

## Relationship between Awareness of Morbidity Risk and Psychosocial Wellness of Students in Public Secondary Schools in Nairobi County, Kenya

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### ABSTRACT

As governments deploy immense resources to reign in on the trafficking and abuse of illegal drugs such as marijuana, heroin, and cocaine, it remains untenable controlling the abuse of prescription drugs. This study set out to examine the relationship between awareness of morbidity risk and psychosocial wellness of students in public secondary schools in Nairobi. Based on the situated rationality theory, this study adopted the correlational research design. Quantitative data was analyzed descriptively by use of frequencies, percentages and means. It was also analyzed inferentially by use of t-test, Pearson correlation and multivariate regression analysis. Data from interviews and secondary data sources were analyzed using thematic and content analysis procedures. The study sampled 255 respondents. These included 100 students, 96 teachers, 42 principals and, 17 MOE officials. Out of these, 100 students (100%), 77 teachers (80.2%), 34 principals (81%) and 11 MOE officials (64.7%) responded. The findings show that prescription drug misuse is rampant among students, posing a threat not only to the kids who abuse the medications, but also to the nation's well-being, as the youth represent the people's future. The presence of risk and protective factors influences prescription medication addiction. Despite the fact that the students were aware of the risks associated with prescription drugs they continued abusing them. This was buttressed by Pearson correlation showed that awareness of morbidity risk had statistically significant relationships with psychosocial wellness among students ( $r=0.468$ ,  $p<0.05$ ). The study concludes that drug usage is widespread among secondary school students in Nairobi County, in terms of the types, quantity, and frequency of use irrespective of students' awareness of the morbidity risks they posed. The study recommends that there was need to enhance the awareness of morbidity risk associated with prescription drug use through awareness campaigns among other interventions.

**Keywords:** *Awareness of Morbidity Risk; Psychosocial Wellness; Students in Public Secondary Schools; Nairobi County, Kenya*

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### I. INTRODUCTION

Awareness of morbidity risk of prescription drug abuse could be a predictor of students' psychosocial wellness (Calcaterra, Glanz, & Binswanger 2013; Huang et al., 2006; McCabe, Young, & Boyd, 2007; SAMHSA, 2013b; Cheatle, 2015; Guo, Xu, & Deng, 2016) among others. Abuse of these drugs has numerous negative consequences such as injury, fatal and nonfatal overdoses (Cheatle, 2015), cardiac arrhythmia, and respiratory depression among others they continue to be abused (Walker et al., 2017).

Because of the inherent potential of morbidity and addiction, an accidental prescription poses a serious risk to an individual. Overdose deaths from opioids, for example, climbed by about 400 percent, outnumbering deaths from heroin, cocaine, and other stimulants combined (Calcaterra, et al., 2013). Prescription drug abusers are younger and less likely to be married than those without the problem, and prescription drug use disorders co-occur with other substance use disorders and psychiatric conditions at alarmingly high rates (Huang et al., 2006). Prescription drug misuse appears to be more widespread in rural areas than in metropolitan areas among adolescents, despite the lack of statistics (Havens, Young, & Havens, 2011). The former study may not expressly show the link between morbidity risk and the psychosocial wellness of students in African countries or Kenya for that matter. This underlines the pertinence of studies such as this current one.

The key developmental risk phase for the onset of prescription medication misuse, like that of other substances of abuse, is during adolescence (McCabe, et al., 2007). Prescription pharmaceuticals, notably stimulant and opioid medications, were the most often abused medications in the United States, with over 13 percent of 12th graders

reporting lifetime prescription opioid usage (McCabe, et al., 2022). Prescription stimulant misuse was as common (9.5 percent) as lifetime medically approved use (McCabe & West, 2013), and benzodiazepine abuse was equally widespread (7.5 percent). The prevalence of prescription drug addiction is similar to that of adults, with minor gender differences (SAMHSA, 2013b). Abuse is much more common among college students, with studies revealing that 23% of college students had a lifetime history of prescription drug abuse. The former studies were focused on high school and college students in other parts of the world. The generalizability of the findings to the Kenyan situation is thus limited; underlining the need for studies such as this current one.

Cheatle (2015) explored prescription opioid addiction, morbidity, and mortality. The research consisted of a current literature review. The data reveal that the efficacy of long-term opioid therapy in patients with chronic pain is equivocal, although there is intermediate-level evidence of dose-dependent risk of damage. Due to the lack of uniform definitions of what constitutes misuse, abuse, and addiction, the estimated prevalence of prescription opioid abuse and opioid use disorders ranges from 1% to 40%, but several recent studies have developed a unique methodology to more accurately assess these states in the pain population. The rate of opioid-related overdose deaths is not insignificant, and a variety of patient- and medication-related risk factors have been identified, which could serve as a foundation for risk reduction methods. Because of the different definitions used in different research, determining the prevalence of misuse, abuse, and addiction in the pain population has proven difficult. Additional high-quality research using standard definitions is needed in this area, as well as in minimizing the risk of opioid-related overdose fatalities. This current study sets out to bridge these empirical gaps.

A study titled "Prescription drug monitoring and drug overdose mortality" was conducted by Li et al. (2014). The findings suggest that PDMPs have a wide range of effects on drug overdose mortality. Overall, PDMP adoption was linked to an increase of 11% in drug overdose mortality. PDMP implementation did not result in a reduction in drug overdose mortality over time. It is necessary to improve the program to make it easier for healthcare practitioners to access and use prescription drug monitoring data systems. The study by Li et al. does not directly link drug use and mortality an African context. It may thus not directly answer the questions under investigation in this current study.

Guo and others studied the "Association between Nonmedical Use of Prescription Drugs and Suicidal Behavior among Adolescents." This study sought to examine the longitudinal relationships between nonmedical use of prescription drugs (NMUPD), suicidal thoughts and attempts, and depression, based on the findings of cross-sectional studies that suicide is linked to NMUP (Guo et al., 2016). This study sought to give insights on whether baseline NMUPD has a relationship with suicidal thoughts and attempts when depressive symptoms were controlled and if increased risks were as a result of depression. This study used a randomly selected sample size of 3273 students from Guangzhou schools where surveys were carried out and subsequent data analysis was done. The findings of this study show that baseline depressive symptoms, alcohol-related problems, suicidal ideation and thoughts, opioids and sedatives misuse, and NMUPD were associated with suicidal ideation after follow-up. Though this study is not based in Nairobi, its findings show that NMUPD is a catalyst of suicidal ideas and thought, a case similar to that of Nairobi, and therefore there is a need for putting in place mitigation efforts through a proper surveillance system.

Lakhan and Kirchgessner studied "Prescription stimulants in individuals with and without attention deficit hyperactivity disorder: misuse, cognitive impact, and adverse effects." This study focused on the use of prescribed stimulants to treat people with attention deficit hyperactivity disorder (ADHD) as they aid them to be more focused, although misuse of these stimulants has increased within unaffected people due to little knowledge of risks and misconceptions about these drugs among student (Lakhan & Kirchgessner, 2012). The findings of this study showed that stimulants are associated with psychosis, myocardial infarction, cardiomyopathy, and death. The mitigations to this menace as suggested by this study are that their safety studies and education, as well as long-term treatments, should be availed on the risks of stimulant misuse. However, the applicability of these findings to secondary school students in Kenya is limited since the study was carried out in other parts of the world. Indeed, awareness of morbidity risks associated with the abuse of prescription drugs and its relationship with psychosocial wellness of students is scantily studied especially in the Kenyan context.

Through a national survey, NACADA established that after alcohol at 9.3%, the second most abused substances among students in Kenya were prescription drugs at 6.8%. Interestingly, these drugs were more abused than tobacco (cigarettes and other tobacco products) at 5.2%. Most students were initiated into drug use at 13 to 15 years with Nairobi County leading in prescription drug abuse. The findings by NACADA (2019) are corroborated by Kahuthia-Gathu et al. (2013) as already cited which shows that Nairobi has the highest levels of prescription drug abuse in Kenya. However, the link between awareness of the risk associated with the abuse of prescription drugs and the psychosocial wellness of students is either scantily or not holistically studied.

The study by Kathia-Gathu and others, just like the surveys by NACADA, do not link the awareness of the various risks associated with the abuse of prescription drugs and the psychosocial wellness among students. This means that it remains a tall order making empirically informed interventions on ways of harnessing risk awareness to check the negative psychosocial effects of abuse of prescription drugs among students in the county. This ought not to be so since interventions pegged to risk awareness at societal (ecological levels) have been proven to be effective at checking substance use. This study thus sets out to bridge this apparent gap by investigating the relationship between awareness of morbidity risk and psychosocial wellness among students in Nairobi County, Kenya.

