# Socio-Economic and Health Consequences of Drugs and Substance Use in Gachie, A Peri-Urban Town on the Outskirts of Nairobi

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## Abstract

Drug and substance abuse is a major socio-economic and health problem to the drug users, family and society and is reported to be on a steady global rise. In Kenya, drug abuse is a major societal problem especially in many cosmopolitan cities such as Nairobi and Mombasa and the surrounding immediate environs. The objective of this study was to evaluate the types of drugs, the socio-economic and health consequences of drug abuse among the inhabitants of Gachie Sub-Location, Kiambu County a town within the Nairobi suburbs. A snowballing sampling method was used to recruit a total of 246 study participants aged between 15-65years recruited into the study after consenting and meeting drug and substance use and dependence clinical evaluation according to UNCOPE criteria. Data on the type of drugs abused, socio-economic and health implications of drug use on both drug abusers and the community was captured using a structured questionnaire and the resulting data analysed using SPSS version 21. Over-the counter prescription drugs including, benzodiazepine, Cozepam ("ma-cc"), rohypnol ("ma-blue"), and benzhexol ("ma-white") as well as the traditional heroine were the major abused drugs reported in the study. Approximately 85% of the sampled drug abusers were men abusing mainly the licit over- the counter prescription drugs and heroine as a result of their easy affordability and accessibility. Failed marriages, conflictual family and communal relationships, unemployment, life of destitution and poverty were the main socioeconomic consequences of drug abuse reported in the study, corroborating reports of some previous studies. Participants's self-reported feeling of hyperactiveness and euphoria was the major health consequence repoted. This study thus indicates that drug use is slowly creeping into rural areas in the vicinity of major towns with prescription over the counter drugs taking a centre stage than the traditional hard drugs due to the associated low costs, availability and accessibility and can result in myriad socio-economic consequences in the society. This data provides an insight of the spread of drugs from the traditional cities to the surrounding town environments as these areas provide a safe haven for drug peddlers and thus should be of great focus by drug law enforcers as they strategize and seek to curb drug abuse problem. Future similar studies involving larger area are recommended to acquire more dynamics of this problem.

**Keywords:** Drug abuse, relationships, Socio-economic, Substance abuse, Poverty

## Introduction

Drug and substance abuse is a significant public socio-economic and health concern with almost a

quarter billion of the global population especially the youths reported to be under the influence of alcohol, licit prescription and illicit drugs (Maithya, 2009). Africa is among the leading continents in abuse of psychoactive substances (Odejide, 2006). Substance use generally confers an undesirable bearing on community well-being and social growth and often results to dependency syndrome or addictive behaviour on individual abusers (Jeannin, *et al.,* 2013). The major psychoactive substances currently abused worldwide are the, illicit, and licit prescribed psychoactive medications (Odejide, 2006). Alcohol, tobacco, khat are some of the licit and controlled drugs, while marijuana, hashish, cocaine, opium, inhalants, hallucinogens, heroin are the prohibited drugs (Kassa *et al.,* 2014). Besides, benzodiazepines, opioid analgesics, sedatives, tranquilizers and stimulants are some of the common emerging and abused prescription drugs (Kassa *et al.,* 2014). Sub-Saharan Africa is reported to lead in opiate use with Kenya leading in heroin use in the East African region (Beckerleg *et al.,* 2005; as well as other substances including alcohol tobacco, cannabis and khat. Drug abuse is one of the current top problems confronting country especially among the youth. Incidences of drug and alcohol abuse and related anti-social behaviour have tremendously increased in recent years (Chesang, 2013). The main drug abuse hotspots in Kenya include major cosmopolitan urban cities such as Mombasa and Nairobi although phenomenal rise in drug and substance use has recently been reported in some smaller coastal towns such as Malindi and Lamu and some inland towns such as Nakuru, Kisumu and Kiambu (Gathu, *et al.,* 2013). Several societal and environmental factors such as increased youth population, affluence, and illicit drug trafficking and ready market for the drugs are major contributing factors to the tremendous increase in drug and substance abuse in Kenya. Although, conventional discourses treat drug abuse as an individual problem drug and substance abuse also greatly affect the family as well as the communal socio-economic and wellbeing (Manning *et al.,* 2013). For example, while substance abuse may affect individual's mental and physical functions, drug abuse can also confer major challenges to the criminal justice

