16 and 20 years. Form three students participated more in the study at 59.2 percent as opposed to form two students who were 40.7 percent. More mixed day schools were sampled at 44.7 percent as compared to boys boarding schools that were least sampled at 15.8 percent. Majority of the students sampled were Christians by faith at 97.9 percent and Muslims were a minority at 1.3 percent.

Table 1: Distribution of Student Respondents on Biographical Data

Variable	Frequency	Percentage
Gender:		
Male	183	48.2
Female	197	51.8
Total	**380**	**100.0**
Age:		
Less than 15 years	47	12.4
16-20 years	331	87.1
Above 20 years	2	0.5
Total	**380**	**100.0**
Class:		
Form 2	155	40.7
Form 3	225	59.2
Total	**380**	**100.0**
Category of School:		
Boys boarding	60	15.8
Girls boarding	87	22.9
Mixed day	170	44.7
Mixed boarding	63	16.6
Total	**380**	**100.0**
Religion:		
Christian	372	97.9
Muslim	5	1.3
Other	3	0.8
Total	**380**	**100.0**

When the students were asked on whether they have ever used any illicit drug or substance, 29.2 percent responded in the affirmative while 70.8 percent responded in the negative as captured in table 2. Kasundu et al. (2012) argued that demographic factors such as gender, age, occupation, religion, marital status and level of education influence the decision of an individual to indulge in drug abuse. Further, religion contributes to reduction in drug abuse by guiding behaviour and social interactions (Kasundu et al., 2012). However, some alternative faiths allow the use of drugs such as marijuana by its adherents for ritual reasons.

Table 2: Distribution of Student Respondents on Usage of Illicit Drugs or Substances

Response	Frequency	Percentage
Yes	111	29.2
No	269	70.8
Total	**380**	**100.0**

Majority of the students (above 70%) indicated they had not used drugs, while 29 percent had used drugs. The number of students who had used drugs represent a third of students which is a significant number, considering the drugs have a negative influence on their lives. When the students who answered in the affirmative of having used illicit drugs were asked on what

age they started, 8.2 percent of the ones who responded indicated to have started using drugs at 15 years as captured in table 3. However, some students (3.2%) started using illicit drugs as early as 12 years as revealed in the study. Age 15 years is significant since most students have just joined secondary school and, in most cases, they are usually in form two. The finding is consistent with a report by NACADA (2020) which revealed that drug and substance abuse amongst learners may begin at an earlier age even before joining secondary school.

Table 3: Distribution of Student Respondents on The Age During Which They Started Using Illicit Drugs

Student Age	Frequency	Percentage
12	12	3.2
13	10	2.6
14	13	3.2
15	31	8.2
16	22	5.8
17	19	5.0
18	1	0.3
No response	272	71.6
Total	**380**	**100.0**

When the students who indicated having used illicit drugs were asked to mention which ones they had used, 17.6 percent mentioned alcohol while 3.7 percent, 1.6 percent and 1.3 percent indicated mandrax, cigarettes and marijuana respectively as shown in table 4. The findings are in line with Kaguthi (2004) who noted that alcohol is the most frequently abused drug. Further, a section of students abused mandrax which is considered a hard drug. The finding could be an indication of a trend that hard drugs had found their way into secondary schools in the sub-county. A significant number of students (272, translating to 71.6 percentage) never responded to the question probably due to the fear of victimization. This was so despite the assurance given before the survey on non-victimization.

Table 4: Distribution of Student Respondents on The Type of Drug Abused

Type of drug/substance	Frequency	Percentage
No response	288	75.8
Alcohol	67	17.6
Mandrax	14	3.7
Cigarettes	6	1.6
Marijuana	5	1.3
Total	**380**	**100.0**

Student respondents were also asked to name which illicit drug they were able to identity as per table 5. Majority of the students (84.5%) indicated alcohol; 73.4 percent cigarettes; 31.3 percent marijuana; 18.2 percent cocaine; 18.4 percent heroine; and 0.8 percent shisha. The responses are consistent with NACADA (2016) that the most commonly abused drugs among the youths aged 15yrs-18yrs are alcohol, tobacco, marijuana, cocaine and other inhalants.

