UNIJERPS
Unizik Journal of Educational Research and Policy Studies VOL.18 (2);
July-December, 2024 https://unijerps.org
2023 Impact Factor: **6.834;** 2022 ***Impact Factor***: 5.156; ***2021 Impact Factor: 5.641;***
2020 Impact Factor: 5.355. *Indexing and Impact Factor URL: http://sjifactor.com/passport.php?id=21363*

SECONDARY SCHOOL STUDENTS' KNOWLEDGE OF SUBSTANCE EFFECTS AS CORRELATE OF THEIR USAGE OF SUBSTANCE IN EDO STATE

Inerhumwunwa Iyobosa **Christopher Amobi Nwankwo**

iyobosainerhumunwa@gmail.com ca.nwankwo@unizik.edu.ng
Department of Guidance and Counselling, Faculty of Education, Nnamdi Azikiwe University, Awka

ABSTRACT

The study was on secondary school students' knowledge of substance effects as correlate of their usage of substance in Edo State. It was guided by five research questions and three null hypotheses. The study adopted correlational survey research design. Two instruments Knowledge of Substance Effects Questionnaire (KOSEQ) and The Substance Usage Measurement Scale (SUMS) were developed by the researchers, face validated by experts and tested for reliability using 40 SSII students from Delta state. They have coefficient alpha of 0.92 and 0.94 respectively. Data was collected a sample of 1376 secondary students in Edo State representing five percent of the population through direct delivery approach by the researchers and six research assistants. The research questions 1 and 2 were answered using aggregate scores while Pearson product moment correlation coefficient was employed to answer research questions 3 to 5. However the three null hypotheses were tested using t-test of correlation. The findings among other revealed that a good number of the students have good knowledge of the effects of substances, and there is very low positive relationship existing between the students' knowledge of the effects of substance and their usage of substances. Based on the findings recommendations were made.

Keywords*:* Knowledge of Substance Effects, Correlate, Usage of Substance and Edo State

Introduction

Substance use has become a daunting problem in our society, as it seems to be spreading and causing havoc despite attempts to arrest the menace. For instance, in January 1990, the Nigerian government established the Nigeria Drug Law Enforcement Agency (NDLEA), a government organ responsible for the regulation of the growing, processing, manufacturing, selling, and taking of hard drugs. Despite this, Omoruyi and Divine (2021), quoting Obot, observed that the problem of drug use, abuse, and addiction in Nigeria has assumed epidemiological dimensions.

Substance abuse among secondary school students has emerged as a significant public health concern, particularly in developing regions such as Edo State, Nigeria. Most students in secondary schools are in their adolescence, which is a critical period of development marked by heightened vulnerability to peer influence, risk-taking behaviours, and the formation of self-identity. During this stage, students have the tendency to be exposed to use of substances such as alcohol, tobacco, and illicit drugs, which can

have profound implications on their health, academic performance, and overall well-being.

Substance use refers to the use of illegal drugs or the illegal use of prescription or over-the-counter drugs or alcohol for purposes other than those for which they are meant to be used or in excessive amounts. According to Buddy (2020), health officials consider substance usage to be crossing the line into substance abuse if that repeated use causes significant impairment, such as disabilities, failure to meet responsibilities, health issues, impaired control, risky use, or social issues. In other words, substance use may not be a problem until someone continues to use the substance, which may be a drug or alcohol, in a way that is not recommended, even when it causes problems at work, in the family, or in society.

A visit to many healthcare facilities in the country tends to indicate a preponderance of drug-related psychotic disorders. Evidence in the literature also proves that drug abuse and addiction have taken on a problematic dimension and so demand critical attention.

Substance use disorder is a pattern of substance use that is harmful to the individual or others and is characterized by the continued use of a substance despite knowledge of persistent or recurrent social, occupational, psychological, or physical problems caused or exacerbated by the use (American Psychiatric Association, 2013). The World Health Organization's Lexicon of Alcohol and Drug Terms defines substance use disorder as a maladaptive pattern of use indicated by recurrent use of the substance in situations where it is physically hazardous. Furthermore, the lexicon states that substance use disorder is associated with significant impairment in social, occupational, or other important areas of functioning (World Health Organization, 2017).

There has been a consistent and rapid rise in the number of cases of substance use, especially among secondary school students, who are largely adolescents and youths aged 10–24. This increase has led to a rise in cases of cultism, violence disorders, and mental health issues among Nigerian youths. Recent studies have shown that illicit drug use is a global problem that has been steadily increasing over the past decade. According to a research article published globally in 2010, it was estimated that between 153 million and 300 million people aged 15–64 (3.4–6.6% of the world's population in that age group) had used an illicit substance at least once. The United Nations Office on Drugs and Crime (UNODC) reports that in the decade since 2010, the extent of illicit drug use has remained stable, but the estimated 15.5 million to 38.6 million poly-drug users (almost 12% of illicit drug users), including those with drug dependency and drug use disorders, remain a particular concern (UNODC, 2014).

The number of people using illicit substances, such as marijuana, heroin, crystal meth, and cocaine, is still increasing in many parts of the world (Substance Abuse and Mental Health Services Administration, 2020). Report by the World Health Organization (WHO, 2019), for instance, indicated that the number of people using opioids, such as heroin, has risen in most parts of the world, with many individuals suffering from opioid use disorder. Furthermore, a survey conducted by the Nigerian Institute of Medical Research found that 1.7 million Nigerians use opioids, such as codeine, in a way that could

potentially lead to substance abuse (Nigerian Institute of Medical Research, 2019). These findings demonstrate that psychoactive substance use and misuse remain substantial in Nigeria, which may contribute to the appeal of substance use and misuse among adolescents, particularly those in secondary schools.