and health systems as well as the socio-economic aspects at the individual's, family, community and societal levels (Manning *et al.,* 2013). Poverty as demonstrated by among others, lack of basic essential commodities such as food, shelter, clothing and school fees are some of the major economic challenges previously associated with drug abuse (Johnston *et al.,* 2014). Thus, all these highlights the negative consequences of drug and substance abuse as a major global public health and socio-economic concern. Although, previous studies on drug and substance abuse problems have been extensively carried out in Kenya, most have been confined to major urban towns, with the magnitude and the resulting social-economic and health consequences being confirmed in peri-urban outfits otherwise considered as fertile grounds for drug and substance abuse being limited (Gathu *et al.,* 2013). The peri-urban villages are currently considered as major drug abuse hotspots due to population naivety to drugs, easy culpability due to poverty and the existing gaps in criminal justice system (Gathu *et al.,* 2013). Therefore, this paper provides an analysis of the magnitude of the health and socio-economic consequences, of drug abuse in a small peri-urban village in Kiambu on the outskirt of Nairobi.. Kiambu county and more specifically Gachie town has been reported to host many drug abusers (Matimu, 2010). The information obtained from this study will thus provide important data to community service provider, practitioners and policy makers.

## Methodology

### Study area, design and population

A cross-sectional study targeting persons of both gender aged between 15-65 years who confirmed to be drug users was carried out in Gachie, a peri-urban town of Nairobi in Kiambu County. Gachie town, lies 15km north of Nairobi and is bordered on the north by Karura, north east by Mahindi, east by Kagongo and on the west by Gathiga sub-location of Kiambu county. The objective of the study was to evaluate the types of drugs and determine the socio-economic and health consequences of drug abuse by the inhabitants of Gachie town. The study participants were inhabitants of the area as per their national

identification card documents, and reported to have lived in the area for at least three months and abused drugs and substances for at least one month preceding the study. First acquaintances to the ten initial and potential drug abusers in the community were tracked by the help of healthcare workers in Kihara Sub-county, a level-4 hospital. A purposeful respondent-driven, snowballing sampling method was then used to recruit other and similar study participants using the initial ten recruits. A total of 246 participants determined using Fischer's formula (Fisher, *et al.,* 1998) were thus finally recruited into the study. Excluded from the study were non-consenting individuals, those who failed the drug and substance use and dependence clinical evaluation criteria - UNCOPE (Hoffmann *et al.,* 2003) and those who showed obvious signs of compromised intellectual capability that could interfere with the understanding of the questionnaire. All the participants were appraised of their rights and all questions raised by the prospective participants about the study were explained. Prior to the final enrolment into the study, each recruited participant was subjected to drug and substance use and dependence clinical assessments based on UNCOPE criteria to ascertain their degree of drug and substance indulgence with the data obtained being scored on a scale of 2 or more to indicate any abuse OR dependence, Score of 4 or more to indicate dependence.

## Questionnaire

The questionnaire interviews were conducted in Kihara -Subcounty level 4 hospital a public utility facility which is in close proximity and caters for the immediate health needs of the surrounding community. Following an informed consent, each participant completed a questionnaire that had four main sections with semi-structured questions which included demographic information, types of drugs and substances abused, the socio-economic and health consequences of drug use. The questionnaire was interpreted into Kiswahili by a Kiswahili language expert prior to its administration to lessen translational impartiality. In order to test for reliability and validation of the questionnaire tool, the questionnaire was pretested in a pilot study in Rongai an area with a similar population structure as the study area. The collected questionnaires were checked for accuracy and relevancy of the obtained data and categories of responses were identified and classified based on research questions and objectives while the socio-economic and health variables measured included sex, age, individual income and schooling level among many others.

