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Tobacco Use and socio- demographic Factors Aamong University Students in Khartoum State, Sudan, 2021

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Abstract:

Background: Tobacco use among adolescents and young adults has become quite widespread during the past years, and a subject of public health concern. socio- demographic factors

Objective: To study the prevalence and determine the socio-demographic factors associated with tobacco use among university students in Khartoum state, in Sudan, 2021.

Methods: This is a descriptive cross-sectional survey; through multi-stage cluster sampling; using WHO model, self-administered questionnaire; for collecting information on tobacco use among students in nine public and, one private university in Khartoum State, Sudan. Two thousand students of both sexes were selected. Two hundred students from each university were selected and equally distributed into four faculties.

Results:. The prevalence was detected and significant associations were detected between, lifetime use rates and different socio-demographic and socio-economic factors.

Conclusion: This study has demonstrated a high prevalence of tobacco use among university students in Khartoum state, that lead to significant problems affecting users and all community around them, leading to the necessity of urgent interventions to reduce the risk of subsequent dependence and other harmful consequences.

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Introduction:

Today's youth face many risks, including drug abuse, violence, and HIV/AIDS , coming with a real challenge is responding to these risks before they become problems . Early use of drugs increases a person's chances of more serious drug abuse and addiction (23). Drug use among adolescents and young adults has become quite widespread during the past years, many teenagers have experimented at some time with various drugs, and problems begin to arise when this experimental use becomes regular use or abuse. Drug abuse has serious consequences in our families and communities. So preventing early use of substances may reduce the risk of progressing to later abuse and addiction.

Drug abuse and addiction has a universal phenomenon extends across socioeconomic, cultural, religious and ethnic boundaries (1, 2).

In early adolescence, when children advance from elementary through middle school, they face new and challenging social and academic situations. Often during this period, children are exposed to abusable substances such as cigarettes and tobacco for the first time; when they enter high school, teens may encounter greater availability of drugs, drug abuse by older teens and social activities where drugs are used and when they enter university, they think they are responsible enough to practice their abuse behaviors. At the same time, many behaviors that are a normal aspect of teen's development, such as the desire to do something new or risky, may increase their tendencies to experiment with drugs. Some teens may give in to the urging of drug-abusing friends to share the experience with them. Others may think that taking drugs (such as steroids) will improve their appearance or their athletic performance or that abusing substances such as alcohol or ecstasy (MDMA) will ease their anxiety in social situations. Teens' still-developing judgment and decision making skills may limit their ability to assess risks accurately and make sound decisions about using drugs. Drug abuse can disrupt brain function in areas critical to motivation, memory, learning, judgment, and behavior control. So, it is not surprising that teens who abuse alcohol and other drugs often have family and school problems,

poor academic performance, health-related problems (including mental health), and involvement with the juvenile justice system (23).

Problem statement

.In 2002, the comparative risk assessment exercise (16) estimated the proportion of disease burden attributable to alcohol, tobacco, and injecting drug use. These estimates explicitly accounted for variations in prevalence of different diseases or injuries, considered age and sex differences, and included mortality as well as morbidity. In 2004, WHO estimates of global disability-adjusted life years (DALY) attributable to amphetamine, cocaine, or opioid use; suggested that use of these drugs accounted for 0·9% of global DALYs, varying widely across regions. Drug dependence (excluding cannabis) was the largest cause of global illicit drug burden assessed (68%), followed by HIV/AIDS (18%). These estimates indicate that illicit drug use is a substantial global cause of premature mortality and morbidity. They were acknowledged to be underestimates because they did not include cannabis and MDMA, or the burden attributable to hepatitis B, hepatitis C, or drug-related violence (14). The number of drug users and addicts in 2010 were approximately 210-250 million people globally (17). The extent of global illicit drug use remained stable in the five years up to and including 2010, at between 3.4 and 6.6 per cent of the adult population (persons aged 15-64). However, some 10-13 per cent of drug users continue to be problem users with drug dependence and/or drug-use disorders, the prevalence of HIV (estimated at approximately 20 per cent), hepatitis C (46.7 per cent) and hepatitis B (14.6 per cent) among injecting drug users continues to add to the global burden of disease, and, approximately 1 in every 100 deaths among adults is attributed to illicit drug use (18).

