Perceptions, Practices and Prevalence if Psychoactive Substances among Students in the Faculty of Medical Sciences, University of the West Indies St Augustine Campus, Trinidad and Tobago

Raveed Khan[1*], Matthew Camacho[2], Rashad Brahim[2], Alyssa Brathwaite[2], Radica Budha[2], Ranushka Burgess[2], Rico Carmino[2], Cherille Cave[2], Misty Gangar[3]

[1]Department of Para Clinical Sciences University of the West Indies, St Augustine Campus; [2]University of the West Indies, St Augustine Campus ; [3]Accident and Emergency Department, North Central Regional Health Authority

ABSTRACT

This paper highlights the attitudes and practices of university students enrolled in the faculty of medical sciences regarding substance abuse. The cross sectional study was conducted over six months in which 308 students responded to a questionnaire distributed via email and social media. The 1-month prevalence rate for alcohol and cigarette use was found to be 53% and 9.1% respectively. Binge drinking had a prevalence of 29.0%. Marijuana was the second most frequently used drug with a 1-month prevalence of 13.4%. In general, alcohol was the most frequently used substance followed by marijuana. The participants showed a positive attitude towards the use of marijuana. While the use of tranquilizers, stimulants and cocaine was present, it was relatively low compared to the other substances. These findings provide a basis for future research regarding the use of and attitudes towards the use of these substances as the implications for their use and misuse can pose threats to the quality of care provided by health care practitioners.

Keywords: Cannabis; Ethanol; Tranquilizing agents; Binge drinking; Prevalence; Attitude; Students; Faculty

INTRODUCTION

The World Health Organization defines a psychoactive substance as a substance that when taken in or administered into one's system, affects mental processes such as cognition or affect. It encompasses the whole class of licit and illicit substances and of note does not necessarily imply dependence producing and in common parlance, the term is often left unstated, as in 'drug use' or 'substance abuse' [1]. Examples of psychoactive substances include nicotine, alcohol, marijuana, cocaine, tranquilizers and stimulants to name a few.

Alcohol, tobacco and other psychoactive substances have well established health risks associated with their use/abuse and is of particular importance to students enrolled in clinical programmes as they represent the future medical professionals that will be engaged in the provision of health-related services.

The entry into university brings with it an unexpected quantity of work which creates a stressful environment for students. Smith described the stressful nature of transitioning from secondary school, where parental and teacher guidance is provided in all aspects of a student's life, to university, in which students undertake more responsibilities and transition into adulthood. The new experience for some students entail reduced parental control, financial burdens, relationship obstacles, stress of exams. Therefore, the university environment provides an opportunistic setting for students to experiment and abuse both legal and illegal substances [2].

General population statistics on alcohol abuse in the United States of America in 2015 was reported by the National Institute on Alcohol Abuse and Alcoholism. It was found that 70% of American citizens used alcohol in the preceding year [3]. Comparatively, Maharaj RG reported 62% of households included alcohol users in Trinidad and Tobago [4]. Additionally, Pan American Health Organisation (PAHO) reported that 21% of the total population of Trinidad smoked cigarettes [5].

*Correspondence to: Raveed Khan, Lecturer, Department of Para Clinical Sciences, Public Health and Primary Care Unit, University of the West Indies, Building 13, Eric Williams Medical Sciences Complex, Champ Fleurs, Trinidad and Tobago, Tel: +1(868) 740-6289; Fax: +1 (868) 645-3232; E-mail: HYPERLINK "mailto:Raveed.Khan@sta.uwi.edu" \h Raveed.Khan@sta.uwi.edu

Caribbean literature regarding the use of psychoactive substances among the university population is poorly reported. However, in 2010 in Trinidad and Tobago, Dhanookdhary et al. suggested that the six- month prevalence rate of students who used alcohol, tobacco and marijuana were 70%, 17% and 13% respectively. They further described the overall trend of alcohol use is one that increases from high school into university [6].

Even though there is paucity of Caribbean literature regarding the use of psychoactive substance prior to university. Soyibo and Lee, reported in a Jamaican high school just over 50% of the students have used alcohol, 17% tobacco and 10% marijuana [7]. Comparatively in Trinidad and Tobago, Singh et al. described prevalence rates of 84%, 35% and 8% for alcohol, tobacco and marijuana respectively among secondary school students [8].These figures suggest that the rates of alcohol, tobacco and marijuana use are high and that psychoactive substance use habits are normally propagated into university from high school.

Yuri Silva et al. reported that family members tend to be the focal point at which the initiation into alcohol use occurs, and that university acts as risk factor for increasing and maintaining the practice of alcohol consumption [9,10]. Living arrangements have been associated with drug use amongst university students. Nawaz et al. reported that81.33% of users were living in a hostel or rented apartment [11].

The misuse of prescription drugs has also become a recent growing phenomenon among drug abuse experts. McCabe et al. found that one in four college students abuse prescription drugs [12]. This misuse has been attributed to the cognitive enhancing properties of these drugs that has led to students self-medicating more often to manage stress and anxiety that is brought on by pressure of university [13].