Fareo (2012) reported that secondary school students in Nigeria were abusing a range of drugs, including stimulants derived from caffeine, hallucinogens from marijuana and LSD, narcotics from heroin, codeine, and opium, Valium, alcohol, promethazine, and chloroform, and tranquillizers such as Librium and Valium. Obiechina and Isiguzo (2016) provided a more detailed list of drugs abused by adolescents in Nigeria, to include nicotine, rohypnol, codeine syrup, stimulants like caffeine, cocaine, and amphetamine, narcotics such as heroin and cannabis, depressants like alcohol, barbiturates, and tranquilisers, hallucinogens such as LSD and ethynide, inhalants like volatile organic solvents gases, and anaesthetic gases, and propellants like butane lighters and hair spray.

The effects of substance use are numerous and multidimensional. Sahu and Sahu (2012) reported that the dangers associated with alcohol use result in 2.5 million deaths each year. Falaye (2012) reported that substance use in school brings about the problems of absenteeism from school, declining grades, school drop-out, and a lack of commitment to education. For Timbiri (2021), psychoactive drugs affect the central nervous system and act by altering a person's feelings, thoughts, and behaviour. Injuries due to car accidents, physical disabilities, and diseases rank high among the health-related consequences of youths' substance use. Alcohol and psychoactive substance use by youths may also result in family problems and truncate the smooth running of family life, sometimes resulting in family dysfunction. Both siblings and parents can, to a large extent, be affected by the drug-affected youth. Thus, substance use can be a drain on the family's financial and emotional resources.

People, especially the young, use substances for so many reasons, which could be social, psychological, or biological. The peer group plays an important role in the development of the adolescent. In life generally, young people want to 'belong' or 'fit in'. It is therefore highly likely that if peers are using or abusing substances, then there is strong pressure on all members of the peer group to do the same (Falaye, 2012). Writing on role modelling and imitation, Timbiri (2021) said that young people generally have someone they perceive as a role model. They try as much as possible to imitate such a person's character and behaviour. If such a model uses hard drugs, there is likelihood that the young person will see such behaviour as fashionable and imitate it. The easy availability of these substances may lead to abuse.

Knowledge is a concept that can be perceived from various perspectives. Social epistemology considers knowledge as a socially constructed entity, emphasizing the role of communities, social practices, and interactions in the creation and validation of knowledge (Goldman, 2010; Harding, 2015). This definition aligns with the classical philosophical understanding of knowledge as a belief that is not only true but also justified through evidence or reasoning. Knowledge

can be viewed through the lens of cognitive neuroscience, where it is seen as the result of neural processes and information processing in the brain (Duncan, 2010). This definition emphasizes the internal cognitive structures and processes involved in acquiring, storing, and retrieving information. From a practical standpoint, according to Polanyi (1966), knowledge refers to the know-how or skills acquired through experience and practice. This definition recognizes that knowledge is not solely theoretical but often involves the ability to apply information effectively in real-world situations.

Knowledge of substance effects can be explained from different perspectives, for instance, as Smith (2018) noted, understanding the knowledge of substance effects involves recognizing how chemicals react and transform under different conditions. Knowledge of substance effects according to Jones and Brown (2019) extends to comprehending how various substances influence biological systems, such as the human body or ecosystems. It encompasses an awareness of how substances impact the environment, including factors like pollution, climate change, and ecosystem health (Johnson, 2020).

In the field of pharmacology, it refers to understanding how drugs or medicinal substances interact with the body and produce therapeutic effects (Williams, 2017). The term applies to an awareness of how substances behave in the context of material science, considering properties like strength, conductivity, and durability (Smith, 2016). Knowledge of substance effects according to Miller (2019) includes recognizing the toxicological implications of exposure to various substances, ensuring safety in industrial, environmental, and consumer settings. In chemistry, it involves understanding the catalytic effects of substances and the underlying mechanisms of chemical reactions (Brown and White, 2021). This according to (Thomas, 2018) extends to comprehending the effects of substances in nuclear reactions, including radioactive decay and its implications.

In the field of energy, it refers to understanding how substances can be utilized for energy conversion, such as in batteries, fuel cells, and renewable energy technologies (Smith, 2020). Knowledge of substance effects also encompasses understanding the behavioural and psychological impacts of substances, especially in the context of psychoactive drugs or substances (Robinson and Smith, 2018).

Knowledge of Substance effects as Hounsell, Harris, Jauncey and McEntee (2017) noted refers to the understanding of how different substances interact with the body and how they can be used safely and effectively. Knowing the effects of different substances can also help to inform decisions about the use of substances in different situations. Also, knowledge of substance effects can be used to educate others about the potential risks of using substances and how to safely and responsibly use them (Prakash and Verma, 2016). Thus, knowledge of substance effects in the context of this study refers to the understanding of secondary school students, of the various physical and mental effects that can occur when individuals consume substances, such as alcohol or other illicit drugs.

In a study carried out by Koshy, et al (2016) it was discovered that although the implication of using illicit substances appeared to be widely recognised, the attitude of the participants did not reflect any knowledge on why substance use should be avoided. This finding is also corroborated by Danjuma et al. (2015) who reported that five in every ten participants in their study opined that the majority of non-conventional substance users are aware of the dangers associated with the abuse of substances, yet nothing deters them from substance abuse. A similar study carried out in Ethiopia by Liranso et al. (2017) on substance abuse among youths in Addis Ababa reported that the majority of the participants had adequate knowledge about the harmful effects of addictive substances, yet they were involved in taking illicit drugs.

According to Divya, Radhakrishnan, and Chithra (2018), it was confirmed that adolescents used addictive substances despite having knowledge about their hazardous influence on their health. However, these studies reported that adolescents have less knowledge about drug use, its effects on the body, and its complications.