Justification and Rational

Early use of drugs increases a person’s chances of more serious drug abuse and addiction (23). As mentioned before, that substances change brains—and this can lead to addiction and other

serious problems. So preventing early use of substances may reduce the risk of progressing to later abuse and addiction. In early adolescence, when children advance from elementary through middle school, they face new and challenging social and academic situations. Often during this period, children are exposed to abusable substances such as cigarettes and alcohol for the first time; when they enter high school, teens may encounter greater availability of drugs, drug abuse by older teens and social activities where drugs are used and when they enter university, they think they are responsible enough to practice their abuse behaviors. At the same time, many behaviors that are a normal aspect of teen's development, such as the desire to do something new or risky, may increase their tendencies to experiment with drugs. Some teens may give in to the urging of drug-abusing friends to share the experience with them. Others may think that taking drugs (such as steroids) will improve their appearance or their athletic performance or that abusing substances such as alcohol or ecstasy (MDMA) will ease their anxiety in social situations. Teens' still-developing judgment and decision making skills may limit their ability to assess risks accurately and make sound decisions about using drugs. Drug abuse can disrupt brain function in areas critical to motivation, memory, learning, judgment, and behavior control. So, it is not surprising that teens who abuse alcohol and other drugs often have family and school problems, poor academic performance, health-related problems (including mental health), and involvement with the juvenile justice system (23).

From the above challenges, highly qualified studies in substances uses among adolescents are recommended especially in African countries including, Sudan where data on illicit drug use is limited. UNODC (22) reveals that there is a lack in the availability and reporting of data (Data challenges). This makes the formulation of evidence-informed drug policies and programmes difficult. We need to identify the magnitude of the problem and the characteristic of the of the population at risk, in order to adapt an appropriate interventions tackling the problem in target populations (4).

OBJECTIVES

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To study the prevalence and socio-demographic factors associated with tobacco use among university students in Khartoum state, in Sudan, 2014.

Research question

What is the frequency of tobacco use among Khartoum city university students and what are the factors contributing to its use?

Literature review

The use of psychoactive substances among adolescents and young adults has become a subject of public concern worldwide, partly because of its potential to contribute to unintentional and intentional injury (25). It is a global health and social problem with conditions and problems that vary locally (26).

Substance abuse among university students remains an important area of research due to the implications of early substance dependence on the future of the youth. Several studies in Asia, America and the United Kingdom showed widespread drug use among adolescents and youths, making this a problem requiring global attention (27, 28). (29). (30). Despite that established illicit drug markets in many developed countries have shown signs of stabilization, the drug use is increasing in many developing countries but, few studies were conducted in colleges and university in low income countries. A study in western Kenya demonstrate a high prevalence of substance use among college students in Eldort, Western Kenya (31). Also in a Nigerian university, the overall lifetime prevalence for substance use was high (32). Data on illicit drug use in Africa are limited; UNODC (22) reveals that there is a lack in the availability and reporting of data, particularly in Africa and parts of Asia, where data on the prevalence of illicit drug use and trends remain vague. Most of the challenges can be overcome by sustained efforts

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in priority regions and countries to support and improve the collection of quality data on these different aspects of illicit drug use.

The most commonly used drug in **Africa** continues to be **cannabis, followed by ATS**. Annual prevalence of cannabis use in Africa, particularly West and Central Africa, is much higher than the global average (5.2-13.5 per cent of the population aged 15-64). (22)The estimated prevalence of the use of **ATS** and **opioids** in all African subregions remains comparable to the global average; however, **cocaine** use is reportedly high in West and Central Africa and Southern Africa (22). Increasing trafficking of **cocaine** through the coastal countries of **West Africa might be the** leading cause of increase in cocaine use in that part of Africa.**Cannabis and opioids** are the two main substances contributing to demand for treatment for illicit drug use in **Africa**, with 64 per cent of all treatment for drug use reportedly provided for disorders related to cannabis use (22).

Factors associated with tobacco **use**

The pattern of drug use vary between different countries, e.g. in Studies in high-income countries, with high levels of cannabis use, have reported a common temporal ordering of drug initiation- alcohol and tobacco, followed by cannabis use, and then other illicit drugs (33, 34) , but This pattern is not consistent across countries.eg in Japan use of other illicit drugs is more prevalent than use of cannabis (35). Variations in patterns of drug initiation between countries and cultures suggest that entry into illicit drug use is dependent on social factors and drug availability, as well as characteristics of users and social settings that facilitate or deter use (6).

UNODC, (22) described the evolution of the drug use influenced by some factors as follow:

Socio-demographic factors, such as the population's gender, age and rate of urbanization,. If the demographic profile of a given society changes, drug use behavior may also change accordingly.

Socio-economic: factors, such as levels of disposable income, inequality and unemployment. Increased levels of disposable income may enable a larger number of people to buy illicit drugs,

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whereas high levels of inequality or unemployment may increase the propensity to use illicit drugs among those affected.

Socio-cultural factors: including changes to traditional value systems and the emergence of a relatively uniform "youth culture" in many countries.

Analysis also shows that the **availability** of and perceptions of the **inherent** dangers of drugs are important factors.