### **1.1 Objectives of the Study**

To evaluate the relationship between awareness of morbidity risk and psychosocial wellness of students in public secondary schools in Nairobi County, Kenya

### **1.2 Research Hypotheses**

HO: There is no statistically significant relationship between awareness of morbidity risk and psychosocial wellness of students in public secondary schools in Nairobi County, Kenya

## **II. THEORETICAL FRAMEWORK**

Various theories can explain the interrelation between the dependent variable (psychosocial wellness of students) and awareness of morbidity risk. This study is based on the Situated Rationality. The theory postulates that situations influence individual rationalities about risk. These theories are drawn from cognitive and behavioural theories. In this regard, differences in the way people perceive risk and rational behaviour can exist (Parsons and Atkinson 1992; Bloor 1995). The theory posits that people do not just make decisions about risk without a context. In this regard, socially situated risk perceptions determine the risk behaviour of individuals. In this regard, abuse of prescription drugs would be an outcome of the environment where the abuser comes from. In the case of this study, perceptions of students about the immediate morbidity risks associated with prescription drug abuse could militate against their propensity to abuse these drugs.

Conversely, if there is scanty knowledge about the morbidity risks associated with drug use, students can continue abusing prescription drugs unabated. Douglas (1992) is of the view that knowledge about risks in the environment where one is linked to the level of abuse of drugs and vice versa. This current study sets out to find out the level to which knowledge about the morbidity risks associated with prescription drug use in society explains the drug use behaviours of adolescents abusing such drugs.

## **III. METHODOLOGY**

### **3.1 Research Design**

This study adopted the correlational research design. This research design measures the relationship between two variables (Kahn, 1993). This study aimed at examining the correlation between awareness of the morbidity risk of prescription drug abuse and psychosocial wellness (the response variable). In establishing the aforesaid relationship, it was deemed a suitable design.

### **3.2 Location of Study**

The study is focused on Nairobi County, Kenya. This is one of the 47 Counties and houses the capital of Kenya. There are 17 Sub-Counties in the County namely Westlands, Dagoretti North, Dagoretti South, Langata, Kibra, Roysambu, Kasarani, Ruaraka, Embakasi South, Embakasi North, Embakasi Central, Embakasi East, Embakasi West, Makadara, Kamukunji, Starehe and Mathare. The county has a population of 4,397,073 persons. It is the most populous county in Kenya according to the Kenya National Bureau of Statistics (KNBS, 2019). There are 71 public secondary schools in Nairobi County. The county was chosen due to the special challenges related to PDU among adolescents (NACADA, 2019).

### **3.3 Target Population**

A population is the portion of the study from which the researcher can practically reach to select a representative sample (Mugenda & Mugenda, 2008). This study focuses on the 71 public secondary schools in Nairobi County. The county has 44,561 students and 2,451 teachers in public secondary schools (MOE, Nairobi County,

2020). The 71 principals in the schools selected were also included in the study. Also, 20 MOE (national and county governments) were targeted. The county was targeted due to high levels of prescription drug abuse (Kahuthia-Gathu et al., 2013). The target population was presented in Table 1.

**Table 1**  
*Target Population*

Category	Population
Students	44,561
Teachers	2,451
Principals	71
MOE officials	20

### 3.4 Sample Size and Sampling Procedure

This section presents the sample size and the procedure that was employed in this study.

#### 3.4.1 Sample Size

The study sampled 255 participants. These included 100 students, 96 teachers, 42 principals and, 17 MOE officials.

**Table 2**  
*Sample Size*

Category	Population	Sample	Calculation
Students	44,561	100	$N1=N/1+N*(e)^2$
Teachers	2,451	96	$n2=N/1+N*(e)^2$
Principals	71	42	$N3=N/1+N*(e)^2$
MOE officials	20	17	$N4=N/1+N*(e)^2$

#### 3.4.2 Sampling Procedure

Sampling entails the selection of a representative number of individuals or objects from a study population (Orodho & Kombo, 2002). This study used the proportionate stratified and simple random sampling technique to obtain data. Proportionate sampling technique was used to obtain proportion samples from the four categories (stratum): students, teachers, principals, and MOE officials. Thereafter, simple random sampling was used to obtain the specific study participants from each stratum.

The simplified formula put forward by Yamane (1967) was used in calculating sample size.

The formula is as follows:

$$n=N/1+N*(e)^2$$

Where:

n=the sample size

N= the population size

e= sampling error (assumed at 0.1)

The formula was applied for each category but not the totals.

### 3.5 Research Instrument

Questionnaires, interview guides, and document analysis was used in data collection. The research instruments contained questions based on the research objectives. To begin with, the questionnaire contained 9 sections. While section one sought information on demographic characteristics of the study participants, sections two to nine sought information on each of the study variables namely: level of abuse of prescription drugs; awareness of addictive risk; awareness of physical dependence risk; awareness of toxicity risk, awareness of morbidity risk, awareness of behavioural risk; other factors that could influence abuse of prescription drugs (intervening variables)

and; psychosocial wellness. It further included close-ended, psychometric tests as well as open-ended questions. On their part, the interview guides contained questions corresponding to each of the study hypotheses.

### 3.6 Data Collection Procedures

This study utilized both primary and secondary data. Whereas teachers and students filled out the questionnaire, interviews were focused on principals and MOE officials. Secondary data was collected from relevant online and print materials. Four research assistants were recruited, trained, and engaged in data collection. Before administering the research instruments, a research permit and letters of authorization were obtained from the relevant authorities. The researcher then visited the schools and the offices of the sampled MOE officials and sought permission to administer the questionnaires as well as to conduct the interviews. Data collection lasted 6 weeks. Whereas special appointments were made for the interviews, the questionnaires were dropped and picked after specially agreed upon times with the school principals and their representatives.

### 3.7 Pilot Study

Piloting was conducted to assist in determining the accuracy, clarity, and suitability of the research instrument. This entailed a pilot study targeting 10 teachers, 10 students, and 2 MOE officials in Nairobi County which neighbours Nairobi County. The participants of the pilot study were not included in the main study. This choice of pilot study sample was motivated by the fact that 10% of the study sample is considered sufficient for piloting study instruments (Kothari, 2004). The data collected was used to validate the validity and reliability of the research instruments.

#### 3.7.1 Reliability of the Research Instruments

Reliability tests are carried out to measure the consistency of results from a test. This study used Cronbach's alpha, a reliability coefficient that varies from 0 to 1 to test the reliability of the questionnaires. Research items with Cronbach's alpha values of more than 0.7 are considered to have sufficient internal consistency (Malhotra, 2004). As shown in Table 3, the Chronbach alpha values obtained ranged between 0.79 and 0.82. The tools were thus considered reliable for use in data collection.

**Table 3**  
*Reliability Testing*

Variable	No. of Item	Teachers' Responses Cronbach Alpha ( $\alpha$ )	Students' Responses Cronbach Alpha ( $\alpha$ )
Awareness of Morbidity Risk	7	0.79	0.80
Psychosocial Wellness	11	0.82	0.77

The interview guides were piloted among the 2 educational officials. The findings obtained from both interviews were compared for consistency. The consistency of the findings from both questionnaires and interview guides were assessed through triangulation by checking the level to which it relates to data from secondary sources.

#### 3.7.2 Validity of the Research Instruments

Study instruments are said to have high degrees of validity if they "actually measure the intended parameters" (Mugenda & Mugenda, 2009). In this study, content validity was ensured through the inclusion of sufficient questions for each study variable. Face validity was assessed by finding out the ease with which the respondents answer the research questions. In this case, any ambiguous questions were adjusted to make them easy to understand and answer. The input of university supervisors on the constructs of the research tools was also used and their guidance used to improve the tools. Construct validity was ensured through the operationalization by setting the questions in the research tools based on the reviewed literature and the operationalized definition of the study variables.

### 3.8 Data Analysis and Presentation

Quantitative data was analyzed descriptively by use of frequencies, percentages and means. It was also analyzed inferentially by Pearson correlation. Data from interviews and secondary data sources were analyzed using thematic and content analysis procedures.