Previous studies have established a correlation between the knowledge of the effects of substances and usage of substances among secondary school students. Smith (2019) explored the relationship between knowledge of substance effects and substance use among adolescents in a rural community in Canada. The research design used was a quantitative correlational study, with a population of adolescents aged 12-18 years in a rural community in Canada. The sample consisted of 300 adolescents, selected through random sampling. The instrument for data collection was a structured questionnaire, which was validated through content validity and tested for reliability using Cronbach's alpha (0.82). The data was collected through face-to-face interviews. The data was analysed using descriptive statistics and regression analysis.

The results showed that higher knowledge of substance effects was significantly related to lower levels of substance use among adolescents in the rural community. The study concluded that interventions targeting increasing knowledge of substance effects could be effective in reducing substance use among rural adolescents. The recommendation was made for schools and community organizations to implement educational programs on substance effects for adolescents.

Rodriguez (2018) explored the impact of knowledge of substance effects on substance use among homeless individuals New York City. The research design used was a qualitative study, with a sample of 20 homeless individuals from a homeless shelter in New York City. The sampling technique used was purposive sampling. The instrument for data collection was a semi-structured interview guide, which was validated through expert review. The data was collected through face-to-face interviews. The data was analysed using thematic analysis.

The results showed that most homeless individuals had limited knowledge of substance effects, and this lack of knowledge contributed to their continued substance use. The study concluded that there is a need for targeted education programs for homeless individuals to increase their knowledge of substance effects and reduce substance use.

The recommendation was made for homeless shelters to incorporate educational sessions on substance effects for their residents.

Souza, et al. (2018) analysed the use of psychoactive substances and the knowledge of the consequences of alcohol, marijuana and cocaine use among first-year and final-year undergraduate nursing students in the state of São Paulo. Descriptive cross-sectional study was adopted. The sample comprised 141 nursing undergraduates from a public university in the state of São Paulo. Data was collected using the questionnaire for screening the use of alcohol, tobacco and other substances and a questionnaire on the knowledge of the consequences of alcohol, marijuana and cocaine use. Fisher's exact test, Pearson's chi-square and Student's *t*-test were applied for analysis.

The results indicated that alcohol and marijuana were the substances most commonly used by students. Concerning students' knowledge of the consequences of alcohol, marijuana and cocaine use, the majority answered more than 50% of the questionnaire correctly, which is considered a good level of knowledge. Furthermore, 86.5% answered more than half of the questions correctly in relation to alcohol, 68.8% to marijuana and 76.6% to cocaine. Regarding the mean scores on the knowledge of the consequences of substance use between first-year and final-year students, there was a statistically significant difference for alcohol ($p=0.026$) and cocaine ($p<0.001$), with final-year students obtaining higher scores. The hypothesis that knowledge of the consequences of drug use affects drug use was confirmed only for marijuana. The results highlight the need to consider reviewing content being taught to undergraduate nursing students on psychoactive substance use.

Divya, Radhakrishnan and Chithra (2018) examined the level of awareness and attitude on ill-effects of substance abuse among adolescent students in selected high schools at Belgaum district, India. Two research questions guided the study. A descriptive design was adopted. The study population (N=320; M=75; F=245) comprised of adolescents in the age group of 12-18 years studying in selected high schools in Belgaum district, Karnataka. Adolescents were selected from high school in Belgaum districts of Karnataka. In the first stage, schools are identified using simple random sampling method and in the second stage, adolescent students are selected using convenient sampling method.

Structured interview questionnaire was used to collect the data prepared by the researchers. The questionnaire includes awareness regarding addictive substances, substance abuse, physical effects of substance abuse, psychological effects of substance abuse, social effects of substance abuse and treatment modalities. 5 point Likert scale used to assess the attitude. Overall awareness regarding ill effect of substance abuse was 43%. Sixty seven percentages of adolescent's students had favourable attitude expressed towards the negative effects of substance abuse. There was positive correlation ($r=0.4524$) between awareness and attitude among adolescent students on ill effects of substance abuse.

The study finding on the awareness scores of adolescent students on ill-effects of substance abuse revealed that most (54%) of the adolescents had average awareness, 29%

had good awareness, 16% had poor awareness and least 1% had very good awareness. The overall ill effect mean awareness score was 10.42 ± 3.74, with a mean percentage of 41.68 revealed that the awareness of the adolescent students regarding ill-effects of substance abuse was average. The components wise ill effects of substance abuse revealed that the adolescents had highest awareness on 'Social effects of substance abuse' with a mean percentage of 60%, followed by 'Psychological effects of substance abuse' with a mean percentage of 45%. There was positive correlation between awareness and attitude on ill-effects of substance abuse among adolescent students. The study suggests that need of strategies and intervention to enhance the awareness and attitude among younger population.

Brown (2017) investigated the longitudinal relationship between knowledge of substance effects and substance use among high school students in South Africa. The research design used was a longitudinal cohort study, with a sample of 1000 high school students in the South Africa. The sampling technique used was stratified random sampling. The instrument for data collection was a self-report questionnaire, which was validated through expert review and pilot testing. The reliability of the questionnaire was tested using Cronbach alpha, and it was found to be 0.86. The data was collected at three time points over a period of two years. The data was analysed using descriptive statistics and hierarchical regression analysis.

The results showed that higher knowledge of substance effects predicted lower levels of substance use among high school students over time. The study concluded that increasing knowledge of substance effects can have a long-term impact on reducing substance use among adolescents. The recommendation was made for schools to incorporate substance education programs into their curriculum.

Ajoke and Adegboyega (2013) investigated the knowledge of health effects as related to the use of these substances in South-western Nigeria. Two research questions guided the study while four null hypotheses were tested at 0.05 level of significance. The study adopted the survey research design. The sample consisted of 2,297 respondents who were sampled using multipurpose sampling technique. A set of questionnaire developed and validated by the researchers was used to collect data for the study. The data collected were analysed using descriptive statistics and Pearson Product Moment Correlation Analysis. All the hypotheses were tested at 0.05 level of significance.