Another way of introducing the associated factors as extracted by one of **NIDA** publication (23) is:

Biological factors: Genetics**,** Gender**,** Mental disorders**.**

Environmental factors, Chaotic home and abuse**,** Parent's use and attitudes, Peer influences**,** Community attitudes**,** Poor school achievement.

Drugs factor: Route of administration**,** Effect of drug itself**,** early use, Availability and Cost.

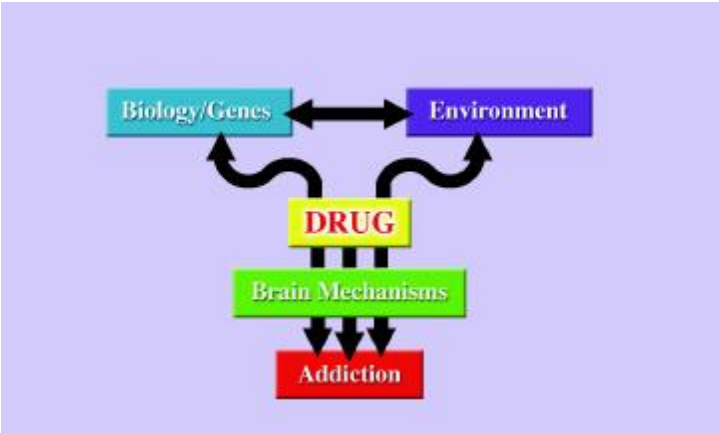

Figure (1): factors associated with drug use, NIDA publication. 2007

The risk of becoming a drug abuser influenced by the number and type of **risk factors** (deviant attitudes and behaviors) and **protective factors** (e.g., parental support) (36). The risk and protective factors of substance abuse can affect people of all groups, these factors can have a

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different effect depending on a person's age, gender, ethnicity, culture, and environment (37, 38). The potential impact of specific risk and protective factors changes with age. For example, risk factors within the family have greater impact on a younger child, while in adolescent, peer pressure has the great impact (39, 40). Early intervention with risk factors (e.g., aggressive behavior and poor self-control) often has a greater impact than later intervention by changing a child's life path (trajectory) away from problems and toward positive behaviors (41).

In Sudan

Study conducted in River Nile state (65) among children and adolescents (4-17 years) found (65) that the prevalence of tobacco use was quite low (2%, range 1-2%), but there was an abrupt increase up to 25% in late adolescence. Among the adult population aged 18 years and older the prevalence of toombak use (34%) and cigarette smoking (12%) among males were significantly higher than among females (2.5 and 0.9%, respectively). The prevalence of toombak use among the male population aged 18 years and older was significantly higher in the rural than in the urban areas (35% vs 24%), while cigarette smoking had a higher prevalence in urban areas (18% vs 12%). The highest rates of toombak use were found in rural areas among the male population ages 30 years and older (mean 46.6%, range 45-47%).

Methedology

Setting:

Khartoum is the capital of Sudan. It is a political, cultural and commercial centre. There are twelve public universities and seven private universities which contain large numbers of students and the overwilmming majority of them are in public sector. Moreover, there are considerable numbers of private colleges and institutes but contain tiny enough numbers of students to be studied. The study addressed substance use among Khartoum state university students population, and took into account the weight of the students in each university.

Participants:

Study population include: One thousand and eight hundred students, were selected from the approximately (278.000) students in public universities besides two hundred students were

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selected from approximately (31.000) students in private universities that fulfilled the selection criteria; which were the total counts of the students and number of college inside it, that the total number of the students be at least five thousands students, the cluster should include at least four colleges and all levels are available.Inside the university (public and private), students in the selected faculties, could be both sexes, in all educational levels were eligible for the study. External students, or those who did not complete their official registration procedures, and those absent at the time of surveying had been excluded. Universities that had total count less than five thousand students and less than four colleges and faculties that not contain all levels; had been be excluded from the study.

.Sampling:

Sample size calculation

Sample size was calculated according to the following formula+10% to compensate student that unable to contact or non response.

$$n = \frac{z^2 pq}{e^2(1-r)} * deff$$

z is a value in a normal distribution curve that equal to 1.96 at confidence 95%

P is the estimated proportion that present in the population, it was taken as 10.5 (taken from a survey that has been conducted in the year 2010 among Khartoum state university students).

q = 1-p

e is the desired margin of error. It was taken as2%

r is non response rate

deff, is the design effect, it was taken as 2.

$$n = \frac{1.96^2 0.105 * 0.895}{02^2(1-.9)} *2=2005.64$$

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Sample size =2006, Number of clusters was taken as 10 .Therefore the number of students in each cluster was: 2006/10 =200, 6. It was taken 200.

