

The Knowledge and Attitude towards the Use of Substance Abuse among Secondary School Students in Juba, South Sudan

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Abstract

Substance use among secondary students is an important public health concern, yet evidence from South Sudan remains limited. This study examined secondary school students' knowledge and attitudes toward substance abuse, and perceived factors influencing substance use in Juba, South Sudan. A cross-sectional survey was conducted in February 2025 among 430 students enrolled in Senior Two to Senior Four classes in eight public secondary schools. Schools and students were selected through random-sampling procedures. Data were collected using a structured, self-administered questionnaire that assessed socio-demographic characteristics, perceived knowledge, attitudes, and perceived contributing factors. Descriptive statistics were analyzed using Microsoft Excel and presented in tables, figures, and pie charts. The mean age of participants was 19 years, with most respondents aged 17 - 25 years. Of the 430 respondents, 301 (70.0%) reported having limited knowledge of substance abuse. The majority agreed or strongly agreed that peer pressure may contribute to substance use (277, 64.4%), that substance abuse constitutes a criminal offense (273, 63.5%), that inadequate family support may contribute to substance use (328, 76.3%), and that mental health challenges may also be contributing factors (318, 74.0%). The analysis was descriptive and therefore reflects the perceptions and self-reported responses of students from the eight participating schools.

Keywords

Substance Abuse, Secondary School Students, Knowledge, Attitude

1. Introduction

Substance abuse, as defined by the World Health Organization [1], refers to the harmful or hazardous use of psychoactive substances, including both alcohol and

illicit drugs. In Juba, South Sudan, substance abuse among secondary school students represents a significant public health concern. This escalating problem threatens students' health and safety and also undermines academic performance and future career opportunities. Consequences for young people can be particularly severe and may include an increased risk of engaging in risky sexual behaviors, development of personality disorders, and exposure to sexual violence, criminal tendencies, and difficulties with academic achievement, mental health-related problems, and progression to drug dependence.

Globally, the burden of substance abuse is alarming. The WHO (2014) reports that harmful alcohol use leads to approximately 3.3 million deaths annually and that at least 15.3 million people experience drug use disorders. Additionally, a report by the United Nations Office on Drugs and Crime (UNODC) on World Drugs highlights that, in 2021, approximately 1 in every 17 individuals aged 15 - 64 worldwide reported drug use in the past year, with the estimated number of drug users rising from 240 million in 2011 to 296 million in 2021, representing about 5.8% of the global population within this age group.

Cannabis remains the most widely used psychoactive substance, with an estimated 219 million users globally in 2021, accounting for 4.3% of the adult population. Notably, the demographic profile of cannabis users is changing: although men comprise about 70% of users, the gender gap is narrowing in some regions. For example, women account for 42% of cannabis users in North America.

Importantly, the prevalence of psychoactive substance use among school-going adolescents is often higher than in the general population. The UNODC World Drug Report indicates that approximately 5.3% of 15 - 16-year-olds globally (about 13.5 million individuals) reported using cannabis in 2021. Despite global evidence on substance abuse, South Sudan, a fragile state, remains underrepresented in the literature; this gap motivates the present research. Evidence from other regions underscores the relevance of this issue for young people. For instance, the European School Survey Project on Alcohol and Other Drugs (ESPAD) reported that in 2019, about 73% of 15 - 16-year-old students had consumed alcohol at least once in their lifetime, and 45% reported use in the past 30 days [2].

Furthermore, evidence indicates a consistent association between substance use and poor mental health among adolescents. A systematic review and meta-analysis by Esmaeelzadeh *et al.* (2018) found that depression and anxiety were significantly associated with substance use among adolescents and young adults in the United States and Canada [3]. In addition, Bugbee *et al.* (2019) reported a strong association between substance abuse and poor academic performance, including declines in grades and school attendance [4]. Broader treatment-seeking patterns also suggest youth vulnerability: in South America, more than half of individuals seeking drug treatment are under 25 years old, and in Africa, 70% are under 35 years old. Specifically, for Juba, South Sudan, a WHO study (2020) reported that approximately 25% of youth had engaged in substance use by the end of secondary school [5].

Social dynamics and peer influence play a critical role in shaping students' atti-

tudes toward substance use. Adolescents may select friends who share similar attitudes and behaviors and may subsequently adopt or reinforce the substance-use behaviors and norms of their peer group. A systematic review by Mathys *et al.* (2020) found that both peer selection and peer socialization contribute to alcohol and tobacco use among adolescents [6]. Similarly, a meta-analysis by Watts *et al.* (2024) reported a significant overall association between peer influence and adolescent substance use, suggesting that adolescents may modify their substance-use behaviors in response to their friends' actual or perceived substance use [7].