Table 5: Distribution of Student Respondents on Ability to Identify Specific Drugs and Substances

Type of Drug/Substance	Frequency	Percentage
Alcohol	321	84.5
Cigarettes	279	73.4
Marijuana	119	31.3
Mandrax	72	18.9
Heroine	70	18.4
Cocaine	69	18.2
Miraa/Khat	22	5.8
Kuber/Ndovu	6	1.6
Shisha	3	0.8

Students at 15.8 percent acknowledged having joined drug abuse through friends. Those who joined due to peer pressure were 7.9 percent. Others (1.6%) indicated that they joined drug abuse due to factors like depression, while 1.6 percent did it for experimentation. Family factors also contributed to 0.8 percent of the surveyed students having joined drugs and substance abuse as captured in table 6. Peer pressure is rated as a key factor leading adolescents to drug abuse (UNODC, 2014).

Table 6: Distribution of Student Respondents on Factors That Lead to Drug Abuse

Type of Drug/Substance	Frequency	Percentage
No response	270	71.1
Friends	60	15.8
Peer pressure	30	7.9
Parties/Weddings	15	3.9
Depression	6	1.6
Experimentation	6	1.6
Family	3	0.8

When the surveyed students were asked whether they had friends who abused drugs, 51.1 percent responded in the affirmative as shown in table 7. This finding could also imply that most students were lured into use of illicit drugs by friends. Therefore, it shows that when students socialize and move away from the protection of their parents, they become easy targets of their friends.

Table 7: Distribution of Student Respondents on Whether they Had Friends Who Take Illicit Drugs

Response	Frequency	Percentage
Yes	194	51.1
No	132	34.7
No response on Yes or No	54	14.2
Total	**380**	**100.0**

Demographic Characteristic of Teacher Counsellors

The biographical data of teacher counsellors in the study is captured in table 8. Majority of the counsellors surveyed (76.9%) in the study were females while 23.1 percent were males. Majority of the counsellors (46.2%) were also above 45 years Most counsellors (46.2%) had

counselling experience of between 1 and 5 years. This finding implies that majority of teacher counsellors in Naivasha county are not so much experienced.

Table 8: Distribution of Teacher Counsellor Respondents on Biographical Data

Variable	Frequency	Percentage
Gender:		
Male	3	23.1
Female	10	76.9
Total	**13**	**100.0**
Age:		
26-35 years	4	30.8
36-45 years	3	23.1
Above 45 years	6	46.2
Total	**13**	**100.0**
Guidance and Counselling Experience:		
1-5years	6	46.2
6-10 years	3	23.1
11-15 years	2	15.4
Over 20 years	2	15.4
Total	**13**	**100.0**

Demographic Characteristic of Deputy Principals

The biographical data of the surveyed deputy principals is captured in table 9. Majority of the deputy principals (53.8%) were females while males deputy principles were 46.2 percent. The deputy principals who were aged above 45 years were 6.6 percent. However, majority of them at 46.2 percent had administrative experience of less than 5 years. Most of the deputy principals surveyed were from girls boarding schools with a student establishment of over 1000 students and staff establishment of between 16 and 25 teachers. The findings point out that most deputy principals surveyed had long teaching experience but low experience at management level.

Table 9: Distribution of Deputy Principals on Biographical Data

Variable	Frequency	Percentage
Gender:		
Male	6	46.2
Female	7	53.8
Total	**13**	**100.0**
Age:		
26-35 years		
36-45 years	3	23.1
Above 45 years	2	15.4
Total	8	61.5
	13	**100.0**
Administrative Experience:		
1-5years		
6-10 years	6	46.2
11-15 years	4	30.8
Over 20 years	2	15.4
Total	1	7.7
	13	**100.0**
Category of School:		
Boys boarding		
Girls boarding	3	23.1
Mixed day	7	58.8
Mixed boarding	2	15.4
Total	1	7.7
	13	**100.0**
Curriculum based Establishment-Students:		
Below 300		
301 -500	2	15.4
501-700	4	30.8
701-1000	1	7.7
Above 1001	2	15.4
Total	4	30.8
	13	**100.0**
Curriculum based Establishment-Teachers:		
Below 15		
16-25	4	30.8
26-35	4	30.8
35-45	2	15.4
Above 46	2	15.4
Total	1	7.7
	13	**100.0**