## IV. FINDINGS

### 4.1 Demographics of the Participants

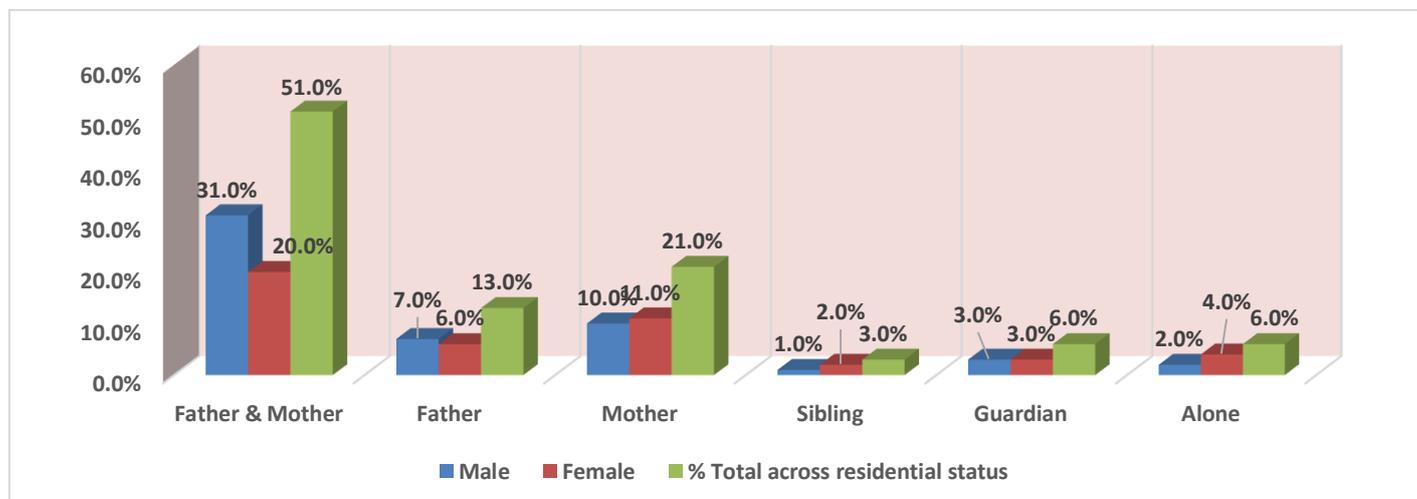
The study sampled 255 respondents. These included 100 students, 96 teachers, 42 principals and, 17 MOE officials. Out of these, 100 students (100%), 77 teachers (80.2%), 34 principals (81%) and 11 MOE officials (64.7%) responded as indicated in Table 4. These findings show that the various categories of study participants adequately responded to the study which was deemed sufficient for analysis.

**Table 4**

*Response Rate*

Response	Students		Teachers		Principals		MOE Officials	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Responded	100	100	77	80.2	34	81.0	11	64.7
Non-Respondent	0	0	19	19.8	8	19.0	6	35.3
<b>Total</b>	<b>100</b>	<b>100</b>	<b>96</b>	<b>100</b>	<b>42</b>	<b>100.0</b>	<b>17</b>	<b>100.0</b>

General information about the students and teachers was assessed in the study. This included gender, age, person students lived with, class of students, duration teachers had taught in their current schools as well as teachers' level of education. First and foremost, the findings show that most of the students lived with parents, males (31%) and females (20%). Overall, more students lived with both parents (51%); which was more than half. These were followed by 21 % who lived with their mothers and 13% who lived with their fathers. Further, 6.6 % lived with guardians or alone while a paltry 3.3% living with siblings. This shows that most students lived with parents which could a bulwark against prescription drug use as posited by Nargiso et al., (2015). These findings were presented in Figure 1.



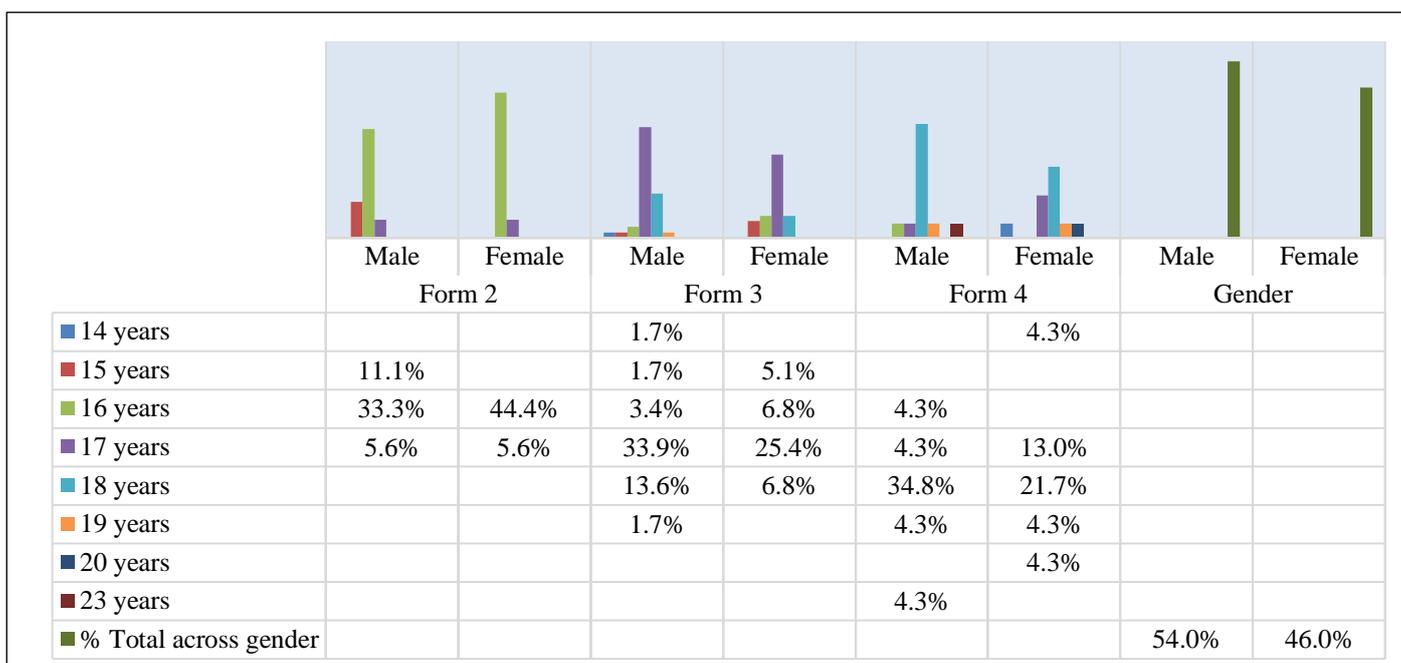
**Figure 1**

*Students Gender and Residential Status*

The fact that most students lived with their parents meant that they could get guidance on prescription drug use. The findings were further supported by respondents who opined that parent or guardian, have a big impact on a student’s life and the decisions they make. They reasoned that there were numerous approaches for parents to reduce the likelihood of their children abusing prescription medicines. They underlined the need of parents being involved in their children's lives, setting norms and expectations, and informing them about the hazards of prescription drug misuse. This agrees with the study by El Kazdough et al. (2018) who posits that parental support can affect substance use tendencies among students. To this end one of the respondents said:

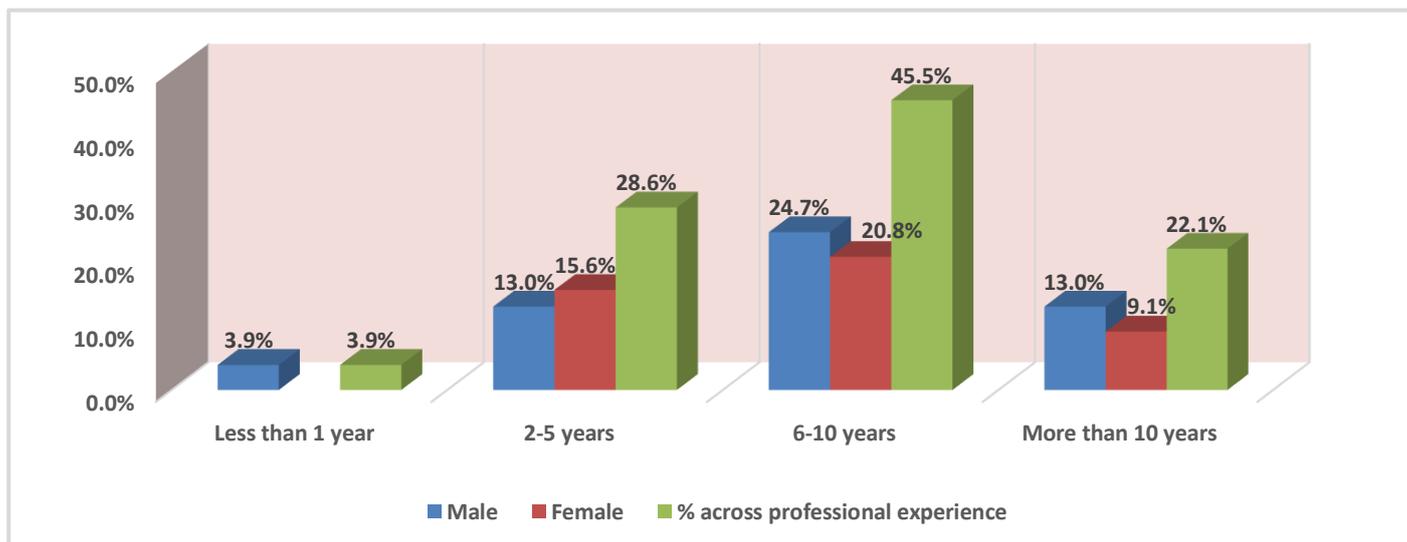
*I live with my parents because they provide me with care, emotional support, security, and safety, in addition to material and financial assistance (Principal 1, Nairobi, May 2022)*

The students were asked to indicate their class. The findings show that most of the students were male (54%) while females were 46%. Most of the males were either in Form 4 or Form 3 at 34.8% and 33.9% respectively. These were followed by females most of whom were in Form 3 (25.4%) and Form 4 (21.7%). The rest were in the other classes. Most of those aged 16 years were either in Form 2 with 44.4% of them being females. Most of the male students were either in Form 4 (34.8%) or in Form 3 (33.9%). These findings show that most of the older students were male. Both genders were however well represented in the study with no major differences in the demographic characteristics of either gender being registered. The findings could thus clearly depict the opinions of the students based on gender, age and class. The findings were presented in Figure 2.