## Ethical approval

Ethical approval and research permit for this study were obtained from Ethics Review Committee of Mount Kenya University and the National Commission for Science, Technology & Innovation (NACOSTI) respectively. Drug and substances abusers who reported having abused drugs for at least one month prior to the study and who voluntarily consented and passed the clinical valuations tests were allowed to participate in the study. Each participant was kept anonymous while the information obtained was kept in strict confidence. All study participants benefitted from free well-being lessons on the individual drug abuse corrective and fitness measures, consequences of drug abuse and how to lead a more fruitful life for individual growth. The most severe cases were referred to Mathari mental hospital, a public rehabilitation facility for specialised management and rehabilitation.

## Data analysis

We used Braun and Clarke's Thematic Analysis method (2006) to analyse the results of the questionnaire data as guided by the main themes initially recognized in the questionnaire. Similar participant responses were selected and organized according to their covert significance, resemblance and variance while the responses that best exemplified the acknowledged themes were grouped together. Structured questions were analyzed thematically based on the study objectives with the qualitative data being subjected to descriptive statistics whereas quantitative data involving percentages and frequencies were transcribed, entered into Microsoft excel datasheet and analysed using Statistical Package for the Social Sciences (SPSS-Version 21). Chi-square test was used to determine the relationships between independent and

dependent variables and the results considered significant at *p-value* ≤ 0.05 (p, ≤0.05). Finally, the association between categorical variables were determined using the Pearson Correlation coefficient, (PCC).

## Results

### Demographic characteristics of the study participants

A total of 246 drug and substance abuse participants were recruited in the study with males comprising the majority (85%). The youth and the middle-aged adults aged between 24-41 years contributed the highest percentage (71 %) of drug users, while the rest 29% were either in a much younger age bracket or above 42 years old. Although almost all participants (94%) had some form of formal education, (65%) had not acquired post primary level education with only few (35%) having gone beyond the lowest formal schooling level and barely (3%) having attained tertiary level education. Socio-economically, while only 28% of the drug addicts were engaged in some form of income generating activities such as employment or business, majority (72%) of the participants were either students or unemployed.  For sustenance of drug dependence habits, 69 % of the participants engaged in activities including menial work and businesses while 31% supplemented their income with some non-conventional means of revenue generation such as stealing, prostitution, selling of drugs and misappropriation of school fees for student participants.  Most of the participants (78%) who abused drugs were found to be in a single marriage union, having been separated, divorced, widowed or by choice as compared to few (22%) who were in satble marital unions. (Table 1.1).

**Table 1.1:** Socio-demographic characteristics and economic activities of the study participants (n=246)

| Socio-demographic characteristics | Occurrence, n | Proportion (%) |
|---|---|---|
| **Age(years)** | | |
| 15-23 | 45 | 18.3 |
| 24-32 | 94 | 38.2 |
| 33-41 | 81 | 32.9 |
| >42 | 26 | 10.5 |
| **Gender** | | |
| Male | 209 | 85.0 |
| Female | 37 | 15.0 |
| **Marital status** | | |
| Married | 54 | 22.0 |
| Single | 99 | 40.2 |
| Separated | 53 | 21.5 |
| Divorced | 36 | 14.6 |
| Widowed | 4 | 1.6 |
| **Education level** | | |
| Tertiary | 7 | 2.8 |
| Secondary | 79 | 32.1 |
| Primary | 154 | 62.6 |
| None | 6 | 2.4 |
| **Employment status** | | |
| On employment | 24 | 9.8 |
| On business | 45 | 18.3 |
| Not employed | 177 | 72 |
| **Source of income** | | |
| Menial jobs | 113 | 45.9 |
| Stealing | 74 | 31 |
| Business | 51 | 20.7 |
| Salaried | 8 | 3.3 |
| TOTAL | 246 | 100 |

Presented are the number (n) and proportion (%) of participants in the study.