Sample selection:

The sampling technique was cluster sampling (multi stage). The total numbers of the students in both public and private universities revealed the great overwhelming of the public in comparing to private universities. Nine public universities and one private university were selected, by applying probability proportional to size (PPS), using an excel sheet. After selecting the sampled universities, (PPS) again used in selecting four colleges in each university, and all levels in each college (fourth, fifth, sixth) were included in the sample according to the weight of students in each one (percentage).The ultimate **sample unit** (students) was selected by a systematic random sampling technique from all levels in the selected colleges inside the selected universities.

Tools and Procedures:

Cross sectional study design is used in the study involving self administered questionnaire which is the **instrument** used for the collecting data. It was the WHO standard drug use questionnaire, validated and modified by local experts to make it suitable for local use as well as to increase its validity. The questionnaire has four sections. The first section relates to socio-demographic items, the second section assesses the pattern of use of different types of six substances or substances, the substances of inquiry includes tobacco, alcohol, cannabis, opiates, cocaine, amphetamines, and others (inhalers, hallucinogens, sedative and unknown names). The third section consists of information related to drug use by members of the respondents' family. The last section is about the knowledge of drug harmful, factors associated with the etiology of drug use, and the problems that acquired as consequence of use.

Pretest of the questionnaire:

Was carried among fifty students at a private university (National Alrabat University, faculty of pharmacy). These fifty students were excluded from the study. Following this, necessary minor modifications were made to simplify some of the terms. Furthermore, necessary explanations were given to the study participants on using the questionnaire. To measure the reliability of the

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questionnaire through the preliminary survey sample, the value of the Alpha Cronbach coefficient was extracted and equal 0.889>0.73 that means the questionnaire has good reliability.

Result

Data Summary

A total of 1924 university students, responded to the self administered questionnaire with 96.2% response rate.The sample was drawn from (309191) students in ten universities that were iligible to the study , two hundred students in each university, distributed to four equal clusters (colleges) inside the university. Both sexes were eligible to participate, and randomly selected.

When the samples were analyzed, one thousand and eighty three (56.3%) were found to be female, eight hundred and forty one were males (43.7%). The majority (74.5%) of the students was (18-22) years old, (15.1%) were above 22years and the minority (10.4%) was under18 years. Most of them (99.2) were Muslims, (.7) were Christian and the remaining only one participant of unspecified religion. A majority (94%) of the participants was not married, (4.4%) were married, (1%) were widows and only (.6%) were divorced. Most of them (89%) lived inside the country, and (11%) outside the country. The socioeconomic characteristics of study participants are detailed in table (4.1).

Among 422 study participants who currently use tobacco, the majority (about 70%) were cigarettes smokers followed by shisha smokers and snuff dippers which contribute to 25.8% and 25.4% of tobacco user's respectively. These are shown in figure (4.7). The sum of users for types of tobacco was higher than 422 because some students use more than one type of tobacco at the same time.(discussion)

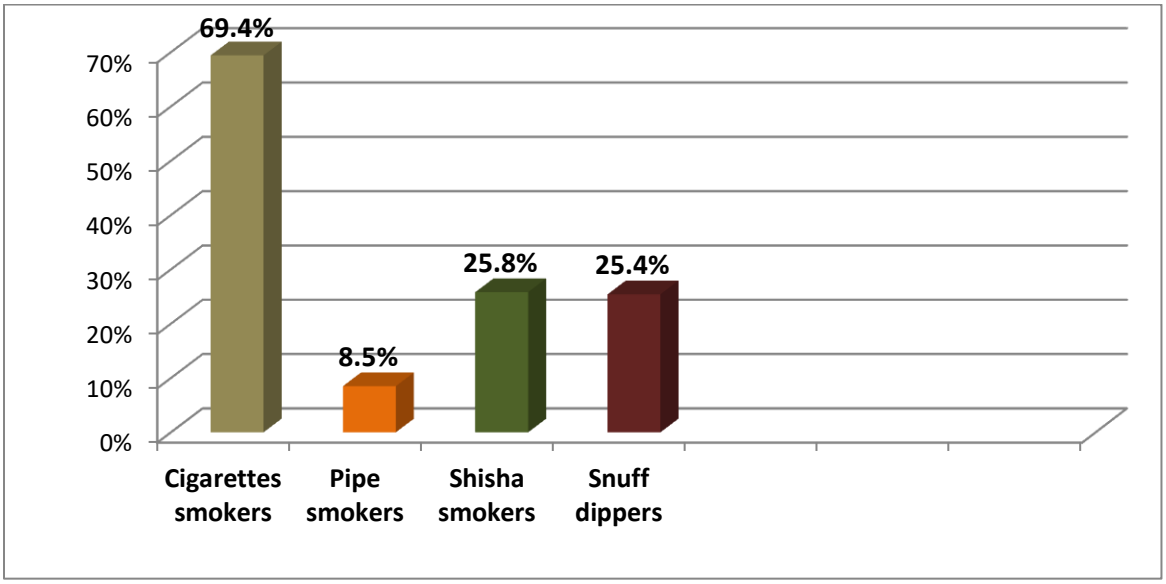

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Figure (4.7): Types of tobacco smoking among currently tobacco users, in Khartoum state universities, 2013. n=422