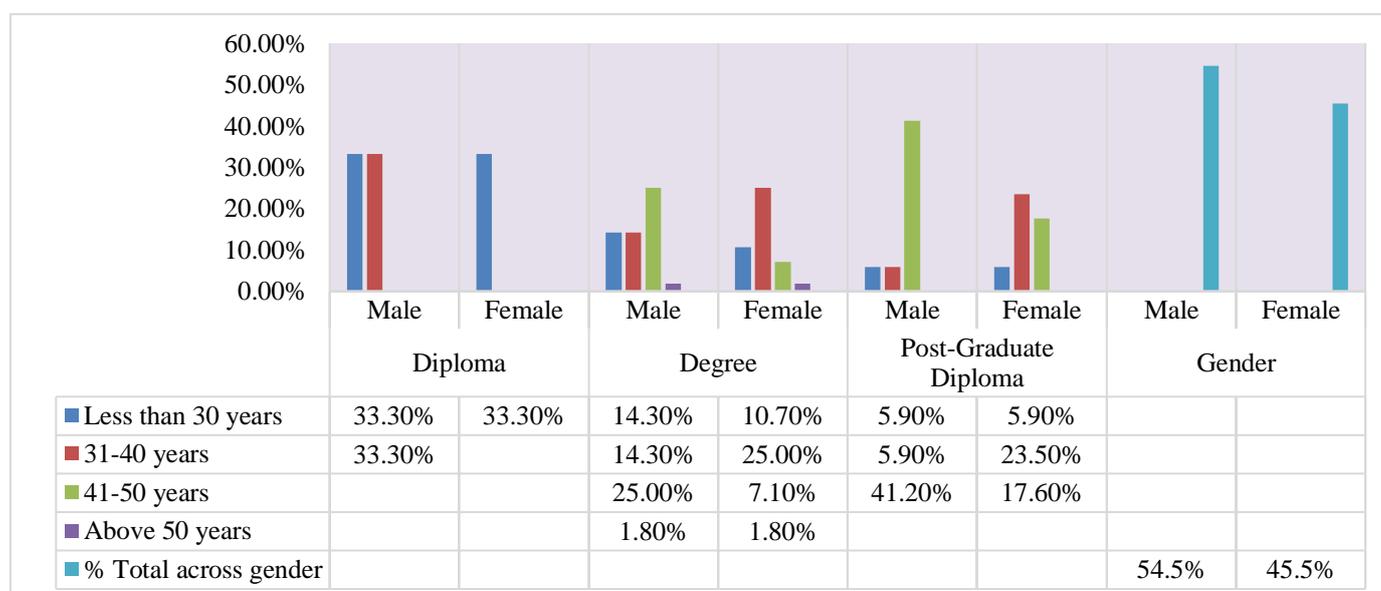
**Figure 2**  
*Students Gender, Age and Class*

Most of the male and female teachers had taught for 6 to 10 years at 24.7% and 20.8% respectively as shown in Figure 3. These were followed by females who had taught for 2 to 5 years (15.6%) and males who had taught for either 2 to 5 years or more than 10 years at 13% respectively. Only 3.9% of male teachers had taught for less than 1 year with no female teachers teaching for such duration. These findings show that most of the teachers had taught in the schools long enough to understand the issues facing their schools. This is important since work experience enhances mastery of a subject (Kamamia, Ngugi, & Thinguri, 2014).



**Figure 3**  
*Teachers Gender and Professional Experience*

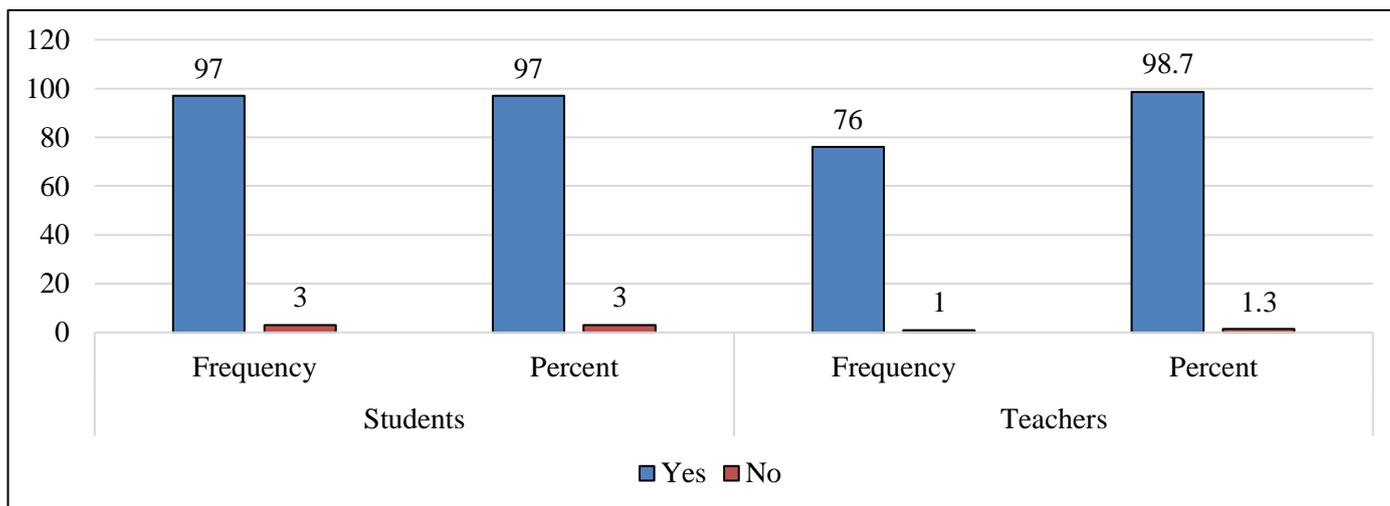
Most of the teachers were males who were aged between 41 and 50 years and had post-graduate diplomas. These were followed by male and female teachers who had diplomas and were aged less than 30 years each at 33% and male teachers who had diplomas and aged 31 to 40 years at 33.3%. The next important group was male teachers who had degrees aged between 41 and 50 years and female teachers aged 31 to 40 years who had degrees at 25% respectively. These findings show that the teachers had sufficient academic qualifications and could make informed contributions to the study in agreement. This further agrees with the study by Kamamia et al. (2014) that highlights the role played by qualifications on the quality of contributions made on a subject. These findings were presented in Figure 4.



**Figure 4**  
*Teachers Gender, Age and Academic Qualifications*

#### 4.2 Prescription Drug Use

The teachers and students were asked to point out if “there were instances of prescription drug abuse among students in your school.” The findings were presented in Figure 5.