Students' attitudes and perceptions may further influence their substance-use behaviors. Griffin and Botvin (2010) observed that adolescents may overestimate the number of their peers who use alcohol, tobacco, or other drugs. Such misperceptions can make substance use appear normal or socially acceptable, reduce perceived risk, and increase the likelihood of experimentation [8]. Prevention programs should therefore incorporate normative education that corrects inaccurate beliefs about peer substance use while strengthening students' capacity to make informed, independent, and health-promoting decisions.

Studies among school-going adolescents have also identified substantial gaps in knowledge of substance use and prevention. Nurmala *et al.* (2021) reported that more than half of the high-school students in their study had inadequate knowledge of drugs and drug-prevention strategies [9]. Although students may be aware of common substances, such as alcohol and marijuana, they may lack detailed information about long-term consequences and legal implications. These knowledge deficits may hinder informed decision-making and increase the likelihood of experimentation and subsequent abuse. Therefore, this study aims to examine knowledge and attitudes toward substance abuse among secondary school students in Juba, South Sudan, and to explore the underlying factors contributing to substance use.

2. Data and Methodology

The study was conducted among secondary school students in Juba, South Sudan. We selected 20 out of 36 public secondary schools in Juba, South Sudan, using a random sampling method. Each school was listed on paper, rolled, and randomly picked. Each school was assigned a unique identification number from 1 to 20 using a list of eligible schools obtained from the relevant education authorities. Of the 20 selected schools, eight agreed to participate, whereas 12 did not participate. The study records did not document standardized reasons for non-participation; therefore, specific reasons for refusal could not be reported. Within each participating school, the school administration assisted in identifying eligible students enrolled in Senior Two, Senior Three, and Senior Four. Approximately 53 students were selected from each school; however, one school contributed 59 students because of the availability of eligible students and school-level arrangements during data collection. Overall, 430 students from eight public secondary schools, including boys' and girls' schools, completed the survey. The non-participation of 12 selected schools may have introduced selection bias, as participating schools

may have differed from non-participating schools in characteristics such as administrative support, student enrollment, socioeconomic composition, and availability of health-education activities. Therefore, the findings should be interpreted as representing students in the eight participating schools and may not be generalizable to all public secondary school students in Juba.

2.1. Participant Selection

Within each participating school, students enrolled in Senior Two, Senior Three, and Senior Four were eligible to participate. School administrations assisted in preparing lists of eligible students by class level. Each eligible student was assigned a sequential identification number, and participants were selected using a simple random-sampling procedure. Approximately 53 students were selected from each school. In one school, 59 students participated because of the availability of eligible students and school-level arrangements during data collection. A total of 430 students from the 8 participating secondary schools completed the survey. This sample provided representation across the selected senior secondary levels and formed the basis for analysis of students' knowledge, attitudes, and perceived factors contributing to the use of substances. In addition, no formal a priori sample-size calculation was conducted. The final sample size reflected the number of students selected and available in the participating schools.

2.2. Data Collection Methods and Survey Instrument

Data were collected in February 2025 using a structured, self-administered questionnaire. The questionnaire collected information on participants' socio-demographic characteristics, knowledge of substance abuse, attitudes toward substance use, and factors perceived to lead to substance use among secondary school students. Before data collection, three University of Juba students were trained in the study objectives, ethical procedures, questionnaire administration, confidentiality, and management of participant questions. The trained research assistants administered the questionnaires in designated school halls. They explained the purpose of the study, provided instructions for completing the questionnaire, and remained available to clarify questions without influencing participants' responses. Completed questionnaires were checked for completeness before data entry. Data were entered into Microsoft Excel and analyzed using descriptive statistics. The findings were presented as frequencies and percentages in tables, figures, and pie charts. No inferential statistical tests were conducted; therefore, the study did not assess associations, predictors, or causal relationships.

2.3. Ethical Considerations

Ethical approval was obtained from the National Ministry of General Education and Instruction and the Central Equatoria State Ministry of Education and Instruction in Juba. Permission to conduct the study was also obtained from the authorities of all participating secondary schools.

Participation was voluntary. Before questionnaire administration, the research team explained the purpose, procedures, potential benefits, and voluntary nature of the study to all eligible students and informed them that they could decline to answer any question or withdraw from the study. Verbal consent was obtained from participants before their inclusion in the study. For participants younger than 18 years, student assent was obtained. Parental or guardian consent was not obtained; this is an ethical limitation that should be acknowledged. No personal identifiers were collected. Participants could withdraw at any stage without penalty. The data were securely stored and accessible only to the principal investigator.