## Types of drugs and substances abused by the study participants

Few illegal and some legal prescription drugs were abused by the study participants. Heroin ("kete") and cocaine ("cocoa") were the two illegal drugs reportedly abused by the study participants. Whereas, 40 % of the participants abused heroin, a paltry 0.4% abused cocaine. Besides, drugs including benzodiazepine, Cozepam ("ma-cc"), rohypnol ("ma-blue"), and benzhexol ("ma-white") a tremor and rigidity controller drug were the three main legal prescription drugs extensively abused by the study participants. Cozepam was abused by 18%, benzhexol by 13% while rohypnol was abused by 8 % of the participants. Other drugs including *Cannabis sativa* ("bhang") and Khat, ("miraa") an herb grown widely especially in the eastern part of Kenya was used by 12% and 4% respectively. Inhalants including wood glue and jet fuel were sniffed by 2 % and 1 % respectively of the participants, especially by street children and teenagers. Most of these drugs were used either singularly or in combination and were disguised using non-conventional annotation to avoid scrutiny from unsuspecting public and the law enforcers.

## Drug abuse and the socio-economic consequences

In this study, many participants, reported conflictual family relationships (42%), failed marriages (32 %), communal isolation or social marginalisation (26 %) as a result of drug and substance use. An association existed between age of the participants and the drug abuse and some of the social consequences of drug abuse such as adverse family relationships, poor marital unions and poor education backgrounds. Many of the youth and middle-aged participants with less than thirty years of age reported to experience adverse family relationships while those above thirty years had unsustainable matrimonies (PCC, $x^2 = 22.294$, $df = 2$, $p = 0.0001$) as was the majority of those who lived in singlehood living arrangement including the widowed, divorced or separated drug abusers. Besides, all drug abusers whether single or married had significant adverse family relationships (PCC, $x^2 = 68.986$, $df = 4$, $p = 0.0001$) which was entirely blamed on drug abuse. Besides, the majority of participants with higher educational backgrounds of at least secondary level and above had stable marriages compared to those of lower levels who experienced both unstable marriages and had conflictual family relationships (PCC, $x^2 = 6.404$, $df = 2$, $p = 0.041$). Nevertheless, there was no significant association between gender, occupation or individual's revenue with the adverse social consequences of drug abuse. (Table 1.2).

**Table 1.2:** Associations between demographic characteristics and social consequences of drug abuse in the study participants

| Demographic characteristics | Unproductive marriages No.(%) | Societal rejection No.(%) | Bad family relationships No.(%) | $x^2$ | Df | p. |
|---|---|---|---|---|---|---|
| **Age:** <br> **<30 years** <br><br> **>30 years** | 28(35) <br><br> 51(65) | 39(61) <br><br> 25(39) | 72(70) <br><br> 31(30) | 22.29[a] | 2 | 0.0001 |
| **Gender:** <br> **Female** <br><br> **Male** | 14(18) <br><br> 65(82) | 9(14) <br><br> 55(86) | 14(14) <br><br> 89(85) | 0.66[a] | 2 | 0.718 |
| **Marital status:** <br> **Not Married** <br> **Single** <br> **Married** | 56(71) <br> 5(6) <br> 18(23) | 18(28) <br> 32(50) <br> 14(22) | 19(18) <br> 62(60) <br> 22(21) | 68.99[a] | 4 | 0.0001 |
| **Education:** <br> **≤Primary** <br><br> **≥Secondary** | 60(76) <br><br> 19(24) | 40(63) <br><br> 24(38) | 60(58) <br><br> 43(42) | 6.40[a] | 2 | 0.041 |
| **Occupation:** <br> **Unstable[b]** <br><br> **Stable[c]** | 51(65) <br><br> 28(35) | 49(77) <br><br> 15(23) | 77(75) <br><br> 26(25) | 3.22[a] | 2 | 0.200 |
| **Income:** <br> **Informal[d]** <br> **Business** <br> **Formal[e]** | 26(33) <br> 13(17) <br> 40(51) | 20(31) <br> 7(11) <br> 37(58) | 26(25) <br> 21(20) <br> 56(54) | 3.47[a] | 4 | 0.482 |