Research conducted in another developing country, India has concluded that nearly one fifth of medical students abuse at least one substance despite knowledge of the ill effects [14,15]. In this regard the perceptions that influence drug use rather than knowledge was selected as a research aim in our study. The aims of this study are as follows:

1. To determine prevalence rates of use/abuse of commonly used psychoactive substances such as alcohol, cigarettes and marijuana.

2. To determine the prevalence rates of less commonly abused psychoactive substances such as prescription and other drugs.

3. To explore the perceptions towards the use of psychoactive substances.

SUBJECTS AND METHODS

Design and population

The study utilized a cross sectional design. It included students currently enrolled at the Faculty of Medical Sciences. Using the formula $n = Z^2p(1-p)/d^2$, a minimum sample size of 236 was computed.

Where Z=1.96 for 95% Confidence Interval. p=19% or 0.19 based on mean prevalence rate of alcohol abuse found in a previous study conducted at the UWI St. Augustine Campus[4]. d=5% margin of error or 0.05

We exceeded this minimum requirement and surveyed a random sample of 308 students during the period January 1st 2019 to June 30th 2019.

Instrument and measurements

A validated questionnaire adapted from the Southern Illinois University, Core Alcohol and Drug Survey (Long Form) was utilized. In adapting the questionnaire, questions not pertinent to our study were excluded while others were expanded to fit within the scope of our study. It included 53 closed ended questions. (see appendix 2).

Data collection

Email addresses of all students enrolled in the faculty were obtained. Questionnaires were distributed digitally via social media and to students directly via their UWI student email. A survey method of data collection was used in which questionnaires were distributed digitally to students via social media and through the email addresses provided by the faculty. There was no sign-in required and no identifying information was collected in the questionnaire to provide anonymity to participants. This was done to encourage truthful responses. This was particularly important as the possible ramifications that could have been faced by participants, if their substance use habits were discovered, could have led to dishonesty. Informed consent was obtained prior to obtaining responses. The questionnaire required respondents to give information about their age, residence, first time using a substance, period within which the substance was used ranging from one to twelve months, GPA and year of study. Inquiry into the attitudes towards these various substances was also done. The inclusion criterion for the study was either full time or part time students currently enrolled in the faculty of medical sciences.

Data analysis

The data was collected and stored in a password protected computer to which only the study group and supervisor had access. The responses were computed on a Microsoft excel sheet and then entered into SPSS version 25 for analysis. Pearson chi squared tests were utilized to obtain frequency analyses and tests of association. To control for confounding variables multiple logistic regression was performed.

Ethical issues

Ethical approval from the University of the West indies was obtained prior to starting the data collection.

RESULTS

Descriptive statistics

The study population consisted of students enrolled in the Faculty of Medical Sciences with most respondents pursuing an MB.BS

Table 1: The Characteristics of Respondents.

Age	Number	Percent
17 – 19 Years	17	5.5
20 – 25 Years	262	85.1
26 – 30 Years	17	5.5
> 30 Years	12	3.9
Degree	Number	Percent
MB.BS	225	73.1
DDS	16	5.2
DVM	9	2.9
B. Sc. Pharm	25	8.1
BSN	12	3.9
B. Sc. Opt.	21	6.8
Year of Study	Number	Percent
Year 1	78	25.3
Year 2	112	36.4
Year 3	35	11.4
Year 4	50	16.2
Year 5	33	10.7
Place of Residence	**Number**	Percent
House	198	64.3
Apartment	87	28.2
Residence hall	22	7.1
Living arrangement	**Number**	Percent
Alone	58	18.8
Partner/Significant other	16	5.2
Parents	195	63.3
Roommates	37	12.0
Sibling	1	0.3
Children	1	0.3
GPA		
4.0 – 4.3 (A)	50	16.2
3.0 – 3.9 (A minus to B)	177	57.5
2.0 – 2.9 (B minus to C)	63	20.5
1.0 – 1.9 (C minus to D)	2	0.6
Not Sure	16	5.2

n=308

degree (73.1%). Most of the participants belonged to the age group 20- 25 year (85.1%) and lived with their parents (63.3%) (Table 1). Most students had a GPA between 3.0 and 3.9.

Attitudes and perceptions to psychoactive drugs

Regarding the attitudes towards psychoactive substance use, 57.8% of the population indicated that they had been curious to try illegal or illicit drugs at some point of their life while 41.6% of respondents said they would try given the opportunity. Illegal or illicit drugs in Trinidad and Tobago being defined as marijuana, cocaine, heroin and synthetic narcotics (Figures 1 and 2).

Referring to table two, students were asked their opinions on the harmfulness of various substances when used frequently or occasionally. The most harmful substances were thought to be cocaine (96.1%), and cigarettes (94.2%) when used regularly. Only 16.2% of the population thought that the occasional use of marijuana was very harmful while 52.3% thought it was either slightly harmful or not at all harmful. Interestingly 26.3% of medical students perceived marijuana to not be harmful (Figure 3).