2.4. Measures

Perceived Knowledge of Substance Abuse: Perceived knowledge of substance abuse was assessed using a self-administered questionnaire containing yes/no and multiple-choice questions. These items evaluated participants' knowledge and awareness of substance use and substance-related risks.

Perceived Attitudes toward Substance Abuse: A questionnaire was administered to assess students' attitudes toward substance abuse and their understanding of the legal implications of substance use. The items included questions on peer pressure and students' perceptions of substance abuse as a criminal offense. Responses were measured on a five-point Likert scale: strongly agree, agree, neutral, disagree, and strongly disagree.

Substance Use: Substance use was assessed using a self-reported Substance Use Inventory. Participants reported the frequency with which they used various substances, including alcohol, methamphetamine (ice, locally known as telich in Juba Arabic), nicotine/cigarettes/cannabis/marijuana, cocaine, and morphine. The response categories included never, rarely, sometimes, often, and always.

The questionnaire also included contextual questions to determine where and under what circumstances substances were used, such as at home, during parties, or before sports activities. These questions were intended to provide a better understanding of the contexts in which substance use occurs.

Factors Influencing Substance Abuse: The survey also assessed perceived factors influencing substance abuse, including family support and mental health challenges. Participants indicated their level of agreement with statements related to these factors using the same five-point Likert scale: strongly agree, agree, neutral, disagree, and strongly disagree.

2.5. Limitations of the Study

The sample of 430 students may not fully represent the entire secondary school student population in Juba, thereby limiting the generalizability of the findings. Furthermore, the use of self-reported data may have introduced response bias, as students could have underreported or overstated their knowledge, attitudes, or experiences related to substance abuse. Responses may also have been influenced by perceived social norms, particularly regarding the view of substance abuse as

criminal behavior. This may have affected the extent to which respondents provided open and accurate responses.

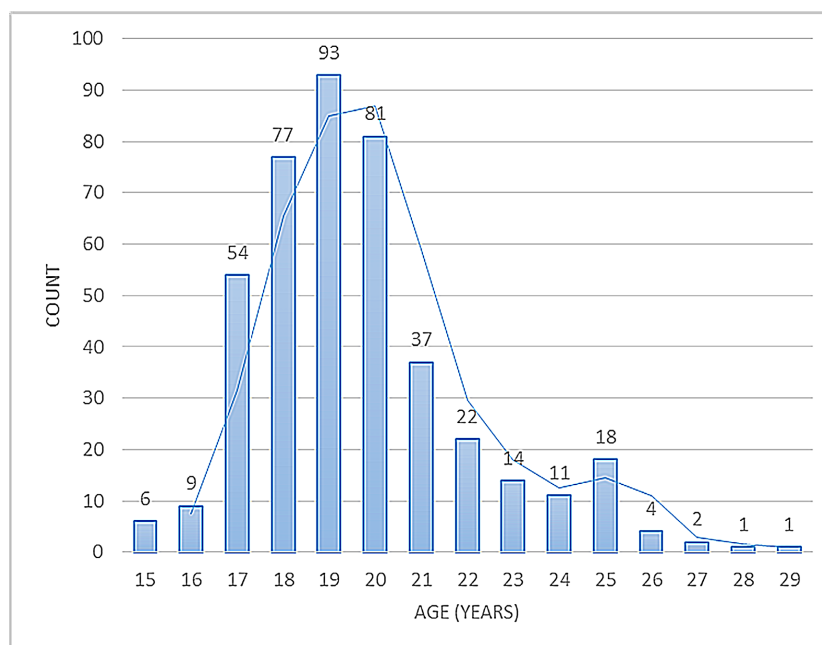
Finally, the unique cultural and socioeconomic context of Juba may limit the applicability of the findings to other regions. Therefore, the results should be interpreted cautiously when applied beyond the study setting. Future studies should address these limitations by using larger and more diverse samples, incorporating multiple data-collection methods, and examining substance abuse across different geographical and cultural contexts.

3. Results

This section presents the findings of the study based on a survey of 430 students. Figures, pie charts, and tables are used to illustrate the key findings and trends. The results cover students' knowledge of substance abuse in relation to their socio-demographic characteristics, attitudes toward substance use, commonly used substances, and perceived factors influencing substance use.

3.1. Perceived Students' Knowledge of Substance Abuse in Relation to Demographic Characteristics

The respondents had a mean age of 19 years, with ages ranging from 15 to 29 years, as shown in **Figure 1**. A substantial proportion of the respondents were aged between 17 and 25 years.