Demographic characteristics with superscript letters are used to define participants in each category: Unstable[b] occupation-unemployed, student; Stable[c] occupation-business, employed, peddlers; Informal[d] income-prostitution, drug peddling, selling of personal properties, stealing; Formal[e] income-salary, wage, student, menial work

Lack of basic life support essentials was the major adverse economic consequence reported with more than half (57%) of the participants reporting to live without basic life amenities while 29% were perpetually indebted. Job loss was a consequence suffered by 12% as a result of job dismissals due to absenteeism, violence at work place or working under the influence of drug and substances. A smaller proportion (2%) of the participants reported to engage themselves as street drug peddlers to economically sustain their living.

A significant negative relationship existed between the level of participants' educational and the economic status. Lack of basic social life support amenities was experienced by most of the participants across educational divide (PCC, $x^2 = 8.885$, $df = 2$, $p = 0.012$). Similarly, majority of the participants with unstable occupation experienced lack of these basic social amenities while those in stable occupation reported lack of basic amenities and indebtedness (PCC, $x^2 = 9.550$[a], $df = 2$, $p = 0.008$). However, there was no significant relationship between age, gender, marital status and individual's income with any of the economic consequences identified. (Table 1.3).

**Table 1.3:** Association between demographic characteristics and economic consequences of drug abuse on the study participants

| Demographic characteristics | Indebted No.(%) | Job loss No.(%) | Poverty No.(%) | $x^2$ | Df | P |
|---|---|---|---|---|---|---|
| **Age** | | | | | | |
| <30 years | 42(58) | 21(72) | 76(54) | | | |
| | | | | 3.41[a] | 2 | 0.182 |
| >30 years | 30(42) | 8(28) | 65(46) | | | |
| **Gender** | | | | | | |
| Female | 9(13) | 4(14) | 23(16) | | | |
| | | | | 0.58[a] | 2 | 0.749 |
| Male | 63(88) | 25(86) | 118(84) | | | |
| **Marital status:** | | | | | | |
| **Not Married** | 24(33) | 8(28) | 57(40) | | | |
| Single | 35(49) | 13(45) | 51(36) | | | |
| | | | | 4.36[a] | 4 | 0.360 |
| Married | 13(18) | 8(28) | 33(23) | | | |
| **Education:** | | | | | | |
| ≤Primary | 38(53) | 18(62) | 103(73) | | | |
| | | | | 8.89[a] | 2 | 0.012 |
| ≥Secondary | 34(47) | 11(38) | 38(27) | | | |
| **Occupation:** | | | | | | |
| Unstable[b] | 43(60) | 22(76) | 112(79) | | | |
| | | | | 9.55[a] | 2 | 0.008 |
| Stable[c] | 29(40) | 7(24) | 29(21) | | | |
| **Income:** | | | | | | |
| Informal[d] | 15(21) | 10(35) | 43(31) | | | |
| Business | 18(25) | 4(14) | 19(14) | 6.08[a] | 4 | 0.193 |
| Formal[e] | 39(54) | 15(52) | 79(56) | | | |

Demographic characteristics with superscript letters are used to define participants in each category:: Unstable[b] occupation-unemployed, student; Stable[c] occupation- business, employed; Informal[d] income-prostitution, drug peddling, selling of personal properties, stealing; Formal[e] income- salary, wage, student, menial jobs.

## Associations between demographic characteristics and health consequences of drug abuse on the study participants

From the study, the age of drug users and some health consequences as self-reported by the study participants were positively correlated. Participants self-assessed feeling of hyper activeness upon drug intake was the major health consequence reported by all study participants (PCC, $x^2$ =20.79[a], df= 2, p =0.0001) and whether not or in marital unions (PCC, $x^2$ = 15.53, df= 4, p = 0.004). However, occupation, gender, income and educational status of the study participants were not significantly associated with the self-reported health consequences of drug abuse (p $\leq$0.05) (Table, 1.4).