Regarding perceived accessibility to these psychoactive substances, 63% of the students rated marijuana as the easiest drug to access among cocaine, stimulants such as Adderall Ritalin and concerta, and tranquilizers such as Valium and Xanax. However, cocaine was cited as the most difficult substance to obtain as only 15.6% of respondents believed they could easily access it and 53.2% thought it was either difficult or impossible to obtain (Figures 4 and 5).
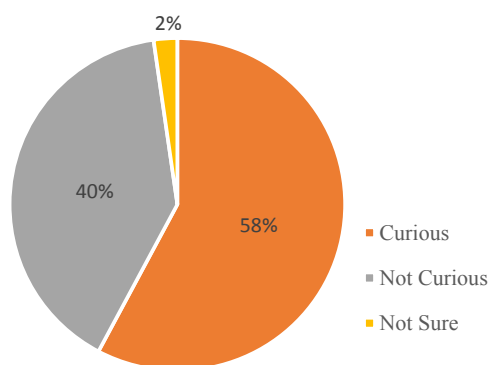
Figure 1: Pie Chart illustrating the attitudes of students towards the use of illegal drugs.
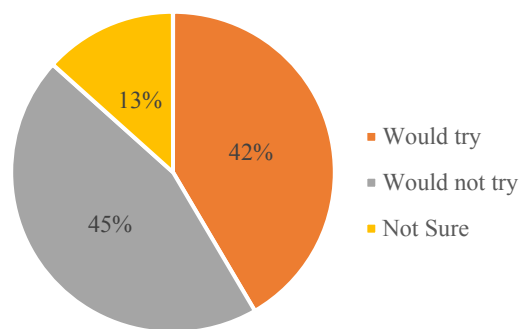
Figure 2: Pie Chart indicating whether students would use illegal drugs given the opportunity.
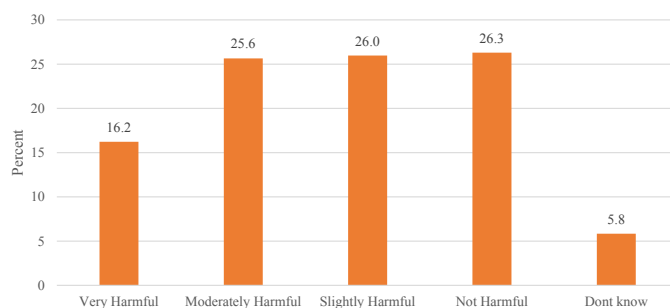
Figure 3: Table showing the attitudes of respondents towards the occasional use of marijuana.

Practices

Alcohol

The prevalence of alcohol consumption within the preceding month was 53% and the lifetime prevalence was reported was 83.1%; however, only 15.4% of respondents indicated that they had consumed alcohol to the point of inebriation within that time with 29% of respondents engaging in binge drinking within the past month. For this study binge drinking was defined as having 5 or more drinks in one setting (Figures 6 and 7).

The legal drinking age in Trinidad and Tobago is 18 years old. However, the mean age of first alcohol consumption was 16 years old and a total of 72.9% of medical students having their first drink before the legal age limit (Figure 8).

Regarding the most common location to consume alcohol, 37.7% indicated that they mostly consumed alcohol at parties or clubs.
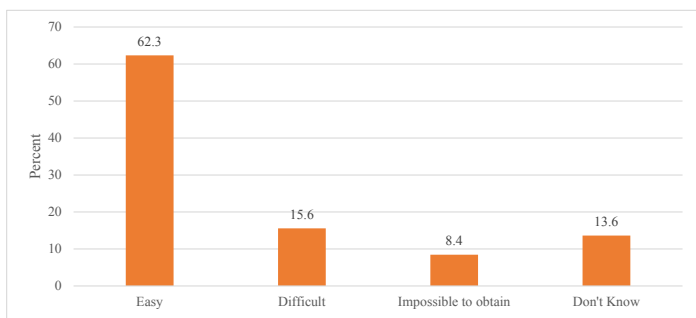

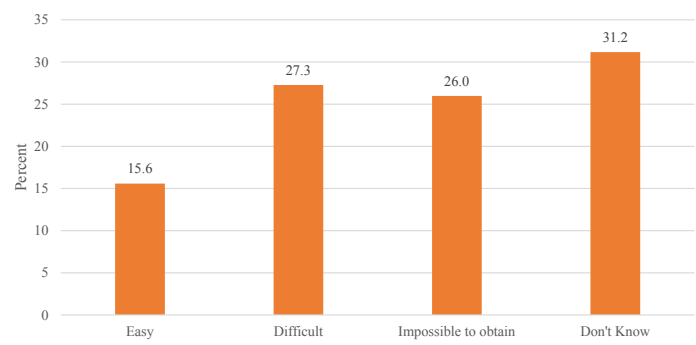**Figure 4:** Bar chart showing how easy participants thought it would be to obtain marijuana.

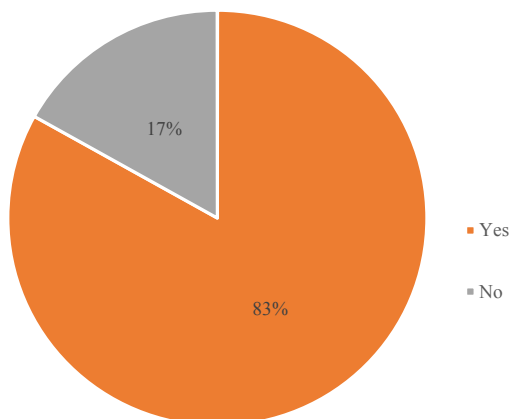**Figure 5**: Bar chart showing how easy participants thought it would be to obtain cocaine.