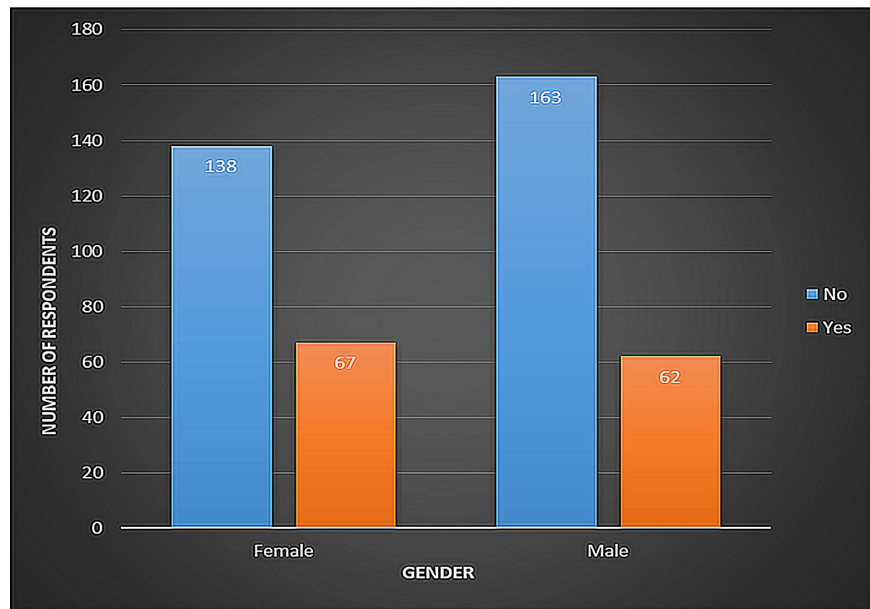
Source: Author's compilation, survey data, 2025.

Figure 1. Age distribution of respondents.

As shown in **Figure 2**, of the 430 respondents, 301 (70%) reported lacking knowledge of substance abuse, including 138 females and 163 males. In contrast,

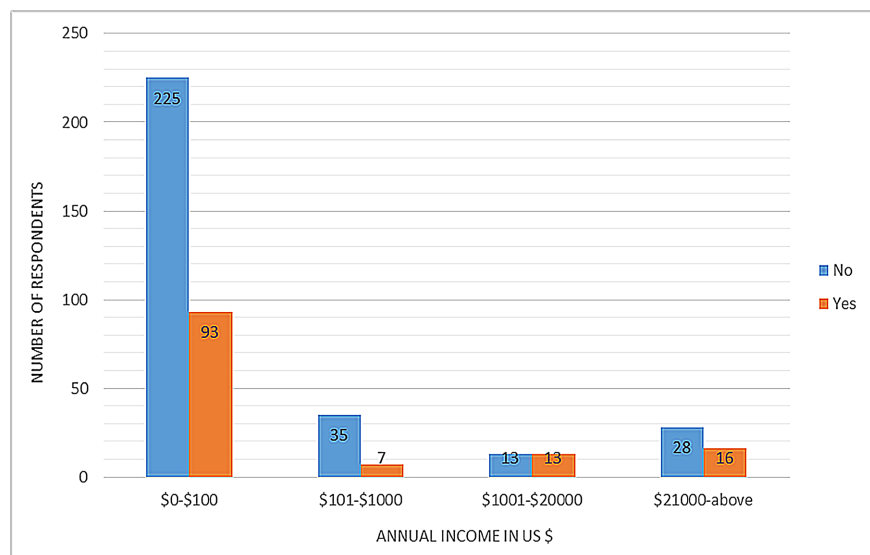
129 respondents (30%), comprising 67 females and 62 males, reported having some knowledge of the subject. This finding highlights the need for schools and communities to implement targeted educational programs to improve students' awareness and understanding of substance abuse.

As displayed in **Figure 3**, the findings indicate a consistently low level of awareness of substance abuse across all income categories. Of the 430 respondents, 301 (70.0%) reported that they lacked adequate awareness. Among these respondents, 225 reported an annual income of \$0 - 100, and 35 reported an income of \$101 - 1000,



Source: Author's compilation, survey data, 2025.

Figure 2. Knowledge of substance abuse by gender.



Source: Author's compilation, survey data, 2025.

Figure 3. Knowledge of substance abuse by annual income in US\$.

13 reported an income of \$1001 - 20,000, and 28 reported an income above \$20,000. In contrast, 129 respondents (30%) reported being aware of substance abuse. Of these, 93 belonged to the \$0 - 100 income category, 7 to the \$101 - 1000 category, 13 to the \$1,001 - 20,000 category, and 16 to the \$21,000 and above category. Overall, the results demonstrate substantial gaps in awareness across all income groups, with the greatest number of respondents reporting limited awareness in the lowest-income category.