Influence of School Infrastructure on Drug Abuse

Table 10 shows that 36.1 percent the surveyed students strongly agreed that buildings and hidden places in a school contributes to increased drug abuse among students. Various researchers have suggested that several environmental factors such as cleanliness, lighting, ventilation, size, and location of the school affect how students learn and behave in school (Siddiqui & Pandey, 2003; Ulrich, 2004). Of the students under study, 27.4 percent of them strongly agreed while 27.6 percent generally agreed that low student population in a school contributes to reduced cases of drug abuse among students. 35.8 percent of the students also

strongly disagreed that schools with large compounds have few cases of drugs abuse among them. The findings are in line with the findings of Ulrich (2004) which identified overcrowding, in terms of square footage per child in the classroom, as one factor responsible for the decrease in reading scores for girls and increased behavioural problems among boys.

Ulrich (2004) explains further in his research in the field of design and environmental analysis that the design and quality of the setting of schools (primary environments for children and adolescents) are particularly critical and have a direct effect on a child's self-identity, self-esteem, and academic performance. Of the fact that schools with a variety of extracurricular facilities are likely to have very few cases of drug abuse, 29.2 percent strongly agreed while 29.9 percent generally agreed to this. Such infrastructural facilities enhance co-curricular activities such as sports thus reducing boredom and idleness that may lead to drug use and other problematic behaviour as argued by Kumar et al. (2002).

Table 10: Distributions of Students' Responses on Influence of School Infrastructure on Drug Abuse

	Percentages and Frequencies						
	SD	**D**	**U**	**A**	**SA**	**Mean**	**Std. Dev.**
Buildings and hidden places in school contributes to increased drug abuse among students	14.2% 54	11.6% 44	9.2% 35	28.9% 110	36.1% 137	3.61	1.431
Low student population in a school contributes to reduced cases of drug abuse among students	21.8% 83	13.7% 52	9.5% 36	27.6% 105	27.4% 104	3.25	1.525
Schools with large compounds have few cases of drugs abuse among students	35.8% 136	23.7% 90	27.1% 103	8.4% 32	5.0% 19	2.23	1.169
Schools with a variety of extra-curricular facilities are likely to have very few cases of drug abuse	18.4% 70	13.9% 53	15.5% 59	22.9% 87	29.2% 111	3.31	1.479

In table 11, it is observed that 46.2 percent (agreed) and 38.8 percent (strongly agreed) of the deputy principals generally agreed that schools with many buildings and hidden places influenced drug abuse among students. The findings are in tandem with other study findings by Kumar et al. (2002) which indicated that there is potential for problems to arise in schools in which corridors, stairways, and entrances are poorly designed. Kumar et al. (2002) further note that there is also a challenge in monitoring students in schools characterized with remote places, unsafe and hidden stairwells, vacant parking lots, and dense foliage around the school. Such unsupervised spaces in and around school compound afford students the opportunity to be truant and to engage in problem behaviours. 35.8 percent of deputy principals were undecided with the view that schools which had low student population had reduced cases of drug abuse.

Population in this case did not seem to be an issue if other physical infrastructure like buildings and the surrounding grounds were well designed and managed to ensure students did

not escape school management or adult supervision. 46.2 percent responses disagreed that schools which were more spacious had very few cases of drug abuse. This is in agreement with NACADA (2016) that school environment provides a standard against which young people test behaviour. 61.5 percent of them agreed that schools with a variety of extracurricular facilities were likely to have very few cases of drug abuse. This finding agrees with Kumar et al. (2002) who argued that co-curricular activities such as sports reduce boredom while idleness that may lead to drug use and other problematic behaviour.