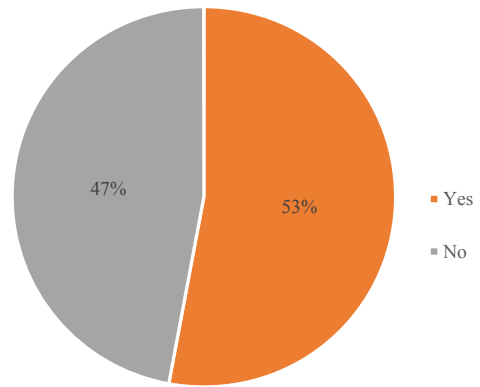**Figure 6:** Pie Chart showing the lifetime prevalence rate of alcohol consumption.

Figure 7: Pie Chart showing the 30-day prevalence rate of alcohol consumption.
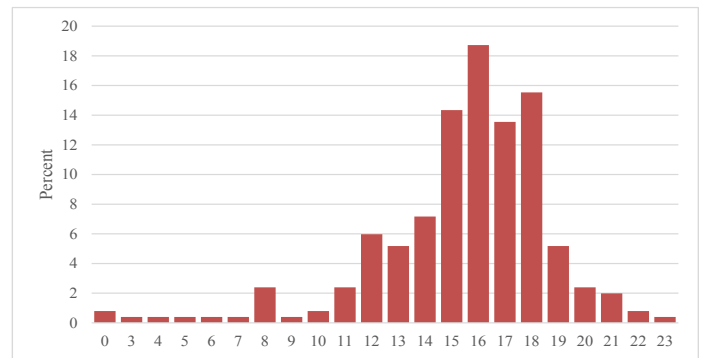
Figure 8: Graph showing the age at which participants first started drinking.

Figure 9: Bar chart showing the locations where alcohol is most often consumed.

Figure 10: Pie chart showing the lifetime prevalence rate for cigarette smoking.

However, 2.8% admitted to consuming alcohol while at school (Figure 9).

Cigarettes

Less than one-third of respondents (28.9%) reported the use of cigarettes at least once in their lifetime (Figure 10). Most students

(69%) stated that they had their first cigarettes between the ages of 15-20 and the average age at which they had their first cigarettes was at the age of 17. This indicates that 42.6% of respondents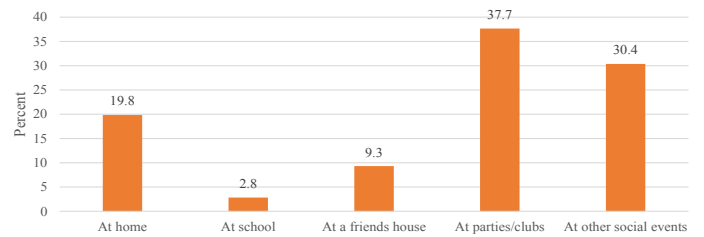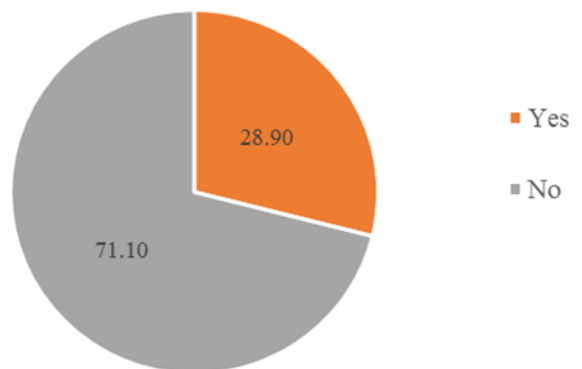 had their cigarettes before the legal age requirement of 18 years (Figure 11). The prevalence of cigarette use within the preceding month was 9.1%, while the prevalence of cigarette use within the last year was 14% (Figures 12 and 13)

The majority (40.6%) of the respondents indicated that they mostly smoked cigarettes at parties and clubs, while 17.4% of respondents indicated that consumed cigarettes at home and 7.2% of respondents at school (Figure 14).
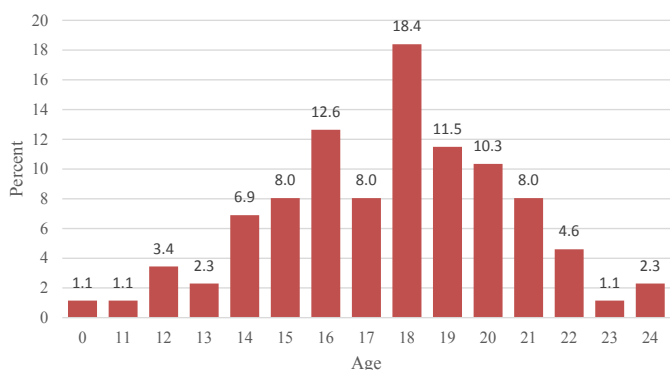