The tobacco smoking types stratification by gender was as below:

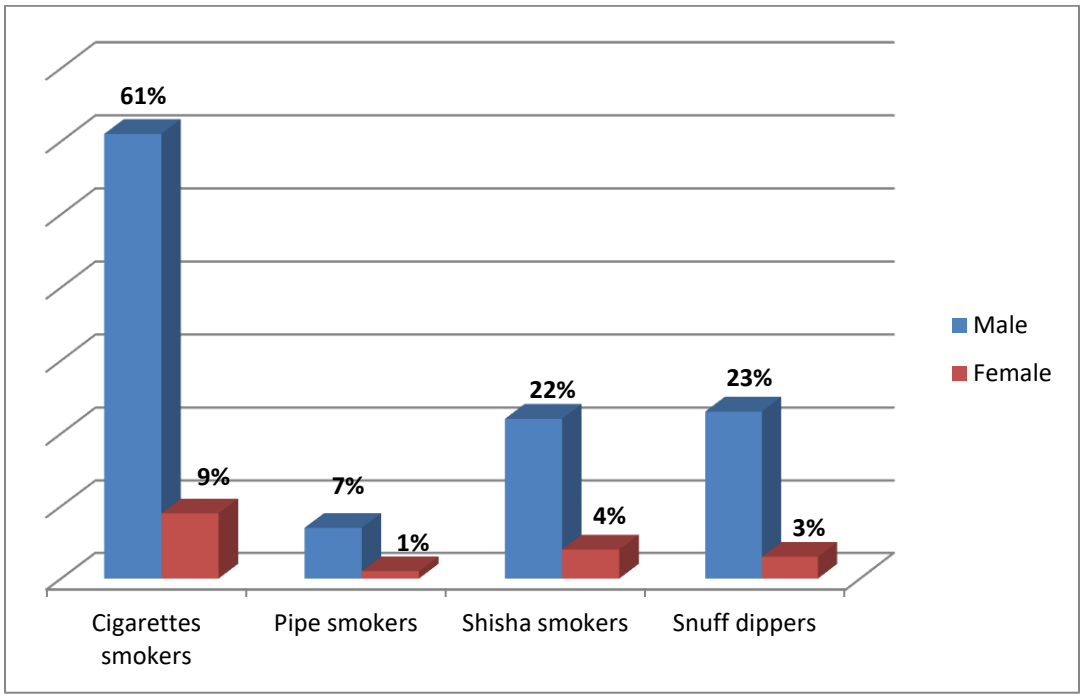

Figure (4.7B): Types of tobacco smoking among currently tobacco users stratified by gender, in Khartoum state universities, 2013. n=422

Association between socioeconomic factors and lifetime Prevalence rates of substance use: The association between other socioeconomic factors like economic status, country of growing up, marital status and presence of family members who use substances were differ from substance to another. Cross tabulation with testing of relationship significance by chi-square was used to determine significant associations. The findings were demonstrated in the tables (4.3 - 4.9).

Tobacco:

Table (4.3): Lifetime Tobacco use rates variation among socio-demographic variables, in Khartoum state universities, 2013.

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n=1924

VARIABLE	Lifetime tobacco use %	chi-square	p value <0.05
Gender Male Female	 61% 11%	523.2	0.000
Housing type with family with relatives Hostel Others (alone or with friend)	 35% 33% 25% 48%	23.1	0.000
Marital status Currently married Currently not married	 33% 32%	0.009	0.92
Place of growing Inside the country Outside the country	 33% 34%	0.22	0.64
Income Low Moderate High	 32% 32% 44%	7.55	0.02
Religion Muslims Non-Muslims	 33% 25%	0.45	0.50

Brief summary of socio-demographic factors association with substances use were as follows:

Gender, housing type and economical status were significantly associated in **tobacco,** use

Among 422 study participants who currently use tobacco, the majority (about 70%) were cigarette smokers followed by shisha smokers and snuff dippers which contribute to 25.8% and 25.4% of tobacco user's respectively. These are shown in figure (4.7). **Note**: The sum of users for types of tobacco was higher than 422 because some students use more than one type of tobacco at the same time