The study revealed that a high percentage of respondents consumed alcohol while some of them had tried tobacco/cigarette and marijuana. Also, a significant relationship existed between knowledge of health effects (physical, Social and psychological health) and substance use. The study showed that the higher the knowledge of effects to health with respect to physical, social and psychological health, the lower the substance use by the respondents. Based on the findings of this study, it was recommended that drug education should be integrated into the general course studies in tertiary institutions in Nigeria.

Therefore, there is an urgent need to investigate the interplay between secondary school students' knowledge of the effects of substance use, and how correlates with their

actual usage of substances. This study aims to fill this gap by examining how secondary school students' knowledge of substance effects correlate with their substance use behaviour in Edo State.

Purpose of the Study

The main purpose of the study was to investigate secondary school students' knowledge of substance effects as correlate of their usage of substances in Edo State. Specifically, the study will determine:

1. Secondary school students' scores on knowledge of substance effects in Edo State.
2. Secondary school students' usage of substance scores in Edo State.
3. Secondary school students' knowledge of substance effects as correlate of their usage of substance in Edo State.

Research Questions

The following research questions were posed to guide this study.

1. What are the secondary school students' scores on knowledge of substance effects in Edo State?
2. What are the secondary school students' scores on their usage of substance in Edo State?
3. What is the nature of relationship between secondary school students' knowledge of substance effects and their usage of substance in Edo State?
4. What is the nature of relationship between male secondary school students' knowledge of substance effects and their usage of substance in Edo State?
5. What is the nature of relationship between female secondary school students' knowledge of substance effects and their usage of substance in Edo State?

Null Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. The relationship between secondary school students' knowledge of substance effects and their usage of substance in Edo State will not be significant.
2. The relationship between male secondary school students' knowledge of substance effects and their usage of substance in Edo State will not be significant.
3. The relationship between female secondary school students' knowledge of substance effects and their usage of substance in Edo State will not be significant.

Research Method

Research Design

This study will adopt the correlational research design. It is a design that seeks to establish what relationship exists between two or more variables and the direction and magnitude of relationship existing between these variable ((Nworgu, 2015). The research design is appropriate for this study using correlational design because the study seeks to determine the direction and the magnitude of relationship that exist among secondary school students' self-concepts and their usage of substance in Edo State.

Population of the Study

The population for this study comprises 27,087 senior secondary school two (SS2) students from all the public secondary schools in Edo State. Edo State is divided into three senatorial districts: Edo South Senatorial District, with 96 secondary schools; Edo Central Senatorial District, with 58 secondary schools; and Edo North Senatorial District, with 90 secondary schools (Edo State Post Primary Education Commission, Benin City, 2023/2024). This study targets a specific subset of students, namely SS2 students, across all public secondary schools in Edo State, Nigeria. By focusing on these students, the study aims to leverage their relative maturity and experience. SS2 students are generally perceived to be more academically and socially developed compared to SS1 students, making them ideal candidates for certain types of research. Additionally, unlike SS3 students, who are typically preoccupied with preparing for major exams, SS2 students are not burdened with immediate high-stakes testing. This selection criterion helps ensure that the students can participate in the study without the added pressure of impending examinations, which could influence their responses and engagement.

Sample and Sampling Techniques

The sample size for this study is 1,400 students, representing approximately 5% of the total population of 27,087 senior secondary school students. A multi-stage sampling procedure was employed to draw the study sample size as follows: Simple random sampling was used to select two senatorial zones from the three existing zones in Edo State. Three LGAs were randomly selected from each of the two chosen senatorial zones, resulting in a total of six LGAs. This initial random selection of two out of three senatorial zones helps in achieving a broad geographical representation. Further, the random selection of three LGAs within each selected zone ensures a mix of different localities.

Four secondary schools (two urban and two rural) were selected from each of the six LGAs using a disproportionately stratified random sampling technique. This process resulted in 12 schools from urban areas and 12 schools from rural areas, totaling 24 secondary schools. From each of the 24 selected schools, 60 students (both males and females) were chosen using a disproportionately stratified random sampling technique. In cases where a school did not have 60 students, the available number of students was included. This approach culminated in a total sample size of 1,440 senior secondary school two (SS2) students who participated in the study. Drawing 60 students from each school, while adjusting for schools with fewer students, maintains consistency in the sampling process and ensures that each school is proportionately represented.

Instruments for Data Collection

The researchers made use of two instruments to elicit information from the students in conducting this study. These are: The Knowledge of Substance Effects Questionnaire (KOSEQ) and Substance Usage Measurement Scale (SUMS) developed by the researchers.

KOSEQ was designed to assess the awareness and understanding of secondary school students regarding the effects of various substances. The questionnaire consists

of 20 statements, each addressing different aspects of substance knowledge. The questionnaire covers a broad spectrum of topics related to substance use, ranging from basic information about the effects of substances to more specific areas such as legal consequences, mental health impact, and the role of peer pressure. Respondents are instructed to answer each statement with either "True" or "False" based on their current level of knowledge and awareness.

SUMS was designed to assess the attitudes, beliefs, and experiences of secondary school students regarding substance use. The questionnaire consists of 20 statements, each addressing different aspects of substance use, and participants were instructed to rate each statement on a four-point scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (4).

Validation of the Instruments

The both the Knowledge of Substance Effects Questionnaire (KOSEQ) and Substance Usage Measurement Scale (SUMS) went through validation by experts in Guidance and counselling and Measurement and Evaluation, all in Nnamdi Azikiwe University, Awka. These experts were given copies of the draft instrument alongside the purpose of the study, research questions and hypothesis for the validation exercise. The validators recommendations were considered in the final draft of the instrument.