Figure 11: Bar chart showing the age at which participants smoked for the first time.
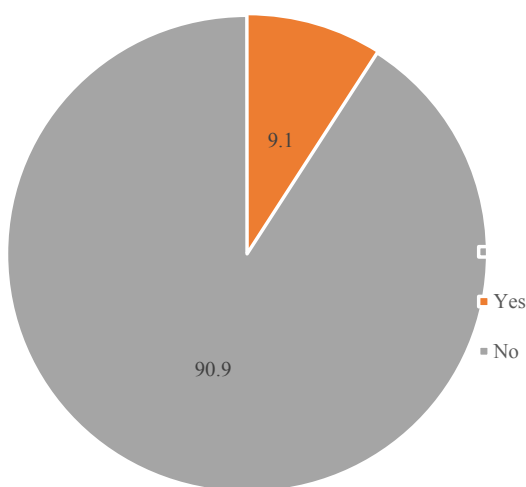

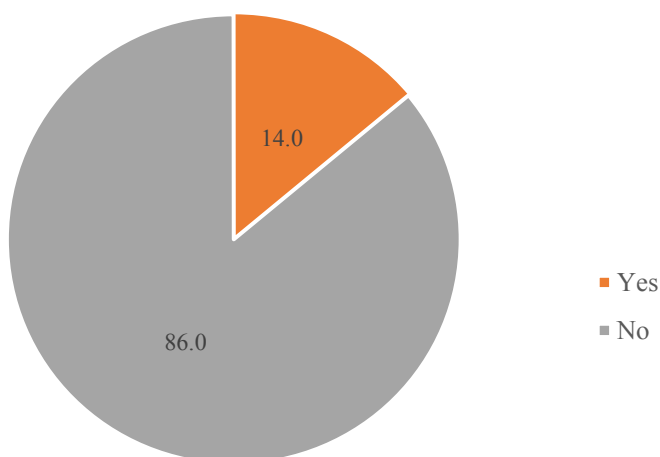**Figure 12:** The 30-day prevalence rate for cigarette smoking.

Figure 13: The 1-year prevalence rate for cigarette smoking.
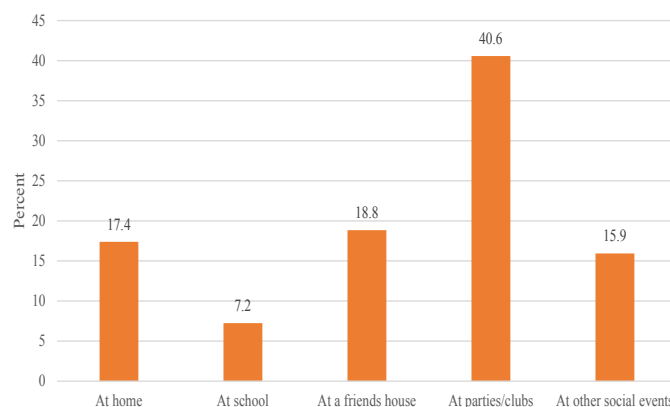

Figure 14: Bar chart showing where respondents most often smoked cigarettes.

Marijuana

In this study 40.6% of the sampled population consumed marijuana at one point in their lives.

The 30-day and 1-year prevalence rates of marijuana use were 13.4% and 27.9% respectively. 8% of people who used marijuana admitted to using it daily and the most common location for marijuana use was at a friend's house.

Tranquilizers, stimulants and cocaine

Tranquilizers referred to the following drugs in the questionnaire: Valium and Xanax. The 30-day prevalence rate of tranquilizer use without a prescription was 2.6% while the yearly prevalence use was 4.9%.

The 30-day and yearly prevalence rate of stimulant use without a prescription was 1.9% and 2.9% respectively. Stimulants in this study was defined as the following drugs: Adderall, Concerta and Ritalin.

A low lifetime prevalence of cocaine was reported. Only 2% of respondents reported ever using cocaine in their lifetime.

Statistically significant trends

Trends were found regarding the habits of medical students part taking in the use of psychoactive substances. Living arrangements were found to be associated with monthly prevalence of alcohol consumption (p<0.05), monthly marijuana use (p< 0.001) and the annual prevalence of marijuana use (p<0.001). Table three describes the relative frequencies of this association.

Additionally, statistically significant trends were found with the following associations: Perceived harmfulness of frequent tranquilizer and 12-month prevalence rate of tranquilizer use (p<0.001), perceived harmfulness of frequent marijuana use and the 12-month prevalence rate (p<0.001) and lastly the perceived harmfulness of occasional cigarette with the 12-month prevalence rate of smoking (p<0.001). See table four for comparison of tests of association with variable of interest.

DISCUSSION

This study highlights the perceptions and practices of students enrolled in the Faculty of Medical Sciences towards psychoactive substances in Trinidad.

Alcohol was the most commonly used psychoactive substance both in terms of lifetime use (83.1%), and current use within the past month (52.9%). This was not surprising as these findings are consistent with several other published studies [6,14].

Most students, 54.9% consumed their first drink of alcohol between the ages of 15-19 which is comparable with findings from research done in Jamaica[2], which reported that most students (50.8%) consumed psychoactive substances including alcohol for the first time between the ages of 15-19. Furthermore, this study also revealed that illegal alcohol consumption is a common occurrence, with many respondents (72.9%) having their first drink before the legal drinking age of 18 years old which is consistent with research done locally[26] and in Brazil where 65% of respondents admitted to consuming alcohol from as early as elementary and high school[10].