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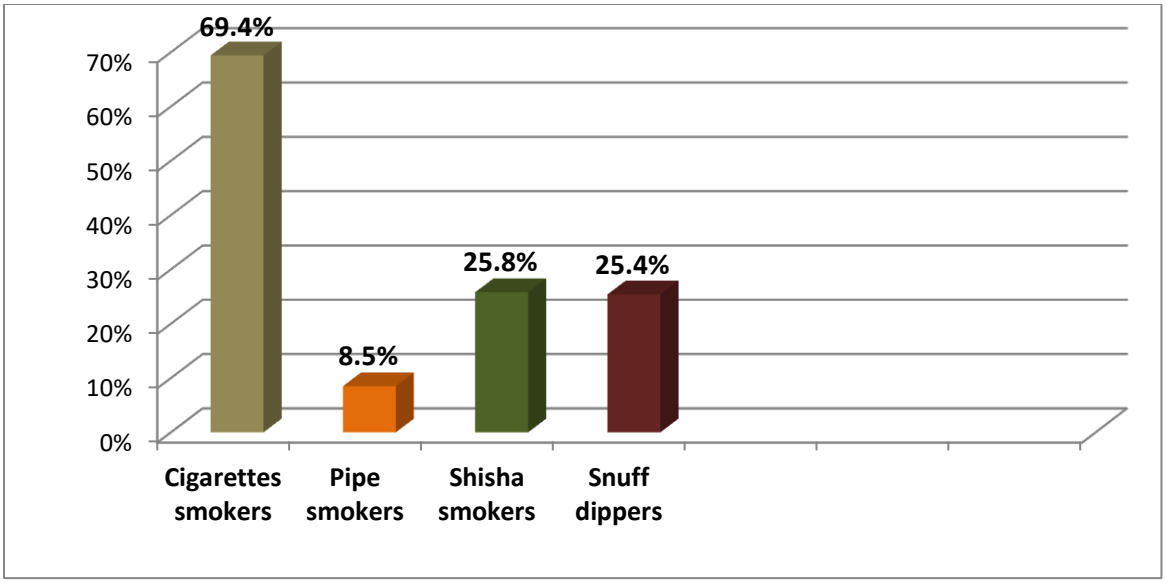

Figure (4.7): Types of tobacco smoking among currently tobacco users, in Khartoum state universities, 2013. n=422

The tobacco smoking types stratification by gender was as below:

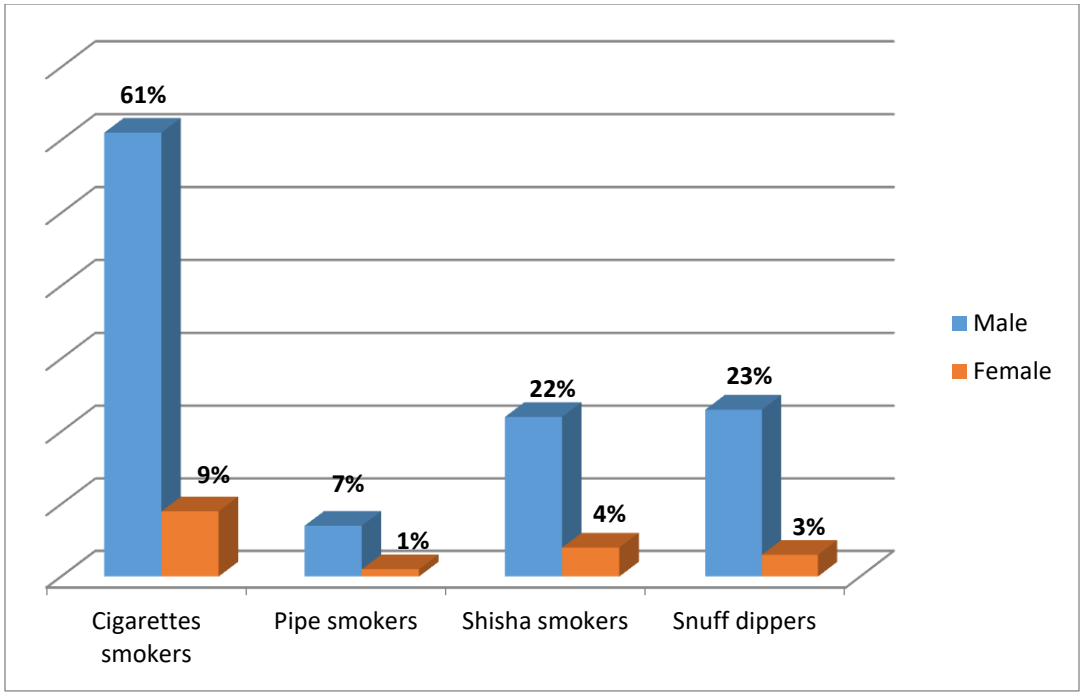

Figure (4.7B): Types of tobacco smoking among currently tobacco users stratified by gender, in Khartoum state universities, 2013. n=422

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Data analysis

To obtain the results of the statistical analysis of the study data, a practical analysis was used where the main factors were extracted, data where the study variables summarized in four main factors using the principal components method. Where it was found that the value of Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is 0.865> 0.50, and this indicates that the increased reliability of the factors obtained from the general analysis, as well as we judge the adequacy of the sample size, and we also find that the level of significance of the Bartlett test equal(0.000)<(0.05). This confirms that there is a statistically significant and significant relationship that can be performed in the factor analysis of the data. As the factors extracted are . (cigarette smoking, pipe smoking, shisha smoking, tobacco by snuff).