3.2. Perceived Students' Attitude towards the Use of Substance Abuse

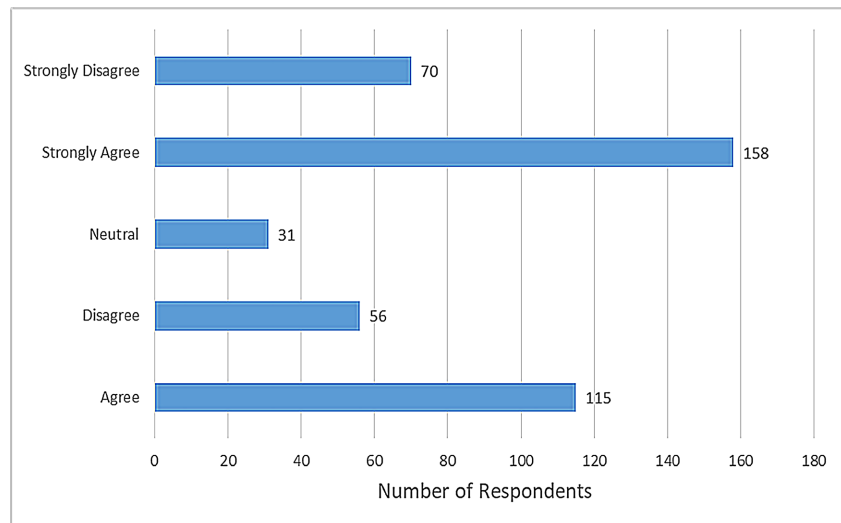
Table 1 indicates a strong consensus among students regarding the link between substance abuse and peer pressure, evident across all grades. The low number of neutral responses, particularly in Senior-2 (10, 2.33%), Senior-3 (20, 4.65%), and Senior-4 (22, 5.12%), suggests a clear recognition of the issue without considerable indecision. Interestingly, Senior-2 students (15, 3.49%) demonstrate slightly less agreement than Senior-3 (44, 10.23%) and Senior-4 (57, 13.26%), indicating an evolving perception of the issue as students progress through grades. The overall low incidence of strong disagreement (totaling 40, 9.30% across all grades) further underscores a broad acknowledgment of the impact of substance abuse.

As illustrated in **Figure 4**, the vast majority of students perceive substance abuse as a crime, with 158 (36.74%) students strongly agreeing and 115 (26.74%) agreeing with this classification. On the other hand, 56 (13.02%) students disagree, and 70 (16.28%) strongly disagree. The number of neutral responses stands at 31 (7.21%), indicating a small segment of students who may be uncertain about this classification. This perception is critical as it can influence students' behaviors and attitudes towards substance use.

Table 1. Perceived attitude towards substance abuse due to peer pressure by grade.

Peer Pressure	Senior 2	Senior 3	Senior 4	Grand Total
Agree	15	44	57	116
Disagree	17	16	28	61
Neutral	10	20	22	52
Strongly Agree	25	57	79	161
Strongly Disagree	7	19	14	40
Grand Total	74	156	200	430

Source: Author's compilation, survey data, 2025.



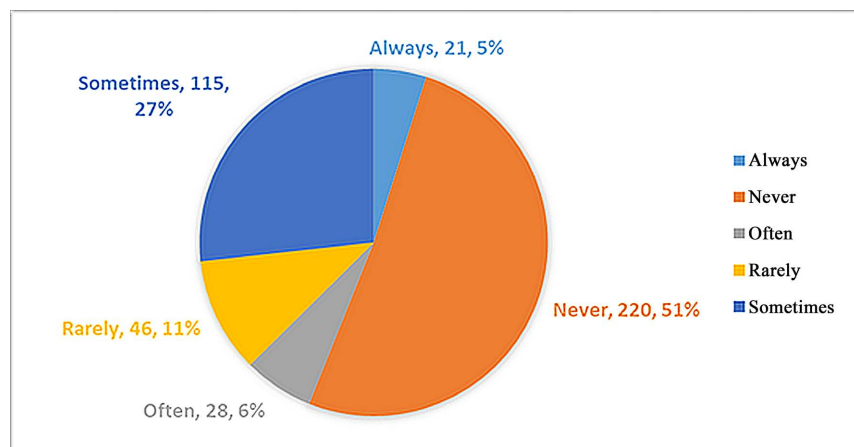
Source: Author's compilation, survey data, 2025.

Figure 4. Perception of substance abuse as a crime.