The reported prevalence of alcohol consumption of medical students within the preceding month (52.9%) was slightly lower than the 64% which was reported in 2010 amongst the general population of the same campus; the St Augustine Campus of The University of the West Indies. This may be due to the location of the Faculty of Medical Sciences which is situated within a medical complex and away from the UWI St. Augustine main campus, where drinking regularly with friends on and around the campus is a common occurrence.

Brandao et al. reported an increase in peer influence on the consumption of beverage, acceptable and admired behaviours in the university setting. This leads to the acceptance and reinforcement of the alcohol consumption and the social norm of alcohol binging. The newly enrolled students' populations have also shown to have a different alcohol consumption pattern when compared to other populations, such as middle age male adults [9].

The difference in students living arrangements was associated with the monthly alcohol consumption rate (p-value <0.05). The respondents living with parents accounted for the majority of alcohol users in addition to the majority of nonusers also lived with parents (Table 2). However, this finding was quite different from international data with studies conducted in Pakistan, India and Western Countries which showed that the majority of psychoactive substances were used when respondents were living independently.

Additionally, there were no statistically significant associations between the year of study and alcohol consumption within the preceding month (p=0.605) or year of study and binge drinking (p=0.643). Nawaz et al. reported an increase in the number of participants who used psychoactive drugs in their senior years when compared to freshmen years. The seniority of the class presented as

a contributing factor for the increased incidence of substance abuse amongst medical students [10]. Arora et al. further supported this increase in psychoactive substance use in the latter years of medical school; alcohol reported as the major substance used [13].

Of the total respondents, 55.2% were aware that frequent alcohol consumption was very harmful to their health. However, 29.0% admitted to binge drinking, that is, consuming five or more drinks in one sitting. This is congruent with the 31% who admitted to binge drinking in the study done in the University of the West Indies St Augustine campus in 2010 [6]. The similarities between these two findings indicate that binge drinking is widely practised in this population. This is of significant concern since binge drinking can lead to risky behaviours including drunk driving, unprotected sex and violence [16,17].

Even though alcohol was the most frequently used drug, statistical significance was not found with monthly alcohol consumption or binge drinking and student's performance, reflected by the respondent's GPA. (p-value 0.9 and 0.537 respectively) This is contrary to international data which demonstrated a clear association between habitual heavy drinking and lower grade point average.[18] A possible explanation alludes to the frequency and quantity of alcohol consumption by the medical students in our study were not excessive to hinder academic performance.

Interestingly, approximately half the respondents share some curiosity or willingness to try illegal drugs. This is significant because it alludes at the eventual use of these substances by those who have not already done so (Figures 1 and 2). Investigating the attitudes towards various drugs, highlighted that the majority of the respondents (26.3%) found marijuana not to be harmful if used occasionally but very harmful if used frequently (40.9%). This positive attitude in addition to the relatively easy access of marijuana (62.3%) can explain why marijuana is the second most frequently used substance after alcohol.

Additionally, respondents showed a strong negative attitude towards cocaine use regardless of frequency of use because it was perceived as very harmful. (83.4% for occasional use and 96.1% if used frequently). Only 2% of the population used cocaine and this low prevalence rate could be related to the fact that 53.24% of respondents thought it would be difficult or impossible to obtain cocaine or crack (smoked cocaine).

Interestingly of the marijuana users, the majority perceived marijuana to be moderately harmful if used frequently however they continued to use marijuana. This alludes to the possibility of marijuana dependence despite intact insight in these respondents.

Table 2: Describing the living arrangements of respondents using the following psychoactive substances.

Living arrangements	Alcohol consumption in the past 30 days/n		Marijuana use in the past 30 days/n		Marijuana use in the past year/n		Missing Entries
	Yes	No	Yes	No	Yes	No	
Living Alone	41	17	14	44	24	34	0
With partner/significant other	12	4	1	15	5	11	0
with parents	88	107	16	179	38	157	0
with roommates	22	15	12	25	19	18	0
with sibling	0	1	0	1	0	1	0
with children	0	1	0	1	0	1	0
Total	163	145	43	265	86	222	0

Similarly, an association was found with living arrangements and 12-month marijuana use (p value <0.001) (Table 3). This is comparable with alcohol consumption; the majority of marijuana users lived with their parents in addition to the majority of non-users also lived with their parents. To explain this association in both drugs, the non-users possibly had more parental supervision which would deter use but they still would have been more financially stable than respondents living alone to afford purchasing these substances. Contrary to existing research which reported an increase in frequency in psychoactive substance use in students who were living in hostels (81.33%) vs. day-scholars (18.67%) [11].

A significant difference in monthly prevalence rates of marijuana usage was reported. The reported one-month prevalence rate of marijuana use in Trinidad within the past month (14%) was found to be higher than that between the 2.1% reported in Jamaica in 2015 by Whitehorne-Smith et al. and 10% recorded in the USA by Alaya et al. [16]. This disparity supports our findings of accepting attitudes towards the use of marijuana since only 16.2% of students deemed marijuana to be very harmful whereas 52.3% believed marijuana to be either slightly harmful or not harmful at all.