Sociodemographic correlates of tobacco

Table (1) : Analysis of variance of age variable with the type of tobacco use

		Sum of Squares	df	Mean Square	F	Sig.
Cigarette smoking	Between Groups	12.892	2	6.446	6.483	.002
	Within Groups	1910.108	1921	.994		
Pipe smoking	Between Groups	7.204	2	3.602	3.612	.027
	Within Groups	1915.796	1921	.997		
Shisha smoking	Between Groups	1.550	2	.775	.775	.461
	Within Groups	1921.450	1921	1.000		
Tobacco by snuff	Between Groups	2.302	2	1.151	1.151	.317
	Within Groups	1920.698	1921	1.000		

To find out which tobacco types are preferred by the members of the study sample according to the age variable, one way analysis of variance (One Way Anova) was done, as in Table (1).

From table (1) the analysis of variance shows that there is a significant difference between cigarette smoking and age group of university student tobacco smokers sig 0.002<0.05, also the

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table show that there is a significant difference between pipe smoking and the age group of university student tobacco smokers sig 0.027<0.05. Through the results of the analysis of variance to measure the difference in smoking tobacco by the shisha, the results did not show any statistical significance differences ,the value of the significance is 0.461 > 0.05, which leads to that there are no differences between the levels of ages and the way of tobacco use using shisha.Also the using of tobacco by snuffing is not significance sig 0.317 > 0.05, which leads to that there are no differences between the levels of ages and the way of tobacco use using snuffing.

Table (2) : Analysis of variance of economical status variable with the type of tobacco use

		Sum of Squares	df	Mean Square	F	Sig.
Cigarette smoking	Between Groups	14.499	2	7.249	7.297	.001
	Within Groups	1908.501	1921	.993		
Pipe smoking	Between Groups	1.806	2	.903	.903	.406
	Within Groups	1921.194	1921	1.000		
Shisha smoking	Between Groups	3.721	2	1.860	1.862	.156
	Within Groups	1919.279	1921	.999		
Tobacco by snuff	Between Groups	4.897	2	2.449	2.452	.086
	Within Groups	1918.103	1921	.998		

To find out which tobacco types are preferred by the members of the study sample according to the economic status variable, one way analysis of variance (One Way Anova) was done, as in Table (2).

From table (2) the analysis of variance shows that there is a significant difference between cigarette smoking and economic status group of university student tobacco smokers sig 0.001<0.05, also the table show that there is no significant difference between pipe smoking and economic status of university student tobacco smokers sig 0.406>0.05. Through the results of the analysis of variance to measure the difference in smoking tobacco by the shisha, the results did not show any statistical significance differences ,the value of the significance is 0.156 > 0.05, which leads to that there are no differences between the levels of economic status and the way of

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tobacco use using shisha.Also the using of tobacco by snuffing is not significance sig 0.086 > 0.05, which leads to that there are no differences between the economic status and the way of tobacco use using snuffing.

Table (3) : Analysis of variance of marital status variable with the type of tobacco use

		Sum of Squares	df	Mean Square	F	Sig.
Cigarette smoking	Between Groups	9.537	3	3.179	3.190	.023
	Within Groups	1913.463	1920	.997		
Pipe smoking	Between Groups	4.406	3	1.469	1.470	.221
	Within Groups	1918.594	1920	.999		
Shisha smoking	Between Groups	3.312	3	1.104	1.104	.346
	Within Groups	1919.688	1920	1.000		
Tobacco by snuff	Between Groups	36.212	3	12.071	12.283	.000
	Within Groups	1886.788	1920	.983		

To find out which tobacco types are preferred by the members of the study sample according to the marital status variable, one way analysis of variance (One Way Anova) was done, as in Table (3).

From table (3) the analysis of variance shows that there is a significant difference between cigarette smoking and marital status of university student tobacco smokers sig 0.023<0.05, also the table show that there is no significant difference between pipe smoking and marital status of university student tobacco smokers sig 0.221>0.05. Through the results of the analysis of variance to measure the difference in smoking tobacco by the shisha, the results did not show any statistical significance differences ,the value of the significance is 0.346 > 0.05, which leads to that there are no differences between the levels of marital status and the way of tobacco use using shisha.Also the using of tobacco by snuffing is a significance sig 0.000 < 0.05, which leads to that there are no differences between the levels of marital status and the way of tobacco use using snuffing.