**Table 1.4:** Demographic characteristics and health consequences of drug abuse on the study participants

| Demographic Characteristics | Hypoactivity No. (%) | Hyperactivity No. (%) | Poor health No. (%) | $x^2$ | df | P |
|---|---|---|---|---|---|---|
| **Age:** | | | | | | |
| **<30 years** | 33(67) | 102(61) | 4(13) | | | |
| | | | | 20.790[a] | 2 | 0.0001 |
| **>30 years** | 15(31) | 64(39) | 28(88) | | | |
| **Gender** | | | | | | |
| **Female** | 8(17) | 26(16) | 3(9) | | | |
| | | | | 0.953[a] | 2 | 0.621 |
| **Male** | 40(83) | 140(84) | 29(91) | | | |
| **Marital status:** | | | | | | |
| **Not Married** | 12(25) | 60(36) | 21(66) | | | |
| **Single** | 26(54) | 67(40) | 6(19) | 15.531[a] | 4 | 0.004 |
| **Married** | 10(21) | 39(24) | 5(16) | | | |
| **Education** | | | | | | |
| **$\leq$Primary** | 34(71) | 102(61) | 24(75) | | | |
| | | | | 3.048[a] | 2 | 0.218 |
| **$\geq$Secondary** | 14(29) | 64(39) | 8(25) | | | |
| **Occupation** | | | | | | |
| **Unstable[b]** | 39(81) | 113(68) | 25(78) | | | |
| | | | | 3.899[a] | 2 | 0.142 |
| **Stable[c]** | 9(19) | 53(32) | 7(22) | | | |
| **Income** | | | | | | |
| **Informal[d]** | 16(33) | 52(31) | 4(13) | | | |
| **Business** | 7(15) | 30(18) | 4(13) | 7.237[a] | 4 | 0.124 |
| **Formal[e]** | 25(52) | 84(51) | 24(75) | | | |

Demographic characteristics with superscript letters are used to define participants in each category:: Unstable[b] occupation-unemployed, student; Stable[c] occupation- business, employed; Informal[d] income-prostitution, drug peddling, selling of personal properties, stealing; Formal[e] income- alary, wage, student, menial jobs.

## Discussion

Drug and substance abuse is a serious worldwide problem that affects several aspects of individual's health and the socioeconomic wellbeing (Raketic et al., 2017) as well as significantly impacting negatively either directly or indirectly on the family and the society (Jakovljevic *et al.,* 2015). The present study explored the socio-economic and health consequences of drug abuse among the inhabitants of a peri-urban community in the outskirt of Nairobi. Previously, a number of both illicit and licit drugs including heroin, cocaine (crack), hashish, marijuana, inhalants, hallucinogens, alcohol, tobacco and legal prescription type of drugs were reported as the major drugs abused globally (Gathu, *et al.,* 2013). Two illegal drugs; heroin and cocaine were reportedly abused by the study participants in this study due to its accessability and affordability. This clearly corroborated previous findings which indicated that heroin is the most abundant, readily available and widely distributed illicit drug in East Africa (Beckerleg *et al.,* 2005). In suburban and rural areas, heroin is more prevalent compared to other illegal drugs due to its affordability and accessibility (Evans-Brown *et al.,* 2011). Besides cocaine and its derivatives (crack) were minimally abused in this study. This is clearly associated to its high costs (Connock *et al.,* 2007) and thus it is not easily available to the drug abusers. Moreover, a substantial number of participants (38%) abused the alternative over-the counter prescription opioids such as cozepam, benzhexnol and rohypnol. The misuse of the alternative over the counter prescription drugs by a substantial number of participants in this study may be attributed to the comparative scarcity of illicit opioids in our study area as a result of the associated high costs beyond reach of poor rural drug abusers as well as strict and firm surveillance by law enforcers. Prescription drugs are licit, highly accessible, affordable and safe thus provide legalized substitutes for the much more expensive illegal opioids in most peri-urban settings (Sairam & Manchikantl, 2014). For, instance some prescription opioids and benzodiazepines are generally prescribed as pain and tension relievers especially in the elderly (Hawkins *et al.,* 2015) and are thus readily accessible in rural settings especially to the youths inclined to cope with boredom (Adlaf & Smart, 1995). Moreover, the current data and as previously reported, (NACADA, 2014), hard drugs such as heroin and cocaine which were previously considered to be limited to major cities as well as legal prescription drugs are slowly but steadily creeping into peri-urban villages further exacerbating drug abuse problems in the society.