Table 11: Distributions of Deputy Principals' Responses on The Influence of School Infrastructure on Drug Abuse

	Percentages and Frequencies						
	SD	**D**	**U**	**A**	**SA**	**Mean**	**Std. Dev.**
Schools with many buildings and hidden places influences drug abuse among students	7.7% 1	7.7% 1	7.7% 1	46.2% 6	30.8% 4	3.85	1.214
The size of school compound influences drug abuse among students	30.8% 4	0.0% 0	7.7% 1	46.2% 6	15.4% 2	3.15	1.573
Schools with low student population have reduced cases of drug abuse	15.4% 2	15.4% 2	38.5% 5	30.8% 4	0.0% 0	2.85	1.068
Schools which are more spacious have very few cases of drug abuse	30.8 % 4	46.2% 6	15.4% 2	7.7% 1	0.0% 0		0.913
Schools with a variety of extra-curricular facilities are likely to have very few cases of drug abuse	7.7 % 1	15.4% 2	0.0% 0	61.5% 8	15.4% 2		1.193

From the responses shown in table 12, it is noted that 46.2 percent of the guidance and counselling teachers agreed that buildings and hidden places in a school contributes to increased drug abuse among students. 53.8 percent of teacher counsellors also agreed that schools with low student population have reduced cases of drug abuse. 30.8 percent of the teacher counsellors strongly disagreed that schools with large compounds had very few cases of drug abuse among students. In the same vein, 30.8 percent of the teacher counsellors were undecided of whether the size of the school compound had any influence on drug abuse among students. 76.9 percent agreed that schools with a variety of extra-curricular facilities are likely to have very few cases of drug abuse among students. This is in line with other research findings which argue that students tend to spend most of their leisure time in extra-curricular activities have reduced time to focus on drug abuse and other problematic behaviour.

Table 12: Distributions of Guidance and Counselling Teachers' Responses on Influence of School Infrastructure on Drug Abuse

	Percentages and Frequencies						
	SD	**D**	**U**	**A**	**SA**	**Mean**	
Buildings and hidden places in a school contributes to increased drug abuse among students	0.0% 0	30.8% 4	23.1% 3	46.2% 6	0.0% 0	3.15	
Schools with low student population have reduced cases of drug abuse among students	0.0% 0	30.8% 4	15.4% 2	53.8% 7	0.0% 0	3.23	0.927
Schools with large compounds have very few cases of drug abuse among students	30.8 % 4	23.1% 3	30.8% 4	15.4% 2	0.0% 0	2.31	1.109
Schools with a variety of extra-curricular facilities are likely to have very few cases of drug abuse among students	7.7 % 1	7.7% 1	7.7% 1	76.9% 10	0.0% 0	3.54	0.967

Conclusions and Recommendations

The aim of the study was to find out whether school infrastructure influences drug abuse among secondary school students in Naivasha sub-county. Majority respondents concurred that various aspects of school infrastructure influenced some students into drug abuse. Of the surveyed students, 65 percent agreed that buildings and hidden places in schools contributed to increased cases of drug abuse among students while 55 percent concurred that low student population in a school contributed to reduced cases of drug abuse. Students at 59.1 percent also agreed that schools with a variety of extracurricular facilities are likely to have very few cases of drug abuse. Deputy Principals at 85 percent agreed that schools with many buildings and hidden places influenced students into drug abuse while 61.6 percent concurred that the size of school compound influenced students into drug abuse. Deputy Principals at 76.9 percent also concurred that schools with a variety of extra-curricular facilities were likely to have fewer cases of drug abuse. For the surveyed Guidance and Counselling teachers, 46.2 percent agreed that buildings and hidden places in a school contributes to increased drug abuse among students while 53.8 percent concurred that schools with low student population have reduced cases of drug abuse. Further, 76.9 percent of the Guidance and Counselling teachers concurred that schools with a variety of extra-curricular facilities were likely to have fewer cases of drug abuse among students.

The study established and concluded that school infrastructure influenced drug abuse among secondary school students in Naivasha Sub County. Based on the findings, the government, school entrepreneurs and administrators need to focus on putting up conducive infrastructure in schools because of its role in the reduction of drug abuse among students. However, more research in the same area across the country is recommended to give a wider perspective on how school infrastructure contributes to drug abuse among students in secondary schools.

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