**Figure 5**  
*Prescription Drug Use*

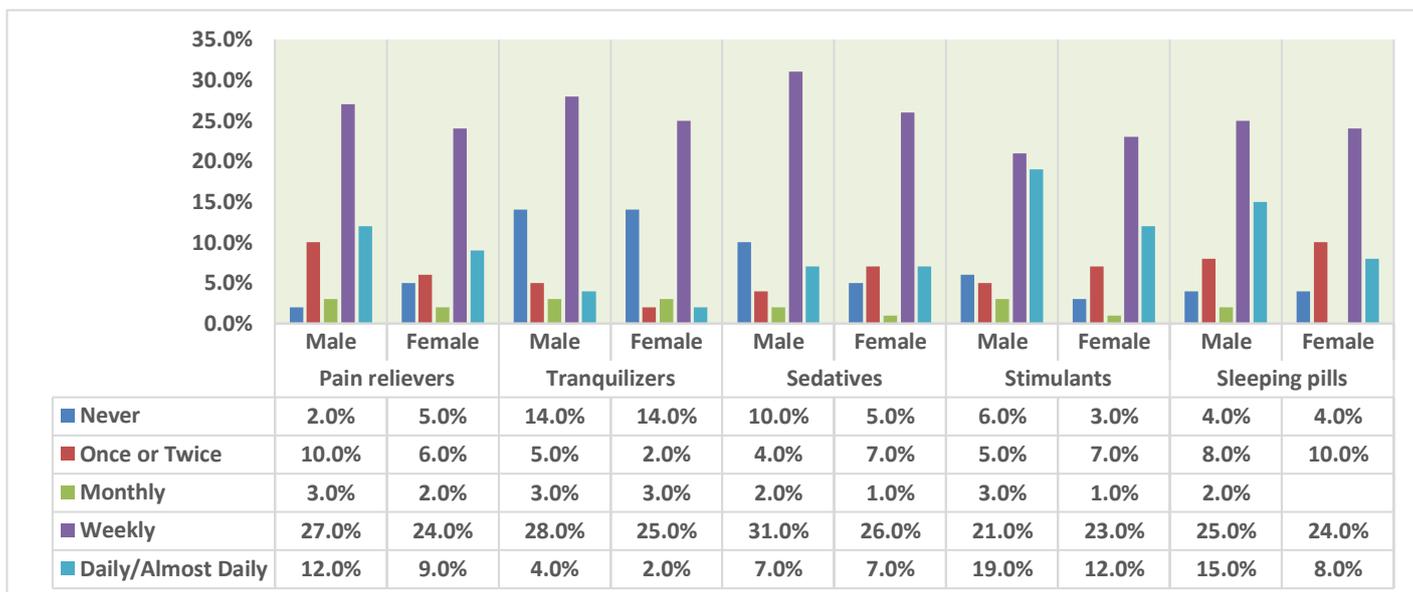
As shown in Figure 5, most of students (97.0%) said yes while 3.0% said no. Most of the teachers (98.7%) also said yes while a paltry 1.3% said no. The findings show that there is a high prevalence of prescription drug abuse among students especially painkillers, stimulants and anti-anxiety medication. These findings agree with the study by Compton and Volkow (2006) that shows that the most abused substances are prescription drugs, especially opioid painkillers and stimulants.

The study noted that many young people believe that prescribed medicines are safer to consume, which may explain the high rates of abuse among students. Prescription medicines are used by students to relieve tension and cope with stress and worry. Perceived safety of use of these drugs to relief stress was also identified by Compton and Volkow (2006). This is because students face weariness, exhaustion, stress, and anxiety on a daily basis, limiting their capacity to achieve academic objectives. As a result, individuals may seek out substances that will assist them. One of the respondents said:

*The cases are high. Stimulants are the most misused drugs. The misused prescription drugs are sourced from peers, who include friends, roommates, and classmates (Respondent B, Nairobi County, May 2022).*

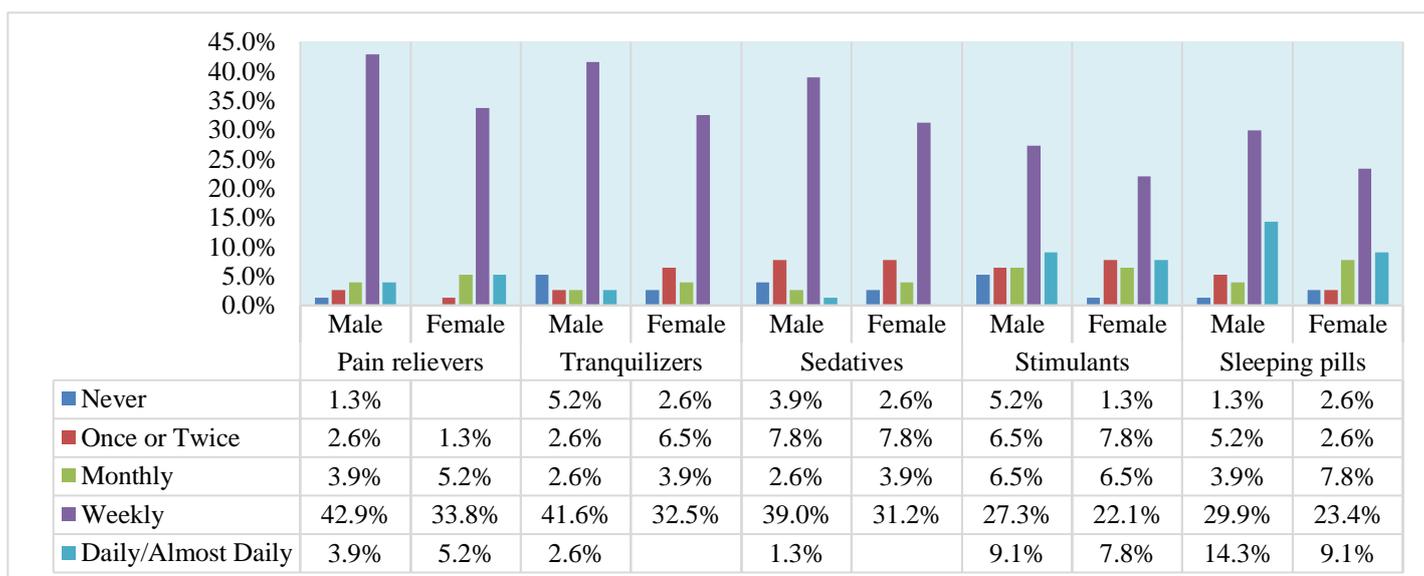
The students and teachers were presented with selected prescription drugs and asked to rate the ones they had seen or heard about a student abusing. The findings were presented in Figure 6 shows that the most abused prescription drugs according to students were sedatives which were abused on a weekly basis at 31% and 26% for males and females respectively. These were followed by tranquillizers which were abused on a weekly basis according to 28% of males and 25% of females. The next important drugs were pain killers and were abused on a weekly basis at 27% and 24% for males and females respectively. Sleeping pills were abused on a weekly basis by 25% of males and 24% of females. The findings show that all most of the substances under investigation were highly abused with the most abused being sedatives, tranquillizers and painkillers. Most of the prescription drugs were abused weekly. These findings corroborate the findings by NACADA (2012) that show that the main abused prescription drugs abused were morphine, codeine, pethidine, sedatives, or sleeping pills.

The study shows that the rate of use of prescription drug in secondary schools is high in Kenya. This finding is comparable to that of Compton and Volkow (2016), who claim that prescription drug addiction in the United States has increased dramatically and is now at an alarming level, particularly for opioids, analgesics, and stimulants. Currie and Cameron (2012), point out that Canada was the top per capita consumer of high-potency prescription painkillers in the world.



**Figure 6**  
Categories and Use of Prescription Drugs as Reported by Students

According to male teachers, the most abused substances were painkillers (42.9%), tranquilizers (41.6%) and sedatives (39%). According to females, the most abused substances were also painkillers (33.8%), tranquilizers (32.5%) and sedatives (31.2%). For both genders, these drugs were abused on a weekly basis. The next important substances abused according to both genders were sleeping pills at 29.9% male teachers and 23.4% female teachers. Stimulants followed closely at 27.3% for male teachers and 22.1% female teachers. This shows that there was high level of various types of prescription drugs in accordance with the survey by NACADA (2012). The findings were presented in Figure 7.



**Figure 7**  
Categories and Use of Prescription Drugs as Reported by Teachers

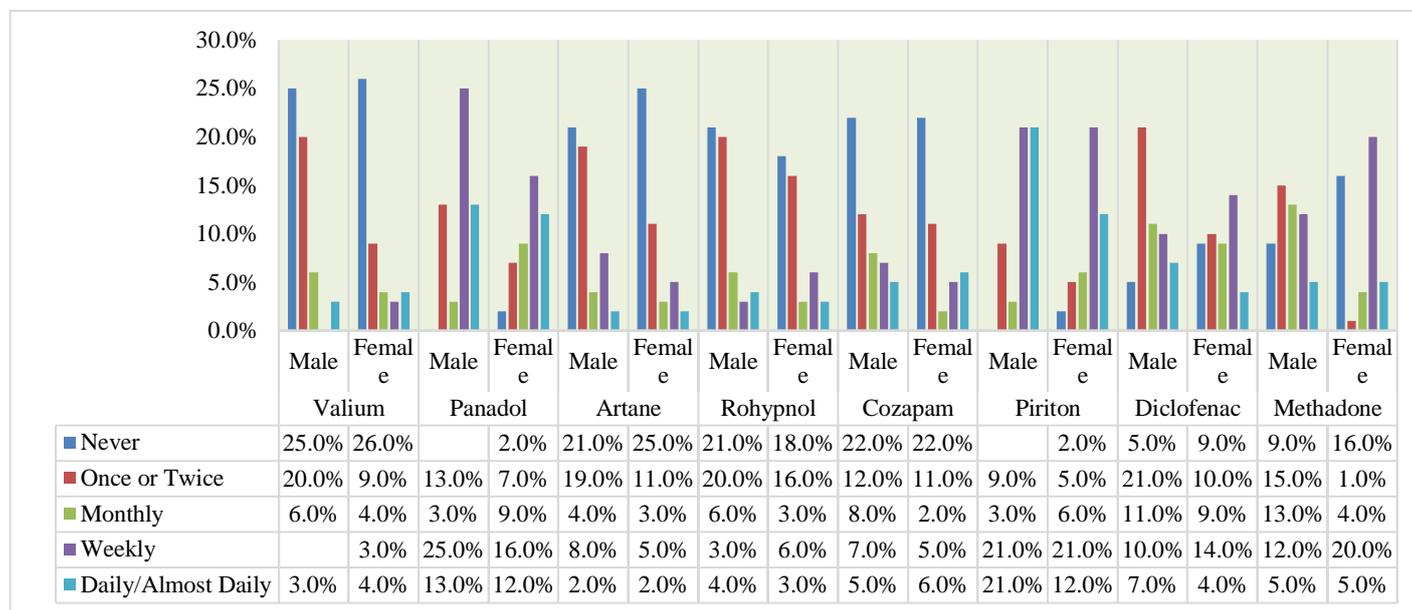
The study went on to ask the teachers and students to indicate the level of abuse of prescription drugs in Nairobi County. They concurred that the level was high for students and teachers. To this end, one of the respondents said:

*The level is high. Most students abuse drugs especially prescription drugs because either they are stressed or are hurting* (Respondent F, Nairobi County, May 2022).