3.3. Substances Commonly Used

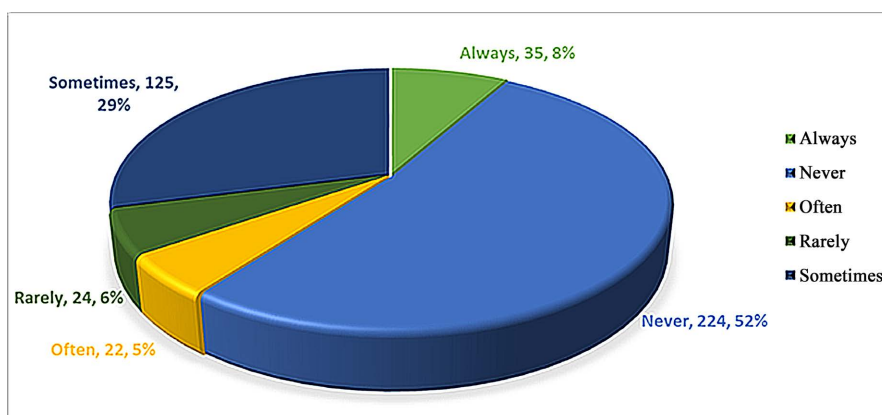
Based on the combined proportion of respondents reporting any use frequency other than “never,” the nicotine/cigarettes/cannabis/marijuana group had the highest reported use (210/430, 48.8%), as shown in **Figure 5**. This was followed by ice (206/430, 47.9%) in **Figure 6**, cocaine or morphine (200/430, 46.5%) in **Figure 7**, and alcohol (182/430, 42.3%) in **Figure 8**. Because several substances were grouped within single questionnaire categories, these findings do not provide the prevalence of each individual substance.

The data revealed that a substantial proportion of ice use occurred in domestic settings or before participation in sporting activities. Among the 206 respondents who reported using ice rarely, sometimes, often, or always, 75 (17.4%) identified parties or nights out as settings associated with use, whereas 131 (30.5%) reported using ice at home or before watching sports, as presented in **Table 2**.



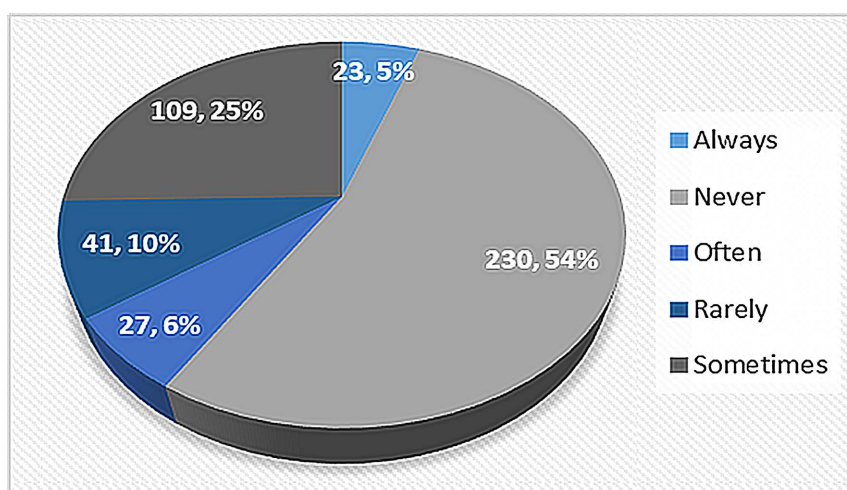
Source: Author's compilation, survey data, 2025.

Figure 5. Nicotine, cigarette, cannabis, and marijuana consumption.



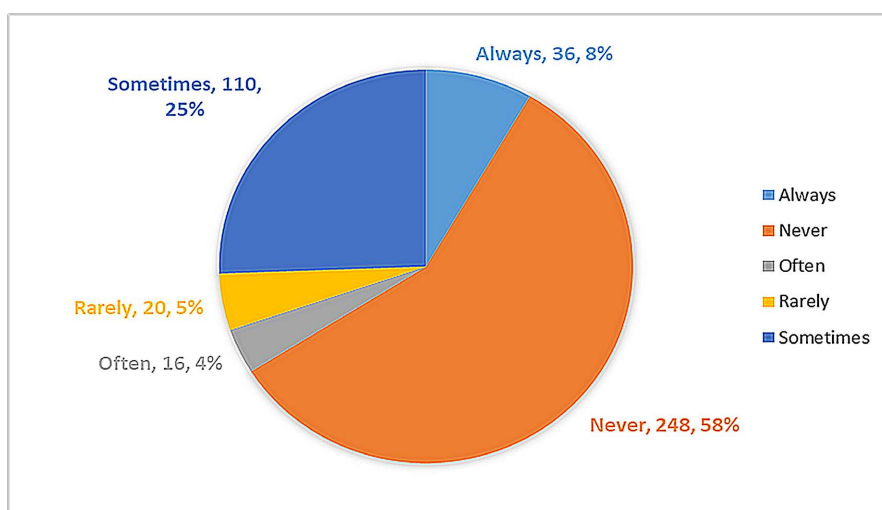
Source: Author's compilation, survey data, 2025.