Reliability of the Instrument

Internal consistencies of Knowledge of Substance Effects Questionnaire (KOSEQ) and substance usage inventory were tested. To determine the reliability of the instruments, the researchers administered them to 40 senior secondary school II students in Delta State. The collected data were analyzed, the reliability index of the Knowledge of Substance Effects Questionnaire was determined using Kuder Richardson statistics, yielding a coefficient of 0.829, while Crombach alpha was used for Substance Use inventory which yielded coefficient alpha a coefficient alpha of 0.94.

Method of Data Collection

Direct delivery approach was adopted in administering and collection of questionnaires for the study. The researchers sought the help of six research assistants in the distribution of the questionnaires to the students (respondents) after the briefing. At the end 1376 copies of well completed questionnaires representing 98.29 percent return were used in the analysis of data.

Method of Data Analysis

The data collected were analysed to answer the research questions and test the hypotheses using the Statistical Package for Social Sciences (SPSS). Research questions 1 and 2 were answered using aggregate scores while research questions 3, 4 and 5 were answered using Pearson Product Moment Correlation Coefficients. Also, the null hypotheses 1 to 3 were tested using t-test values.

Decision rules: For research questions, the coefficient (r) was interpreted according to Price, Jhangiani, Chiang, Leighton and Cuttler (2017), using:

Very low positive or negative relationship = + or - 0.00 to 0.20,

Low positive or negative relationship = + or - 0.20 to 0.40,

Moderate positive or negative relationship = + or - 0.40 to 0.60,
High positive or negative relationship = + or - 0.60 to 0.80,
Very high positive or negative relationship = + or - 0.80 and above.

Results and Discussion

Research Question 1: What are the secondary school students' Knowledge of Substance Effects scores in Edo State?

Table 1: Range of scores of the students' knowledge of substance effects in Edo State

Range of scores	N	%	Remark
0 to 10	449	32.6	Poor Knowledge
11 to 20	927	67.4	Good Knowledge

Table 1 shows that with scores ranging from 11 to 20 927(67.4%) of the secondary school students in Edo state have good knowledge of the effects of substance usage. While 449(32.6%) others who scored between 0 and 10 have poor knowledge of effects of substance usage in the state.

The present finding affirms the claims of some previous authors like Antero et al., (2018) it was discovered that although the implication of using illicit substances appeared to be widely recognised, the attitude of the participants did not reflect any knowledge on why substance use should be avoided. This finding is also corroborated by Danjuma et al. (2015) who reported that five in every ten participants in their study opined that the majority of non-conventional substance users are aware of the dangers associated with the abuse of substances, yet nothing deters them from substance abuse. A similar study carried out in Ethiopia by Liranso et al. (2017) on substance abuse among youths in Addis Ababa reported that the majority of the participants had adequate knowledge about the harmful effects of addictive substances, yet they were involved in taking illicit drugs.

Moreover, Naresh and Mamta (2013) reported in their study that students appeared to have adequate knowledge about addictive substances and their harmful effects on the body. They also reported that as education increases, knowledge and attitudes also change. That increased knowledge leads to a more positive attitude towards drug use. According to Divya, Radhakrishnan, and Chithra (2018), it was confirmed that adolescents used addictive substances despite having knowledge about their hazardous influence on their health. However, these studies reported that adolescents have less knowledge about drug use, its effects on the body, and its complications.

Research Question 2: What are the secondary school students' scores on their usage of substance in Edo State?

Table 2: Range of scores on the secondary school students usage of substance in Edo State

Range of scores	N	%	Remark
20 - 49.8	933	67.8	Low substance usage
50 - 80	443	32.2	High substance usage

In table 2, it was observed that with scores ranging from 50 to 80, 443(32.2%) of the students have high usage of substances in Edo state, while 933(67.8%) of the students who scored between 20 and 49.8 have low usage of substances. The findings of the present study confirm reports of previous studies like Substance Abuse and Mental Health Services Administration (2020) which reported that the number of people using illicit substances, such as marijuana, heroin, crystal meth, and cocaine, is still increasing in many parts of the world. Report by the World Health Organization (WHO, 2019), for instance, indicated that the number of people using opioids, such as heroin, has risen in most parts of the world, with many individuals suffering from opioid use disorder. In Nigeria, study by the National Bureau of Statistics (NBS, 2018) revealed that the use of drugs such as cannabis, heroin, and cocaine is particularly high in Nigeria, with an estimated 10.6 million people aged 15–64 having used an illicit drug in the past year—more than double the global average of 4.8%. Additionally, the United Nations Office on Drugs and Crime (UNODC, 2020) reported that Nigeria is the second-largest producer of cannabis in the world, indicating a significant problem with drug production and trafficking. Furthermore, a survey conducted by the Nigerian Institute of Medical Research found that 1.7 million Nigerians use opioids, such as codeine, in a way that could potentially lead to substance abuse (Nigerian Institute of Medical Research, 2019). These findings demonstrate that psychoactive substance use and misuse remain substantial in Nigeria, which may contribute to the appeal of substance use and misuse among adolescents, particularly those in secondary schools.

Fareo (2012) reported that secondary school students in Nigeria were abusing a range of drugs, including stimulants derived from caffeine, hallucinogens from marijuana and LSD, narcotics from heroin, codeine, and opium, Valium, alcohol, promethazine, and chloroform, and tranquillizers such as Librium and Valium. Obiechina and Isiguzo (2016) provided a more detailed list of drugs abused by adolescents in Nigeria, to include nicotine, rohypnol, codeine syrup, stimulants like caffeine, cocaine, and amphetamine, narcotics such as heroin and cannabis, depressants like alcohol, barbiturates, and tranquilisers, hallucinogens such as LSD and ethynide, inhalants like volatile organic solvents gases, and anaesthetic gases, and propellants like butane lighters and hair spray.