These findings agree with extant literature that shows that in developed countries, prescription drugs trail only alcohol and cannabis as the most common substance of abuse among the youth. In most cases, the rate of abuse was higher for those with weak social bonds. However, negative influences from newer social bonds could overtake the protective edges emanating from early-life bonds (Yang & Yang, 2017).

The threat is also being felt across Africa, according to Chibi, Yende-Zuma, and Mashamba-Thompson (2020). Over the past ten years, there has been an increase in the diversion and abuse of prescription drugs, especially in high-income countries, which has had a substantial impact on the opioid epidemic. This is because; many young people assumed that prescribed medicines were safer to ingest, which may explain the high rates of usage among students, according to the authors. Kasundu et al. (2012) buttresses the point by adding that demographic, economic, and socio-cultural factors contribute to prescription. As a result, prescription medications were mostly utilized to alleviate tension and cope with stress and anxiety.

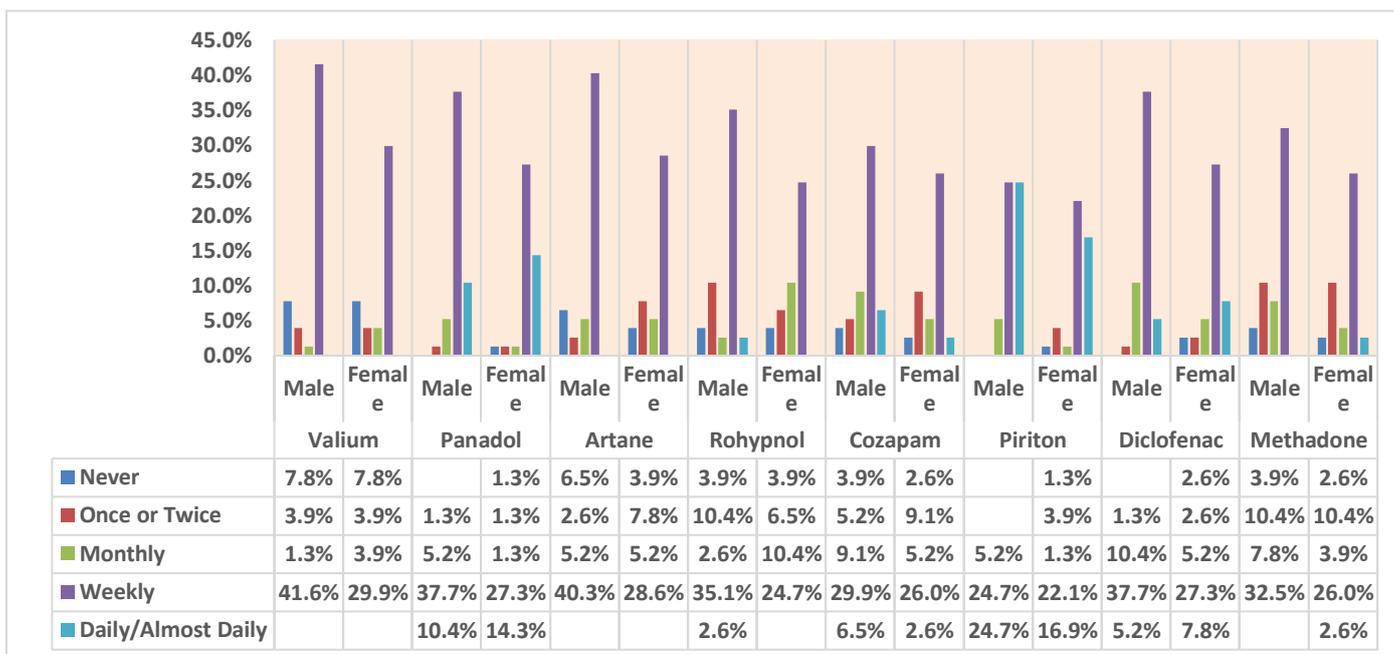
The respondents were required to rank the specific names of drugs used or abused. The students ranked Valium as being used once or twice per week (26% females and 26% females). Panadol was used weekly (25% males and 16% females). According to male students, Diclofenac (21%), Rohypnol (20%), Valium (20%) and Artane (19%) were abused once or twice. Piriton was also used daily or almost daily according to male students (21%) and 12% of female students. Female students went on to opine that methadone was used weekly at 20%. Piriton was used on a weekly basis according to 21% of males and females respectively. The findings show that the various substances were regularly used with Valium, Panadol and Piriton being the most used.



**Figure 8**  
*Names of Prescription Drugs Used as Reported by Students*

Male teachers pointed out that the most students were abused on weekly basis. These included Valium (41.6%), Artane (40.3%), Panadol (37.7%), Diclofenac (37.7%), Rohypnol (35.1%) and Methadone (32.5%). For female teachers, students tended to abuse most prescription drugs on a weekly basis. To this end, the most abused were Valium (29.9%), Artane (28.6%), Diclofenac (27.3%), Cozapam (26%) and Methadone (26%) among others. Piriton was also abused on a weekly basis or daily according at 24.7% respectively according to male teachers and weekly or daily/almost daily respectively at 22.1% and 16.9% respectively according to female students. These

findings agree with the study by Kahuthia-Gathu et al., (2013) that show that the main drugs abused in Nairobi are Valium, Panadol, Artane, Rohypnol, Cozapam, and Piriton.



**Figure 9**  
Names of Prescription Drugs Used as Reported by Teachers

When asked to point out the main prescription drugs abused by students in schools through an open-ended question, the respondents listed Valium, Panadol, Artane, Rohypnol, Cozapam, Piriton, Diclofenac and Methadone. This further agrees with the study by Kahuthia-Gathu et al. (2013). To this question, one the respondent said:

The prescription listed drugs are mainly abused because they are prescribed for pain relief, anxiety or sleep problems and attention-deficit hyperactivity disorder....The most common problems facing students (Respondent G, Nairobi County, May 2022).

The forgoing responses buttress the fact that the aforementioned drugs were highly abused by students. According to existing literature, abuse of prescription drugs entails the use of medication for other purposes than those prescribed by the doctor. Regrettably, it is not easy to check such abuse. This emanates from the fact that although governments deploy immense resources to reign in on the trafficking and abuse of illegal drugs such as marijuana, heroin, and cocaine, prescription drugs are legal and easy to buy over the counter (Boyd, McCabe, Cranford, & Young, 2006). The findings showing that the majority of students commonly abused Valium, Panadol, Artane, Rohypnol, Cozapam, Piriton, Diclofenac and Methadone. According to the study listed drugs are mainly abused because they are prescribed for pain relief, anxiety or sleep problems and attention-deficit hyperactivity disorder- most common problems facing students. This study align with those of a comparable study that included 26 575 people and found that over half of those surveyed acknowledged the above listed prescription drug misuse (McCabe et al., 2022).

Prescription drug abuse and serious toxicity, including overdose, were noted in the study in line with the study by Monnat and Rigg (2016). The findings show that prescription drugs could lead to an increase in blood pressure, physiological dependence on the drinks (being unable to work well without taking them), might aggravate mental/psychiatric illnesses, increase the risk of addiction to other substances of abuse, breathing (Cardiovascular) problems, heart attack, and even death in a student, as well as seizures, hallucination, and agitations in a student which was also identified by Ritchie and Roser (2019). The risks that students were exposed by using prescription drugs were underlined by one of the respondents who said that that some students had experienced toxicity as a result of continuous usage of the drugs. Indeed prescription drug misuse can have serious medical consequences. Increases in prescription drug misuse are reflected in increased emergency room visits, overdose deaths associated with prescription drugs and treatment admissions for prescription drug use disorders, the most severe form of which is an

addiction. This approach is supported by Zedler et al. (2014) who claim that substantial risk for serious opioid-related toxicity and overdose exists at even relatively low maximum prescribed, especially in patients already vulnerable due to underlying demographic factors, comorbid conditions, and concomitant use of depressant medications or substances.