Figure 6. Ice consumption.



Source: Author's compilation, survey data, 2025.

Figure 7. Cocaine or morphine consumption.



Source: Author's compilation, survey data, 2025.

Figure 8. Alcohol consumption.

Table 2. Ice consumption by frequency and setting/situation.

Ice Consumption	Parties/Night Out	At Home/Before Watching Sport	Grand Total
Always	11	24	35
Never	55	169	224
Often	10	12	22
Rarely	8	16	24
Sometimes	46	79	125
Grand Total	130	300	430

Source: Author's compilation, survey data, 2025.

3.4. Perceived Factors Influencing the Use of Substance Abuse

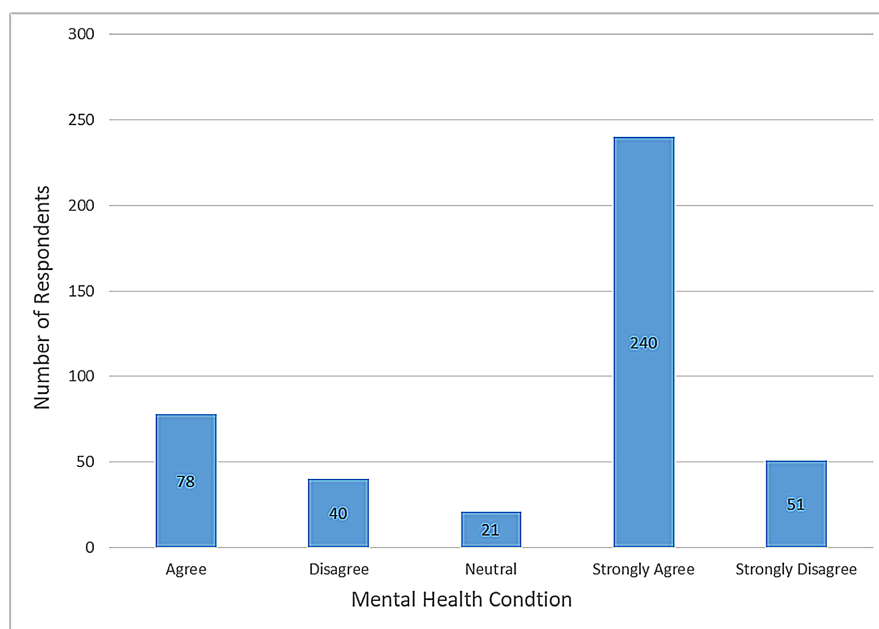
As shown in **Table 3**, the most frequently perceived factor contributing to substance abuse was a lack of family support. Overall, 328 respondents (76.28%) endorsed this view, comprising 250 respondents who strongly agreed and 78 who agreed. Conversely, 81 respondents (18.84%) disagreed, including 38 who disagreed and 43 who strongly disagreed, while 21 respondents (4.88%) remained neutral.

Table 3. Lack of family support as the perceived factor of substance abuse by gender.

Lack of Family Support	Female	Male	Grand Total
Agree	33	45	78
Disagree	19	19	38
Neutral	7	14	21
Strongly Agree	135	115	250
Strongly Disagree	11	32	43
Grand Total	205	225	430

Source: Author's compilation, survey data, 2025.

Mental health issues were identified as the second most common perceived contributor to substance abuse. Of the respondents, 318 (73.95%) agreed with this view, including 240 who strongly agreed and 78 who agreed. Conversely, 91 respondents (21.16%) disagreed, while 21 (4.88%) remained neutral, as shown in **Figure 9**.



Source: Author's compilation, survey data, 2025.

Figure 9. Mental health condition as a perceived factor of substance abuse.

4. Discussion

This study provided important insights into secondary school students' perceived knowledge and attitudes toward substance abuse in Juba, South Sudan. Approximately 70% of respondents reported lacking essential information about substance abuse, indicating a need for targeted and contextually appropriate educational interventions. Perceived knowledge appeared to vary according to socio-demographic characteristics, including age and annual household income. Previous studies have suggested that lower socioeconomic status may limit access to educational resources and reduce awareness of the risks associated with substance use [10].