Cigarette smoking is definitely on the rise in the medical student population with an increase in first time users. The study found that 28.9% of respondents admitted to smoking cigarettes at least once in their lifetime. This has increased from the last reported value of 17% in 2010. The monthly and annual prevalence rates of cigarette use were also reported as 9.09% and 14%. These values are again higher than our Jamaican counterpart, that reported 2.4% and 4.7% respectively. These higher prevalence rates could

be due to the stressful nature of the participants' degree and due to increased peer pressure interaction created by the university environment. Notwithstanding, 47.6% of respondents first started smoking between the age of 15-18 with the average age being age 17 (Figure 11) when compared to 22.7% in nursing students in Turkey [17].

Statistical significance was found between the perceived harmfulness of occasional or frequent cigarette smoking and the 12-month prevalence rate (p<0.001 for occasional use and p <0.05 for frequent use). The frequency of this association is illustrated in Table 4. The majority of students found cigarettes to be very harmful whether used frequently or occasionally and therefore restricted its use. This can be alluded to increase awareness of the harmful effects of cigarette use by the general public.

Regarding tranquilizers and stimulants, an association between the belief about its propensity to cause harm and the frequency of tranquilizer use was found. (p=0.01) The majority of respondents, 83.4%, reported that its use was very harmful and which resulted in a low 30-day prevalence rate (2.6%). The use of stimulants yielded similar results to tranquilizers, however less students (76%) viewed the use of stimulants frequently to be very harmful however the 30-day prevalence rate was 1.9%. This suggests that students attitudes are more relaxed regarding use of stimulants which might prompt greater abuse of this substance.

Stimulants are perceived as cognitive enhancers. Emanuel et al. alluded to the increased lifetime use of stimulants in medical students who were born in the USA vs. their non-USA counterparts

Table 3: Illustrating The Perceptions Medical Students Have Towards Psychoactive Substance.

Opinion of harmfulness of respective drugs	Very Harmful	Moderately Harmful	Slightly Harmful	Not Harmful	Do not know	Missing Entries	Total
Occasional cigarette use	51.9% (n= 160)	32.5% (n=100)	14.3% (n=44)	1.3% (n= 4)	0% (n=0)	0% (n=0)	100% (n=308)
Frequent cigarette use	94.2% (n=290)	5.2% (n=16)	0.3% (n=1)	0.3% (n=1)	0% (n=0)	0% (n=0)	100% (n=308)
Frequent alcohol consumption	55.2% (n=170)	28.9% (n=89)	13.3% (n=41)	2.6% (n=8)	0% (n=0)	0% (n=0)	100% (n=308)
Occasional use of tranquilizers without a medical prescription	51% (n=157)	28.9% (n=89)	16.2% (n=50)	2.6% (n=8)	1.3% (n=4)	0% (n=0)	100% (n=308)
Frequent use of tranquilizers without a medical prescription	83.4% (n=257)	11.4% (n=35)	3.9% (n=12)	0.3% (n=1)	1% (n=3)	0% (n=0)	100% (n=308)
Occasional use of stimulants without a medical prescription	46.1% (n=142)	34.7% (n=107)	14.6% (n=45)	2.9% (n=9)	1.6% (n=5)	0% (n=0)	100% (n=308)
Frequent use of stimulants without a medical prescription	76% (n=234)	17.9% (n=55)	3.9% (n=12)	1% (n=3)	1.3% (n=4)	0% (n=0)	100% (n=308)
Smoking marijuana occasionally	16.2% (n=50)	25.6% (n=79)	26% (n=80)	26.3%(n=81)	5.8% (n=18)	0% (n=0)	100% (n=308)
Smoking marijuana frequently	41% (n=126)	24.8% (n=76)	21.8% (n=67)	8.8% (n=27)	3.6% (n=11)	0% (n=0)	100% (n=308)
Occasional use of cocaine	83.4% (n=257)	14.3% (n=44)	1.9% (n=6)	0.3% (n=1)	0% (n=0)	0% (n=0)	100% (n=308)
Frequent use of cocaine	96.1% (n=296)	3.6% (n=11)	0.3% (n=1)	0% (n=0)	0% (n=0)	0% (n=0)	100% (n=308)
Second hand cigarette smoke	58.8% (n=181)	32.5% (n=100)	7.8% (n=24)	0% (n=0)	0% (n=0)	0% (n=0)	100% (n=308)
Second hand marijuana smoke	34.1% (n=105)	28.6% (n=88)	19.5 % (n=60)	11.4% (n=35)	6.5% (n=20)	0% (n=0)	100% (n=308)

n=number of respondents.

Table 4: Comparing tests of associations between variables of interest.

Associated variables	p-value
Living arrangements and Alcohol 30-day prevalence	<0.05
Living arrangements and marijuana 12-month prevalence rate	
Harmfulness of occasional cigarette use and 12-month prevalence of smoking	<0.05
Living arrangement and 12-month prevalence of marijuana use	<0.05
Harmfulness of frequent tranquilizer use and 12-month prevalence of tranquilizer use	<0.05
Ease with which student thought they could access tranquilizers and lifetime prevalence of tranquilizer use	<0.05
Year of study and one-month prevalence of alcohol use	>0.05
Year of study and one month prevalence of binge drinking	>0.05

(outside of U.S. psychostimulant use prevalence = 4% vs. 20% U.S. reared; Chi squared $p = 0.013$) [18]. The lifetime prevalence reported in our study was 5.5% with students most frequently accessing these drugs from a friend. This is congruent to the data reported by Emanuel et al. Even though medical students believe that stimulants will enhance academic performance, our study found statistical significance with students with high GPAs and no stimulant use ($p < 0.001$).