An association between demographic, socio-economic and health consequences that correlate to drug and substance abuse in the peri-urban communities have been extensively reported (Van *et al.,* 2011; Goodman & Huang, 2002; Gathu *et al.,* 2013). While drug abuse problem in this study was widespread across all the age groups, being male with less education, living in singlehood arrangement and being unemployed had greater odds of drugs and substances abuse. This clearly indicated that demographic and socioeconomic characteristics of the participants significantly affected the abuse of psychoactive substances. Males were more inclined to abuse drugs compared to their female counterparts consistent with most of the previous study findings where males have grater odds of drugs and substance abuse than females (Briggs *et al.,* 2011; Cummings *et al.,* 2014; Nogueira *et al.,* 2013; Outlaw *et al.,* 2012, Li & Caltabiano, 2017). This can be partially explained by the fact that females generally possess an internalized form of repression that conceptualises women drug abusers as societal failures bound to threaten the traditional feminine upbringing (Galvao, 2018). These traditional gender norms and the associated stigma, have thus led women to self-marginalize or isolate themselves as regards to use of drugs and substances explaining the low number of female drug abusers reported in this study. Besides, contrary to most studies and public perception that opine that substance abuse is mainly confined to the youths (Goodman & Huang, 2002; Patrick *et al.,* 2012; Malta *et al.,* 2014), the present study indicated that drug and substance abuse problem is unlimited to a specific age group but cuts across all ages consistent with the findings of (Li &Caltabiano, 2017). Drug abuse in peri- urban settings generally starts at a very tender age (Jeannin *et*

al., 2013) as a result of social, educational and economic background disadvantages as well as other life stressors and continues to adulthood often resulting into addiction. This partly explains the prevalence of drug abuse problem across the participants age groups studied. Adverse family relationship was the most consistent and common social effect experienced across all age groups with all participants experiencing conflictual family relationships while those with the age of 30 years and above in addition, experienced unstable marriages. Adverse family relationships have been attributed to the drug abusers instigated frequent chaos and domestic violence due to abusers perceived frustrations, stigmatization, suffering and neglect which often results into strained family relationships. However, as a result of the physical and psychological suffering inflicted, families often retaliate as a form of payback to the drug and substance abusers (Paula *et al.*, 2014; Smith & Estefan, 2014).

As regards to living arrangements, participants who were in singlehood life arrangements, reported to be hooked on drug and substance abuse than those in marital unions though the difference between the two groups was quite insignificant. Similarly, a number of participants decried having been marginalised or isolated by their families and community. Singlehood living arrangement promotes loneliness with little social support due to family or communal isolation of the individual drug abuser. Social isolation and rejection have been previously reported as one of the risk factors for drug and substance abuse (Galvao *et al.*, 2018), as they both offer the opportunity for drug abuser to refrain from communal and social activities leading to loneliness (Briggs *et al.*, 2011; Outlaw *et al.*, 2012). In such circumstances, drug abusers generally take refuge in expeditious substance use to strategically manage the isolation, loneliness and other life stressors (Briggs *et al.*, 2011; Outlaw *et al.*, 2012). A negative correlation existed between drug use, educational status, marriage stability and family relationships. Participants with lower educational levels had higher odds of abusing drugs as compared to those with higher levels (post-primary) indicating that education status was a likely risk factor for drugs and substance

abuse consistent with earlier studies (Quek *et al.*, 2013). Besides, participants with higher educational status had relatively stable marriages as compared to the less educated who both experienced unstable marriages and conflictual family associations. This can well be explained by the fact that high education drug abusers were relatively knowledgeable and conscious about the dangers of psychoactive substances and through this self-consciousness and evaluation prohibited themselves from unnecessary marriage and familial conflicts.