Most respondents were between 17 and 25 years of age. This age distribution is noteworthy because, as Castellanos-Ryan *et al.* (2013) point out, adolescence and early adulthood are recognized as critical developmental periods for the initiation and escalation of substance use [11]. Awareness also appeared to differ by grade level, with Senior 4 students demonstrating greater knowledge than Senior 2 students. This pattern is consistent with evidence from a systematic review by Onrust *et al.* (2016), which found that the effectiveness of school-based substance-use prevention programs differs across age groups, supporting the need to match program content and delivery to students' developmental stage [12].

Peer effect was identified as an important perceived contributor to substance use. Most respondents indicated that linking with peers who use substances may increase an individual's vulnerability to substance abuse. This finding is consistent with social learning theory, which proposes that people learn behaviors by observing and interacting with others, particularly their peers [13]. Prevention programs

should therefore promote positive peer networks and strengthen students' ability to resist negative social pressure.

Many respondents perceived substance abuse as criminal behavior. However, El Hayek *et al.* (2024) explained that criminalizing drug use may reinforce stigma, social marginalization, fear of legal consequences, and delayed access to health care [14]. Such framing may discourage adolescents from disclosing substance-use experiences or seeking support. Stigma can further prevent individuals from accessing appropriate support and treatment. McGinty *et al.* (2020) recommended stigma-reduction communication that uses person-first, non-stigmatizing language and presents substance-use disorders as treatable public-health conditions rather than moral or criminal failings [15].

Nicotine/cigarettes/cannabis/marijuana was identified as the most commonly used substance, followed by Ice, or methamphetamine, cocaine and morphine, and alcohol. The reported use of Ice, locally known as telich, in domestic settings or before sporting activities highlights the influence of social environments on substance-use patterns. Prevention efforts should therefore address substance use within the specific contexts in which students encounter or use these substances [16].

Lack of family support was perceived as the most influential factor contributing to substance use among the respondents. This finding is consistent with evidence reported by Horigian *et al.* (2016), who emphasized that supportive parenting, effective parental monitoring, positive parent-adolescent communication, and strong family attachment are important protective factors against adolescent substance use [17]. Mental health challenges were also identified as significant contributing factors, highlighting the need for integrated interventions that address both mental health and substance use among adolescents. Such interventions should involve families, schools, communities, and relevant health and social services.

5. Conclusions

This study identified substantial gaps in secondary school students' knowledge of substance-related risks in Juba, South Sudan. These gaps were particularly evident among students aged 17 - 25 years and appeared to vary across socioeconomic and educational backgrounds. The findings highlight the need for accessible, age-appropriate, and culturally relevant prevention programs.

Peer influence, limited family support, and mental health challenges were perceived as major contributors to substance use. In addition, the perception of substance abuse as criminal behavior may contribute to stigma and discourage affected students from seeking help. Prevention efforts should therefore combine accurate health education with psychosocial support, family engagement, positive peer influence, and clear information about legal and social consequences.

Overall, substance-use prevention should follow a coordinated, school- and community-based approach. This approach should include comprehensive education, early identification of students at risk, mental health services, family in-

volvement, positive peer programs, and accessible referral pathways for students who require further assistance.

6. Policy Recommendations

Implement comprehensive, age-appropriate education programs. Schools, in collaboration with community organizations and health authorities, should provide structured substance-use education that is appropriate to students' age, grade level, and socioeconomic context. These programs should provide accurate information on the health, academic, social, and legal consequences of substance use, with particular attention to ice, nicotine products, cannabis, alcohol, cocaine, and morphine.

Strengthen family engagement and support. Schools should establish parent- and caregiver-focused workshops, counseling opportunities, and communication initiatives to improve family awareness, supervision, and supportive relationships. Strengthening family communication may reduce students' vulnerability to substance use and improve early identification of behavioral or emotional difficulties.

Integrate school-based mental health services. Education authorities should prioritize accessible counseling and psychosocial support within secondary schools. Schools should train relevant staff to identify students experiencing emotional distress, establish confidential referral systems, and promote mental health literacy as part of substance-use prevention.

Establish peer mentorship and student-support initiatives. Schools should develop peer mentorship programs in which trained senior students support younger students. These initiatives should promote positive peer norms, provide practical strategies for resisting peer pressure, and create safe spaces for students to discuss substance-related concerns without fear of stigma.

Adopt a public health-oriented policy approach. Policymakers should address substance abuse as a public health, educational, and social welfare priority rather than solely as a criminal matter. This approach should increase investment in prevention, counseling, early intervention, community awareness, and referral services for young people.

Promote multisector coordination and monitoring. Effective prevention requires collaboration among schools, parents, health professionals, community leaders, civil society organizations, and relevant government institutions. Stakeholders should establish mechanisms to monitor substance use trends, evaluate prevention programs, and adapt interventions in response to emerging student needs.

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Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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