CONCLUSION AND RECOMMENDATION

The strengths of this study include its large sample size and absence of missing data as all questionnaires were completely filled. The ease of completing the questionnaire online and anonymously would have contributed to this finding.

Limitations would include its cross-sectional design which does not allow for assessment of temporal trends but rather provides information at a point in time. This study would also be subject to responder and social desirability biases based on the sensitive nature of the questions asked. Generalizability of our findings would be limited based on the fact that majority of respondents were enrolled in the study of medicine thereby potentially skewing the findings towards medical students and not reflective of other students engaged in other career pursuits.

Alcohol followed by marijuana was the most commonly used psychoactive substance both in terms of lifetime use and current use within the past month. A relatively accepting attitude towards marijuana use was observed as only 16.2% of students deemed marijuana to be very harmful whereas 52.3% believed marijuana to be either slightly harmful or not harmful at all. With the use of marijuana being recently decriminalized in Trinidad and Tobago further research should be conducted to study trends in substance use/abuse among health care workers to determine whether these findings extend beyond the completion of undergraduate training.

The use of psychoactive substances among medical students should be taken more seriously as their own attitudes towards substances may influence their professional judgement, putting theirs along with others lives at risk. The findings of 29% of respondents engaging in binge drinking and the accepting attitude towards marijuana use are instructive and the University of the West Indies should take proactive steps to educate its students about the potential harmful consequences that can arise out of their misuse.

REFERENCES

1. González-Bautista E, Zavala-Arciniega L, Rivera-Rivera L, Leyva-López A, Natera-Rey G, Reynales-Shigematsu LM, et al. Social factors associated with tobacco and alcohol consumption in Mexican adolescents from populations under 100 000 inhabitants. Salud publica de Mexico. 2020;61:764-774.

2. Whitehorne-Smith P, Mitchell C, Abel WD, Harrison J. Psychoactive substance use among medical/health faculty undergraduate students. WIMJ open. 2015;2:11-14.

3. National Institute on Alcohol Abuse and Alcoholism. Alcohol Facts and Statistics [Internet source]. United States of America; 2015 [updated 2018 August].

4. Maharaj RG, Motilal MS, Babwah T, Nunes P, Brathwaite R, Legall G, et al. National alcohol survey of households in Trinidad and Tobago (NASHTT): alcohol use in households. BMC Public Health. 2017;17:347.

5. Pan American Health Organisation. Report on Tobacco Control in the Region of the Americas. 2018. Available from:

6. Dhanookdhary AM, Gomez AM, Khan R, Lall A, Murray D, Prabhu D et al. Substance use among university Students at the St Augustine Campus of The University of the West Indies. West Ind Med J. 2010;59:641-649.

7. Soyibo K, Lee MG. Use of illicit drugs among high-school students in Jamaica. Bull World Health Organ 1999;77:258-262.

8. Singh H, Maharaj HD, Shipp M. Pattern of substance abuse among secondary school students in Trinidad and Tobago. Public Health 1991;105:435-441.

9. Brandão YS, Correia DS, de Farias MS, Antunes TM, da Silva LA. The prevalence of alcohol consumption among the students newly enrolled at a public university. J Pharm Bioallied Sci. 2011;3:345.

10. Nawaz H, Khan AA, Bukhari S. Use of psychoactive drugs among medical undergraduates in Abbottabad. J Ayub Med Coll Abbottabad 2017;29:599-603.

11. McCabe SE, Teter CJ, Boyd CJ. Medical use, illicit use and diversion of prescription drugs. J Am Coll Health 2006;54:269-78.

12. Di Pietro MC, Doering-Silveira EB, Oliveira MP, Rosa-Oliveira LQ, Da Silveira DX. Factors associated with the use of solvents and cannabis by medical students. Addict Behav 2007;32:1740–1744.

13. Arora A, Kannan S, Gowri S, Choudhary S, Sudarasanan S, Khosla PP, et al. Substance abuse amongst the medical graduate students in a developing country. Indian J Med Res. 2016;143:101.

14. Binge Drinking Fact Sheet [Internet]. Centers for Disease Control; 2018 [cited 2019 July 11]. Available from:

15. Pascarella ET, Goodman KM, Seifert TA, Tagliapietra-Nicoli G, Park S, Whitt EJ, et al. College Student Binge Drinking and Academic Achievement: A Longitudinal Replication and Extension. J College Stu Dev. 2007;48:715-727.

16. Ayala EE, Roseman D, Winseman JS, Mason HR. Prevalence, perceptions, and consequences of substance use in medical students. Med Educ Online. 2017;22:1392827.

17. Adibelli D and Olgun S. Knowledge, Attitude and Behaviour of Health College Students Related to Drug Abuse. Ulutas Med J. 2016;2:90-100.

18. Emanuel RM, Frellsen SL, Kashima KJ, Sanguino SM, Sierles FS, Lazarus CJ, et al. Cognitive Enhancement Drug Use Among Future Physicians: Findings from a Multi-Institutional Census of Medical Students. J Gen Intern Med. 2013;28:1028–1034.