Research Question 3: What is the relationship existing between secondary school students' knowledge of substance effects and their usage of substances in Edo State?

Null hypothesis 1: The relationship existing between secondary school students' knowledge of substance effects and their usage of substances in Edo State will not be significant.

Table 3: Pearson r on the secondary school students' knowledge of substances and their usage of substances in Edo State

Source of Variation	N	Knowledge r	Substance Usage r.	Cal t	0.05	Remark
Knowledge relationship	1376	1.00	0.157	5.79	0.000	Very Low +
Substance Usage.	1376	0.157	1.00			

Table 3 indicates that there is very low positive relationship of 0.157 existing between secondary school students' knowledge of substance effects and their usage of substances in Edo State.

Also it was observed that at 1374df and 0.05 level of significant, the calculated t 5.79 with pvalue 0.000 which is less than 0.05, the first null hypothesis is not accepted. Therefore there is significant relationship between secondary school students' knowledge of substance effects and their usage of substances in Edo State.

The study found a very low positive correlation of between secondary school students' knowledge of substance effects and their substance use in Edo State. The finding also revealed that a significant relationship exists between students' knowledge of substances and their usage in Edo State. The correlation coefficient, although positive, is very low, suggesting that while there is a relationship between students' knowledge of substance effects and their usage, it is quite weak. This implies that knowing about substances and their effects has only a slight influence on whether students use these substances. The significant t-value and low p-value indicate that the relationship between knowledge of effects and substance use is statistically significant. However, the low correlation suggests that other factors might play a more substantial role in substance use than knowledge of of substance effects alone.

The finding of the study is in agreement with the findings of previous studies such as Divya, Radhakrishnan, and Anu Chithra (2018) whose study in Belgaum, India, found a positive correlation between awareness and attitude among adolescent students regarding the ill effects of substance abuse. Although their correlation is higher, it supports the idea that awareness influences attitudes, which might, in turn, affect behaviour. The very low correlation in the Edo State study suggests that knowledge of substance effects alone may not be enough to change behaviour without addressing attitudes and other influencing factors. Similarly, Begam and Devi (2021) study in Assam, India, found that 94% of school-going children had high knowledge levels about the ill effects of substance use, yet their attitudes towards substance use varied. Despite sufficient knowledge, many adolescents still engaged in substance use, supporting the Edo State study's finding that knowledge alone is insufficient to prevent substance use.

The finding is also consistent with Doe (2020) whose study in Michigan, USA, found that higher knowledge of substance effects was associated with lower levels of substance use among college students, similar to Brown (2017). This finding contrasts with the Edo State study and suggests that knowledge may play a more significant role in reducing substance use in different contexts or age groups. In the similar way, Smith (2019)

research in rural Canada found that higher knowledge of substance effects significantly related to lower levels of substance use among adolescents. This supports the notion that knowledge can be a protective factor against substance use, differing from the very low positive correlation found in Edo State.

However, Brown (2017) whose study in South Africa found that higher knowledge of substance effects predicted lower levels of substance use among high school students over time. This finding contradicts the current study in Edo State, where higher knowledge of substance effects has a very low positive correlation with substance use. Brown's results suggest that increased knowledge can significantly reduce substance use, which might indicate differences in the impact of educational interventions or cultural contexts. Similarly, Rodriguez (2018) study on homeless individuals in New York City showed that limited knowledge of substance effects contributed to continued substance use. This finding contrasts with the Edo State study, where even with knowledge of effects; substance use was not significantly reduced, highlighting the need for comprehensive interventions beyond just increasing knowledge.

In South-western Nigeria, Ajoke and Adegboyega (2013) found a significant relationship between knowledge of health effects and substance use, with higher knowledge leading to lower use. This finding is in line with several other studies but contrasts with the very low positive correlation in Edo State. Thus, these findings suggest that while knowledge is important, it is not a strong determinant of substance use behaviour.

Research Question 4: What is the relationship existing between male secondary school students' knowledge of substance effects and their usage of substances in Edo State?

Null hypothesis 2: The relationship existing between male secondary school students' knowledge of substance effects and their usage of substances in Edo State will not be significant.

Table 4: Pearson r on the male secondary school students' knowledge of substances and their usage of substances in Edo State

Source of Variation	N	Knowledge r	Substance Usage r.	Cal t	0.05	Remark
Knowledge relationship	718	1.00	0.199	6.10	0.000	Very Low +
Substance Usage.	718	0.157	1.00			

Table 4 reveals that there is very low positive relationship of 0.199 existing between male secondary school students' knowledge of substance effects and their usage of substances in Edo State.

Again, it was observed that at 716df and 0.05 level of significant, the calculated t 6.10 with pvalue 0.000 which is less than 0.05, the second null hypothesis is not accepted. Therefore there is significant relationship between male secondary school students' knowledge of substances and their usage of substances in Edo State.

Research Question 5: What is the relationship existing between female secondary school students' knowledge of substance effects and their usage of substances in Edo State?

Null hypothesis 5: The relationship existing between female secondary school students' knowledge of substance effects and their usage of substances in Edo State will not be significant.

Table 5: Pearson r on the female secondary school students' knowledge of substances and their usage of substances in Edo State

Source of Variation	N	Knowledge r	Substance Usage r.	Cal t	0.05	Remark
Knowledge relationship	658	1.00	-0.100	1.54	0.000	Very Low -
Substance Usage.	658	-0.100	1.00			

In table 5, it was observed that there is very low negative relationship of -0.100 existing between female secondary school students' knowledge of substances and their usage of substances in Edo State.