The economic consequences of drug and substances abuse are variable and have been previously reported to lead to poor quality of life due to unemployment, low education attainment, reduced work productivity, poor health, high disease transmission rates, social dysfunction, increased violence activities, poverty, homelessness, a lower disease recovery rates and poor diseases treatment outcomes (Jakovljevic *et al.*, 2015). Lack of basic social amenities and indebtedness or living in destitution were some of the major adverse economic challenges noted in this study with more than half of the participants reporting impoverished life or being perpetually indebted. Indulgent into drugs and substances use has been positively associated with poor educational performance (Adalbjarnardottir & Hafsteinsson 2001) with subsequent minimal employment opportunities. This corroborates well the findings in this study where most of the study participants reported to live without most of life's basic social amenities and indebtness. Low income which is an important indicator of socio-economic status has been previously reported as a precipitating factor for abuse of psychoactive substances (Goodman & Huang, 2002). Although, no empirical evidence linking income and drug abuse was found in this study, large number of participants with stable source of income were less likely to engage in drug abuse than those with unstable or informal source. This finding provides enough data to indicate that lower income earners are much more vulnerable to substance abuse compared to the counterparts with high income. Job losses as a result of dismissals due to absenteeism, violence at work place or working under the influence of drugs and

substances as well the unpredictability of the drug abusers were some other economic consequences reported by the participants and is consistent with most similar previous studies (Goodman & Huang, 2002). A significant positive correlation was observed between age of drug users and health variables. Healthwise, drug use generally impacts negatively on individual's health and proper cognitive function and may appear in the form of dependence, or as part of a wider spectrum of associated social problems and bad behaviour (Masih *et al.*, 2019). Self-assessed feeling of drug dependence and hyper activeness upon drug intake was the major health consequences self-reported by most of the study participants. Most drugs and substances especially the opioids and the stimulants affect the brain sensory mechanisms (Reichert *et al.*, 2021) interfering with the brain's capacity to produce body metabolites that confer control of individual self conciousnes, explaining the self-assessed feeling of hyper activeness and euphoria as drug abuse consequences reported by most of the drug abusers in this study.

A number of limitations were however associated with this study and thus warrant to be mentioned for similar future studies. The scope of the area covered limits the full overview of the current study findings which can only be overcome by collection of data on a much larger-size samples obtained from a large sampling area in various regions of the city suburbs. Similarly, cultural factors may play a role in the gender–substance abuse relationship (Li & Caltabiano, 2017) and therefore future work may warrant consideration of males irrespective of cultural background to be at much risk of substance abuse than females.

## Conclusion

Despite worldwide concern and education about psychoactive substances, much information is yet to trickle to the rural areas of Kenya and few studies on the same have been carried out in these areas. Although drug abuse problem has been previously tagged to be limited to big cities and towns the types of drugs and the number of drug abusers is steadily increasing especially in peri-urban environments of major cities such as, Gachie, a town within the suburb of Nairobi city. The consequences of drug abuse results in immense negative socio-economic and health consequences to the individual drug abusers, family and society at large. This problem clearly mirrors the current drug abuse scenario in big cities where drug abuse problem is spread across the age groups with men gender being much more affected. This thus calls for concerted efforts that should focus on the peri urban towns as possible breeding grounds for drug abusers. Therefore, any strategy devised to fight and curb drugs and substance abuse problems by law enforcers and other practitioners should be modelled to target peri-urban environments which seem to offer a safe environments to drug abusers in terms of drugs affordability, accessibility and escape from law enforcers. Similarly, regulations involving sell and use of over- the counter drugs should be enforced to curb the overflow of these drugs to the non-authorised groups in the streets.

## Competing interests

All authors declare that they have no conflict of interest associated with the publication of this manuscript.

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