The findings are supported by Ritchie & Roser, (2019) who assert that physical reliance on and abuse of prescription medications is a major public health issue around the world. Prescription drug misuse is thought to be the cause of many deaths. In addition to causing death, substance misuse causes severe morbidity, and drug addiction places a significant financial strain on society. Negative health consequences, such as those caused by prescription medication dependence and misuse, can be avoided by reducing risk factors and improving protective variables. As a result, screening students for risk and providing education, for those at elevated risk may be effective at reducing serious toxicity of prescription drugs (Tariq et al., 2022).

The study also noted that creating awareness does not always bear fruit. According to Bovin and Griffin (2007), several critical aspects must be present in preventative programs for them to be effective. The need to address multiple risks and protective factors, provide developmentally appropriate information relative to the target age group, include material to help young people recognize and resist pressures to engage in drug use, include comprehensive personal and social skills training to build resistance, deliver information through interactive methods and cultural sensitivity that includes relevant language and audiovisual content familiar to the target age group are some of these factors. All of these traits should be included in successful preventative programs, which can then be delivered through the family, school, community, or healthcare community.

#### 4.6 Awareness of Morbidity Risk of Abuse of Prescription Drugs and Psychosocial Wellness

The study sought to evaluate the relationship between awareness of morbidity risk and psychosocial wellness of students in public secondary schools in Nairobi County, Kenya. This section starts by presenting findings from psychometric scale statements, open-ended questions as well as interviews.

To begin with, respondents agreed to a great extent ( $M=4$ ) that consumption of prescription drugs could lead to sudden heart attack and death. The findings were presented in Table 6. These findings agree with Ritchie and Roser, (2019) who show that the use of prescription drugs can have a lot of physical health illness as well as death among users. The high awareness of this risk could affect substance use behaviours among substance users.

**Table 6**

*Consumption of Prescription Drugs Could Lead To Sudden Heart Attack and Death*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Consumption of prescription drugs could lead to sudden heart attack and death	4	4	1.21	0.78

N=100 (students); N=77(teachers)

The respondents went on agree to a great extent that continued consumption of prescription drugs could lead to massive organ failure and terminal illnesses ( $M=4$ ) as shown in Table 7. Prommer (2020) also underlines this risk among substance users. The higher level of awareness of this risk could influence prescription substance user among students.

**Table 7**

*Continued Consumption of Prescription Drugs Can Lead to Massive Organ Failure and Terminal Illnesses*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Continued consumption of prescription drugs can lead to massive organ failure and terminal illnesses	4	4	1.00	0.67

N=100 (students); N=77(teachers)

The respondents further opined that continued consumption of prescription drugs could make one dizzy vulnerable to road accidents and other life-threatening hazards (M=4). These findings were presented in Table 32. Gjerde et al. (2011) in “Toxicological investigations of drivers killed in road traffic accidents in Norway during 2006-2008” shows that substance use was linked with dizziness and could lead to accidents and fatalities. The high level of awareness of this risk could influence substance use among students hence affecting their tendency to use prescription drugs.

**Table 8***Continued Consumption of Prescription Drugs Could Make One Dizzy*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Continued consumption of prescription drugs could make one dizzy vulnerable to road accidents and other life-threatening hazards	4	4	1.00	0.68

N=100 (students); N=77(teachers)

In addition, the respondents agreed to a great extent that abuse of prescription drugs could lead to drug intolerance leading to death from simple illnesses (M=4) as presented in Table 9. This was a condition identified by Alomar (2014) in “Factors affecting the development of adverse drug reactions.” High awareness of this risk was identified in this study which could affect substance use among students.

**Table 9***Abuse of Prescription Drugs Could Lead to Drug Intolerance Leading to Death from Simple Illnesses*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Abuse of prescription drugs could lead to drug intolerance leading to death from simple illnesses	4	4	1.12	0.76

N=100 (students); N=77(teachers)

The respondents as presented in Table 10 went on to agree to a great extent (M=4) that abuse of prescription drugs could make one faint and vulnerable to attacks by bandits/wild animals at night. This also agrees with Gjerde et al. (2011) who associated the risks of passing out when drunk and accidents. The findings of this current study show high awareness of this risk.

**Table 10***Abuse of Prescription Drugs Could Make One Faint and Vulnerable to Attacks by Bandits/Wild Animals at Night*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Abuse of prescription drugs could make one faint and vulnerable to attacks by bandits/wild animals at night	4	4	1.22	0.84

N=100 (students); N=77(teachers)

As shown in Table 11, the respondents further agreed to a great extent (M=4) that prescription drugs could make one develop suicidal tendencies. Guo et al. (2016) sought to examine the longitudinal relationships between nonmedical use of prescription drugs (NMUPD), suicidal thoughts and attempts, and depression. The study found that suicide is linked to NMUP. It is thus evident that there was high awareness of this risk which could affect the use of prescription substances among students in Nairobi County.

**Table 11***Prescription Drugs Could Make One Develop Suicidal Tendencies*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Prescription drugs could make one develop suicidal tendencies	4	4	1.14	0.77

N=100 (students); N=77(teachers)

The principals and MOE officials also pointed out to high levels of awareness of morbidity risks of prescription drugs. One of them said that:

Prescription drug usage, unfortunately, can change a person's brain structure and function, leading to long-term psychological impacts like sadness, anxiety, and panic disorders. An unintentional prescription offers a major risk to an individual because of the inherent risk of morbidity and addiction (Respondent E, Nairobi County, May 2022).

In fact, the findings show that overdose deaths from opioids, for example, had increased which corroborates the findings by Jeffrey et al. (2019). The respondents thus stressed the need for continuing to underline the gravity of prescription drugs among students. This was affirmed by words of one of the MOE official who said:

The rate of prescription-related overdose deaths is significant and a variety of patient- and medication-related risk factors have been identified, which could serve as a foundation for risk reduction methods among students (Respondent G, Nairobi County, May 2022).

Abuse of prescription drugs, unfortunately, can change a person's brain structure and function, leading to long-term psychological impacts like sadness, anxiety, and panic disorder as pointed out by Compton and Volkow (2006). An unintentional prescription offers a major risk to an individual because of the inherent risk of morbidity and addiction; a problem identified by Calcaterra, et al. (2013) and Huang et al. (2006) among others.

There are various biophysical mechanisms through which drug use might increase risk of mortality from other causes such as circulatory, respiratory, and digestive diseases as well as external causes that are not explicitly coded as drug-related. Drug use can have direct effects on the circulatory system. According to Walker, Pratt, Schoenborn & Druss (2017), many drugs also affect the respiratory system. Opioids, for example, are a central nervous system depressant, reducing the activity of the neurons in the brain and spinal cord, which can inhibit respiratory function by slowing breathing; chronic use of opioids can exacerbate existing respiratory conditions (e.g., emphysema, bronchitis, and asthma) and increase the risk of developing pulmonary edema.

Further analysis show that the rate of prescription-related overdose deaths is significant and a variety of patient- and medication-related risk factors have been identified, which could serve as a foundation for risk reduction methods among students. The finding is supported by Calcaterra, et al. (2013) who argued that overdose deaths from opioids climbed by about 400 percent, outnumbering deaths from heroin, cocaine, and other stimulants combined. Regrettably, Huang et al., (2006) notes that the victims are younger, and Havens, Young, & Havens (2011) points out that the problem is also widespread to rural areas.

Pearson correlation was used to test the fourth research hypothesis as shown in Table 12.

**HO: There is no statistically significant relationship between awareness of morbidity risk and psychosocial wellness of students in public secondary schools in Nairobi County, Kenya**

**Table 12***Correlation between Awareness of Morbidity Risk and Psychosocial Wellness of Students*

		Psychological Wellness Scores
Morbidity Risks Scores	Pearson Correlation	.468**
	Sig. (2-tailed)	0.000
	R <sup>2</sup>	0.22
	N	177

\*\**. Correlation is significant at the 0.01 level (2-tailed).*

Pearson correlation shows that awareness of morbidity risk ( $r=0.468$ ,  $p<0.05$ ) had a statistically significant relationships with psychosocial wellness among students. The null hypothesis was consequently rejected. As such, it is evident that awareness of the morbidity risks that prescription drugs posed affected the propensity to use such drugs. These findings agree with the study by Calcaterra, et al. (2013) that shows that abuse of substances, can lead to death and other life-threatening conditions. Irrespective of these risks, people continued abusing them.