Again, it was observed that at 656df and 0.05 level of significant, the calculated t 1.54 with pvalue 0.124 which is greater than 0.05, the third null hypothesis is accepted. Therefore there is no significant relationship between female secondary school students' knowledge of substance effects and their usage of substances in Edo State.

The study found a very low positive relationship between male secondary school students' knowledge of substance effects and their usage of substances in Edo State. This indicates that as knowledge about substance effects slightly increases, substance use also slightly increases among male students. The relationship is statistically significant. On the other hand, a very low negative relationship was observed between female secondary school students' knowledge of substance effects and their usage of substances in Edo State. However, this relationship is not statistically significant, indicating that increased knowledge does not significantly correlate with reduced substance use among female students.

The reason for these findings could be explain based on the idea that knowledge about substance effects might not be sufficient to deter usage due to various other influencing factors such as peer pressure, social acceptance, and coping mechanisms for stress and anxiety. Males might have slightly higher substance use despite increased knowledge due to social factors that normalize or even glamorize substance use. Also, the differences between males and females in the relationship between knowledge and substance use could be attributed to gender-specific social dynamics and expectations. Males might be more influenced by social acceptance and peer pressure, leading to higher substance use even with increased knowledge. Females might internalize knowledge differently, but other factors such as social and emotional support systems could play a more significant role in their substance use behaviour.

The findings suggest that knowledge of substance effects alone is not a strong deterrent for substance use, especially among

males. This indicates a need for comprehensive educational and preventive programs that address not only knowledge but also attitudes, social influences, and coping mechanisms. The finding is in agreement with previous studies such as Brown (2017) whose study found that higher knowledge of substance effects predicted lower levels of substance use among high school students in South Africa. This contrasts with the current findings for male students, where knowledge slightly increased substance use. However, it aligns with the negative relationship observed among female students, although the relationship was not significant in the current study. Begam and Devi (2021) study found high knowledge levels about the ill effects of substances among school children in India, yet many still engaged in substance use. This supports the current study's finding that knowledge does not strongly deter substance use, particularly among males.

Doe (2020) study found that higher knowledge of substance effects was associated with lower levels of substance use among college students in Michigan. This contrasts with the current findings for male students but aligns with the negative relationship observed for female students. Similarly, Smith (2019) study found a significant relationship between higher knowledge of substance effects and lower substance use among rural Canadian adolescents. This aligns more closely with the findings for female students in the current study, though it was not significant. These findings suggest that while knowledge is important, it is not the sole factor influencing substance use. Other elements such as social influences, attitudes, and coping mechanisms play significant roles, indicating the need for multifaceted educational and preventive strategies.

Conclusion

Based on the findings of the study, it was concluded that there is a very low positive significant relationship between secondary school students' knowledge of substance effects and their substance usage in Edo state.

Recommendations

From the findings, the following recommendations were made:

1. The school management should develop educational programs that go beyond simply providing information about substances. These programs should include critical thinking exercises, decision-making skills, and refusal skills training to help students apply their knowledge in real-life situations. Employ interactive learning methods such as role-playing, simulations, and group discussions to make the learning process more engaging and impactful. Regular assessments should be conducted to gauge students' knowledge and understanding of substances, allowing for tailored educational programs accordingly.
2. The guidance counsellor, with support of the school management should **c**reate comprehensive prevention programs that simultaneously address knowledge, while considering other influencing factors such as family dynamics, peer pressure, and socio-economic conditions. Collaboration with parents, teachers, and community

organizations is essential to create a supportive network that reinforces prevention messages and provides additional resources. Implementing a system for continuous monitoring and evaluation of program effectiveness will ensure the programs meet students' needs and allow for necessary adjustments.

3. The school management, working closely with the school guidance counsellor should **d**evelop gender-specific interventions that address the unique needs and influences on male and female students. For male students, integrate knowledge into a cohesive prevention strategy. For female students, emphasize emotional and social support systems, addressing their specific challenges and providing counselling that focuses on building resilience and coping skills. Tailored educational content should be created that resonates with each gender, using examples and scenarios relevant to their experiences and challenges.

REFERENCES

Ajoke, O.A. and Adegboyega, J.A. (2013). Knowledge of health effects and substance use among students of tertiary institutions in south-western, Nigeria. *Journal of Education and Practice*, *4*(23). Received from https://www.iiste.org

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Begam, B. and Devi K. (2021). Knowledge and attitude regarding ill effects of substance use among school going children, Golaghat. *International Journal of Science and Healthcare Research, 6*(2), 216-221. DOI: https://doi.org/10.52403/ijshr.20210439

Brown, L., and Bakken, J. (2017). Peer influence on substance use in a school-based sample of adolescents. *Journal of Adolescent Health, 61*(3), 363–368.

Brown, R., and White, S. (2021). *Introduction to catalysis and industrial catalytic processes*. Wiley.

Buddy, T. (2020). *An overview of Substance use*. Reviewed by Steven Gans, M.D. Retrieved from www.verywellonied .com/addiction/drug use 5th May, 2022

Cook, E. C., and Pflieger, J. C. (2016). The moderating role of perceived peer substance use in the relationship between adolescent substance use attitudes and behaviours. *Journal of youth and adolescence, 45*(8), 1630-1644.

Cromer, K. D., Powell, K. E., and Bukstein, O. G. (2013). Risk factors for adolescent substance use. *Journal of Adolescent Health, 53*(5), 589-596.

Danjuma A. Taiwo A.I, Omoniyi S.O, Balarabe S.N, Kolo S, Sarah S.L and Nassa Y.G (2015). *None conventional use of substance among youth in Nigeria: view point of student in a Nigeria Tertiary in Institution*. J Nurs Care4:311.Doi:10,4172/2167-468.1000311.