#### 4.3 Psychosocial Wellness

The dependent variable in the study was psychosocial wellbeing. First and foremost, the respondents were asked to show their level of agreement with selected statements regarding the psychological wellness of students who abuse prescription drugs. This section presents the findings from questionnaires and interviews. To begin with, findings from psychometric scale statement were presented. As presented in Table 13, the findings show that teachers and students agreed to a great extent ( $M=4$ ) that abuse of prescription drugs could affect a student's purpose in life in line with the study by Ryff (2014, p. 10-28).

**Table 13**

*Abuse of Prescription Drugs Could Affect a Student's Purpose in Life*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Abuse of prescription drugs could affect a student's purpose in life	4	4	1.15	0.66

N=100 (students); N=77(teachers)

The respondents also agreed to a great extent ( $M=4$ ) that consumption of prescription drugs reduces a student's self-esteem as shown in Table 14. This also agrees with the study by Ryff (2014) that shows that substance use can affect user's self-esteem.

**Table 14**

*Consumption of Prescription Drugs Reduces a Student's Self-Esteem*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Consumption of prescription drugs reduces a student's self-esteem	4	4	1.27	0.61

N=100 (students); N=77(teachers)

The respondents went on agree to a great extent ( $M=4$ ) that they believed that consumption of prescription drugs affects the level of a student's self-acceptance. These findings as presented in Table 15 further agree with the study by Ryff (2014).

**Table 15**

*Consumption of Prescription Drugs and the Level of a Student's Self-Acceptance*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
I believe that consumption of prescription drugs affects the level of a student's self-acceptance	4	4	1.22	0.68

N=100 (students); N=77(teachers)

As shown in Table 16, the respondents further agreed that continued consumption of prescription drugs could reduce a student's general quality of life ( $M=4$ ). These findings agree with the study by Olsson, Runnamo, and Engfeldt (2011) which shows association between substance use and quality of life.

**Table 16***Continued Consumption of Prescription Drugs Could Reduce a Student's General Quality of Life*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Continued consumption of prescription drugs could reduce a student's general quality of life.	4	4	1.14	0.65

N=100 (students); N=77(teachers)

Furthermore, they agreed to a great extent (M=4) that consumption of prescription drugs could affect a student's emotional balance leading to anxiety and irritations as shown in Table 17. These findings corroborate the study by Lubman et al. (2008) show that regular use of volatile substances such as toluene has the same effect as other drugs of abuse and has an effect on the neurotransmitter systems in cognitive, emotional, and brain development in children and adolescents.

**Table 17***Consumption of Prescription Drugs Could Affect a Student's Emotional Balance*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Consumption of prescription drugs could affect a student's emotional balance leading to anxiety and irritations	4	4	1.20	0.69

N=100 (students); N=77(teachers)

The respondents also agreed to a great extent (M=4) and that consumption of prescription drugs could affect the way a student relates with other students in school (M=4). These findings as presented in Table 18 agree with the study by Ryff (2014, p. 10-28) that shows that use of substances can affect how one relates with others.

**Table 18***Consumption of Prescription Drugs Could Affect the Way A Student Relates With Other Students in School*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Consumption of prescription drugs could affect the way a student relates with other students in school	4	4	1.16	0.73

N=100 (students); N=77(teachers)

The respondents as presented in Table 19 also agreed that consumption of prescription drugs could affect the way a student relates with teachers in school (M=4). This further agrees with the study by Ryff (2014) that shows that use of substances affects interpersonal relationships. The ways students interacted with teachers was affected by substance use.

**Table 19***Consumption of Prescription Drugs Could Affect the Way a Student Relates With Teachers in School*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Consumption of prescription drugs could affect the way a student relates with teachers in school	4	4	1.15	0.73

N=100 (students); N=77(teachers)

The teachers and students also agreed to a great extent (M=4) that abuse of prescription drugs affects a student's relationship with parents and siblings. These findings as presented in Table 20 also support the study by Ryff (2014) as already cited.

**Table 20***Abuse of Prescription Drugs Affects a Student's Relationship with Parents and Siblings*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Abuse of prescription drugs affects a student's relationship with parents and siblings	4	4	1.39	0.64

N=100 (students); N=77(teachers)

Additionally, the respondents agreed to a high extent (M=4) that abuse of prescription drugs affects the way a student relates with others in the community which agrees with the study by Nargiso et al. (2015) who underlines the effect of substance use on interpersonal relationships. These findings were presented in Table 21.

**Table 21***Abuse of Prescription Drugs May Affect the Way a Student Relates With Others in the Community*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Abuse of prescription drugs may affect the way a student relates with others in the community	4	4	1.12	0.54

N=100 (students); N=77(teachers)

The respondents, as shown in Table 22, also agreed to agreed extent that students who abuse prescription drugs may not be active in community events (M=4). This corroborates the study by Ritchie and Roser, (2019) which shows that the performance of substance use is greatly impaired; affecting their interpersonal activities and personal drive.

**Table 22***Psychosocial Wellness*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Students who abuse prescription drugs may not be active in community events	4	4	1.23	0.70

N=100 (students); N=77(teachers)

Lastly, the students and teachers agreed to a great extent students who abuse prescription drugs may not socialize well with others in religious organizations (M=4) as presented in Table 23. In accordance with the study by

Monnat and Rigg, 2016), these findings show that stronger religious beliefs are linked with less substance use and vice versa. Students who abuse prescription substances may be less active in religious activities. Based on the foregoing findings, it is evident that abuse of prescription drugs had effect on the psychosocial wellness of students.

**Table 23**

*Students Who Abuse Prescription Drugs May Not Socialize Well With Others in Religious Organizations*

Descriptive Statistics				
Statement	Mean		Std. Dev.	
	Students	Teachers	Students	Teachers
Students who abuse prescription drugs may not socialize well with others in religious organizations	4	4	1.20	0.71

N=100 (students); N=77(teachers)

The principals and MOE officials showed that demographic, economic, and socio-cultural factors contributed to prescription drug abuse and that the effects of drug abuse affect both the individual and the society at large and include high school drop-out rate, risky sexual behaviours, indiscipline, crime, poor health, and personal hygiene as posited by Johnson et al. (2013). These findings were affirmed by one of the respondents who said:

Students who abused prescription drugs were affected in various ways. Some of them, for example, started abusing risky sexual behaviours. Some become undisciplined with some taking to crime among others (Respondent B, Nairobi County, May 2022).

Furthermore, the principals and MOE officials opined that students who had a history of abuse and stress and who were older had a higher chance of substance misuse. This went on to affect the psychosocial wellness of users in agreement with the study by Yang and Yang (2017). These findings suggest that there is a need for prevention measures among students to avert the abuse of such drugs. To this, one of the participants said:

Abuse of prescription drugs could affect the psychosocial wellness of abusers. This issue has to be addressed urgently (Respondent G, Nairobi County, May 2022).

The findings show that demographic, economic, and socio-cultural factors contributed to prescription drug abuse and that the effects of drug abuse affect both the individual and the society at large and include high school drop-out rate, risky sexual behaviours, indiscipline, crime, poor health, and personal hygiene. These findings were affirmed by Conn and Marks (2015) who opine that the interplay of interpersonal factors and socialization agents influence adolescent behaviors on prescription drugs. According to Kasundu et al. (2012) these factors contribute to drug abuse and that the effects of drug abuse affect both the individual and the society at large and include high school drop-out rate, homosexuality, prostitution, crime, poor health, and personal hygiene.

Furthermore, the study shows that students who had a history of abuse and stress and who were older had a higher chance of substance misuse. As a result, abuse of prescription drugs could affect the psychosocial wellness of abusers. According to Gray & Damian (2017) medications aimed at treating both common health problems and long-term physical and mental health needs in adolescence can have a significant effect on a young person's emotional well-being. These findings suggest that there is a need for prevention measures among students to avert the abuse of such drugs.

## V. CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Conclusion

The study sought to examine the relationship between misuse of prescription drugs morbidity risk awareness and the psychosocial wellness of students in public secondary schools in Nairobi County. It is evident that prescription drug misuse is rampant among students, posing a threat not only to the kids who abuse the medications, but also to the nation's well-being, as the youth represent the people's future. Drug usage is widespread among secondary school students in Nairobi County, in terms of the types, quantity, and frequency of use. The presence of risk and protective factors influences prescription medication addiction. Despite the fact that the students were aware of the risks associated with prescription drugs they continued abusing them. This was buttressed by Pearson correlation that showed that awareness of awareness of morbidity risk had statistically significant relationships with psychosocial

wellness among students (the dependent variable) as conceptualized in the study. In line with situated rationality theory awareness of prescription drug risks create rationalities that influence prescription drug use behaviour among students.

### 5.3 Recommendations

There is need to enhance the awareness of morbidity risk associated with prescription drug use. This can be achieved through awareness campaigns by civil society organizations, religious organizations as well as mentors and local leaders at school and community levels.

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