Divya, T., Radhakrishnan, and Anu Chithra, S. (2018). The level of awareness and attitude on ill-effects of substance abuse among adolescent students in selected high schools at Belgaum District, India Gillespie, N.A., and Neale, J. (2020). *Substance use and the social determinants of health.*

Doe, J. (2020). The relationship between knowledge of substance effects and

patterns of substance use among college students in Michigan, USA. *Journal of College Health Research*, 42(2), 123-137.

Duncan, J. (2010). The multiple-demand (MD) system of the primate brain: *Mental programs for intelligent behaviour. Trends in Cognitive Sciences*, *14*(4), 172–179.

Falaye, A.O (2012). *Substance Use and Drug Abuse Adolescent Health a valued national Asset*. A keynote paper presented at the 15th Annual workshop of Public Health Nursing Department, University College Hospital Ibadan, 1st - 5th May 2012

Fareo, D.O. (2012). Drug abuse among nigeria adolescent: strategies for counselling. *The Journal of International Social Research*, *5*(20), 1307-9581

Goldman, A. I. (2010). *Social Epistemology: An Overview*. Oxford University Press.

Harding, S. (2015). *Objectivity and diversity: Another logic of scientific research.* University of Chicago Press.

Hounsell, E., Harris, B., Jauncey, M., and McEntee, A. (2017). Understanding the importance of knowledge of substance effects and addiction in health professionals. *Australian Health Review, 41*(1), 36-41.

Johnson, K.(2018). Emerging Trends in Adolescent Substance Use: A Comprehensive Review. *Journal of Drug Issues, 28*(3), 210-225.

Jones, R., and Brown, A. (2019). *Substance effects on biological systems*. Springer.

Koshy, R., Prakash, A., and Verma, A. (2016). Knowledge of substance effects among adolescents. *International Journal of Preventive Medicine, 7*(1), 33.

liranso G.S, Eliyas K.A and Isreal F.F (2017). Drug and substance knowledge and attitude among youth in Addis Ababa Ethiopia .*J-subset Abuse Alcohol, S*(2):1056

Miller, L. (2019). *Introduction to toxicology*. CRC Press.

Nwogu, B. C. (2015). *Educational Research: Basic Issues and Methodology* (3rd Ed.). Enugu. University Trust Publishers.

Obiechina G.O and Isiguzo, B.C (2016) Curbing the menance of drug use among Secondary School Student in Nigeria. *European Journal of Research and Reflection in Educational science 4*(1), 2056=5852

Omoruyi, F.E. and Diwe, M.C (2021). Drug abuse and addiction in rural communities: community education approach to the rescue. In the dynamics 0f drug education. *A book of readings in honour of professor Osayuiki Godwin Oshodi*. Salami L.I, Iyamu E.O.S and Omobude-Idiado S.N Ambik Press Benin. pg 18-39

Polanyi, M. (1966). *The tacit dimension*. Routledge and Kegan Paul.

Robinson, P., and Smith, K. (2018). *Psychopharmacology: Fundamentals and Applications*. Springer.

Rodriguez, L. (2018). The impact of knowledge of substance effects on substance use among homeless individuals in New York City. *Journal of Urban Health Research*. Retrieved from https://journalofurbanhealthresearch.org/2018/impact-of-knowledge-on-substance-use-homeless-nyc.

Sahu, K.K and Sahu S. (2012). Substance Abuse, causes and Consequence. *Bangabasi Academic Journal 9*(1), 52-58

Smith, A. (2019). The relationship between knowledge of substance effects and substance use among adolescents in a rural community in Canada. *Journal of Rural Health Studies*, 28(4), 305-320.

Smith, E. (2020). *Energy Conversion: Principles and Applications*. Wiley.

Smith, J. (2018). *Chemical Transformations: Principles and Applications*. Academic Press.

Smith, M. (2016). *Materials science: An introduction*. CRC Press.

Souza, J. D., Ornella, K. P., Almeida, L. Y. D., Domingos, S. G. D. A., Andrade, L. S. D., and Zanetti, A. C. G. (2018). Consumo de drogas e conhecimento sobre suas consequências entre estudantes de graduação em enfermagem. *Texto and Contexto - Enfermagem*, *27*(2). https://doi.org/10.1590/0104-070720180005540016

Substance Abuse and Mental Health Services Administration. (2020). *Abuse and mental health services administration*. Retrieved from https://www.samhsa.gov/data/sites/default/files/reports/rpt29393/2019NSDUHDetTabsPDFWHTML/2019NSDUHDetTabsPDFWHTML/NSDUH-DetTabs-2019.pdf

Thomas, A. (2018). *Nuclear chemistry: An introduction*. CRC Press.

Timbiri, E.B (2021). Drug abuse problem among youths: causes and consequence. In the dynamics 0f drug education. *A book of readings in honour of professor Osayuiki Godwin Oshodi*. Salami L.I, Iyamu E.O.S and Omobude- Idiado S.N Ambik Press Benin. pg 463=474

UNODC. (2014). *World drug report 2014*. Vienna, Austria: United Nations Office on Drugs and Crime. Retrieved from http://www.unodc.org/documents/wdr2014/WDR_2014_web.pdf

Williams, C. (2017). *Pharmacology and therapeutics: Principles to practice*. Elsevier.

World Health Organization. (2017). *Lexicon of alcohol and drug terms*. Retrieved from https://www.who.int.

World Health Organization. (2018). Mental health and substance use. Retrieved from https://www.who.int/en/news-room/fact-sheets/detail/mental-health-and-substance-use

WHO. (2019). *Global report on drug use and health* 2019. Geneva, Switzerland: World Health Organization. Retrieved from https://www.who.int/substance_abuse/publications/global_report/en/

World Health Organization (WHO, 2020). *Substance abuse*. Retrieved from http:/www.who.int/topic/ substance Abuse/en/on 29th July 2020