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Table (4) : Analysis of variance of housing type variable with the type of tobacco use

		Sum of Squares	df	Mean Square	F	Sig.
Cigarette smoking	Between Groups	17.010	3	5.670	5.712	.001
	Within Groups	1905.990	1920	.993		
Pipe smoking	Between Groups	14.751	3	4.917	4.947	.002
	Within Groups	1908.249	1920	.994		
Shisha smoking	Between Groups	3.999	3	1.333	1.334	.262
	Within Groups	1919.001	1920	.999		
Tobacco by snuff	Between Groups	1.050	3	.350	.350	.789
	Within Groups	1921.950	1920	1.001		

To find out which tobacco types are preferred by the members of the study sample according to the housing type variable, one way analysis of variance (One Way Anova) was done, as in Table (4).

From table (4) the analysis of variance shows that there is a significant difference between cigarette smoking and housing type, group of university student tobacco smokers sig 0.001<0.05, also the table show that there is a significant difference between pipe smoking and housing type group of university student tobacco smokers sig 0.002<0.05. Through the results of the analysis of variance to measure the difference in smoking tobacco by the shisha, the results did not show any statistical significance differences ,the value of the significance is 0.262 > 0.05, which leads to that there are no differences between the levels of housing type and the way of tobacco use using shisha.Also the using of tobacco by snuffing is not significance sig 0.789 > 0.05, which leads to that there are no differences between the levels of housing type and the way of tobacco using snuffing.

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Table (5) : T-test for sex with the type of tobacco use

	t	df	Sig. (2-tailed)
Cigarette smoking	-19.607-	1922	.000
Pipe smoking	-6.538-	1922	.000
Shisha smoking	-4.970-	1922	.000
Tobacco by snuff	-2.230-	1922	.026

To find out the effect of sex on tobacco use, T-test was used for two independent samples as shown in Table (5). Where it was found that the relationship between tobacco smoking and sex was significant, that is, there were statistically significant differences between males and females in the use of cigarette smoking, where the values of the t value were equal to 0.000 <0.05. Also, we find that there are statistically significant differences between sex and smoking pipe use. Whereas, the t value of significance equals 0.000 <0.05. Also, we find that there are statistically significant differences between sex and the use of shisha in smoking. Where the values of t moral equals 0.000 <0.05. And also we find that there are statistically significant differences between sex and the use of tobacco by snuff. Where the values of t moral equals 0.026 <0.05.

Discussion:

A high response rate (96.2%) obtained from this study had been reported before by K.A.Oshikoya and A.Alli among Nigerian under graduates at Lagos university (110) , it could be due to the high level of education when compared with the secondary school students low response rate done by Lawoyin et al in similar studies in Nigeria (111).

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The result revealed that lifetime tobacco rate when compared to similar study conducted among college students in Eldoret, western Kenya.(31) has a similarity in the high figure, as Eldoret student had high lifetime tobacco rate (42.8%) when compared with other substances, also in this study lifetime tobacco using rate (32.8%) is predominant to other substances used.

The rate of current prevalence of tobacco was (21.9%) when compared to other substances. Among the current tobacco users, cigarette smokers represented (69.4%) of current tobacco users, followed by shisha (25.8%), then snuff dippers (25.5%) and the least were pipe smokers (8.5%).

Almost all of the tobacco users were males, 61% of male students were a life time tobacco users and only 11% of females were life time users. Similar cross-sectional survey (65) conducted in household setting in the River Nile state in Sudan, was nearly same in values of prevalence rate in urban areas, that snuff dippers use was (24%), but the value in rural areas was relatively high (35%), and the difference could be related to differences of setting, where the studies were carried on, and consequently the cultural differences between them. Thus, the acceptance of snuff dipper might be higher in rural areas than in the university or urban population. Also, both studies are the same in tobacco use rate which was higher among males than females. Male vulnerability in substance use was seen in almost all conducted studies and a cross-country comparisons of a systematic review (112) conducted in 14 of Sub Sahara of Africa (SSA) countries, revealed that the prevalence, and intensity (frequency and/or quantity) of tobacco use was higher among males compared to females across all countries.

The study obtained (48%) of students, who live alone or with their friends, and 44% of high income students were tobacco users. Those implicate the availability of money, may contribute to the increase of tobacco use.

The study found that, the rate of current tobacco use was highest in the age group above 22 years, and the current tobacco use rate found to be increasing with age and, approximately third of current users (29.9%) were above the age of 22years. These findings were similar to the finding of the cross-sectional study done in Sudan(65) found that, among children and

adolescents (4-17)years old, prevalence rate of tobacco use was quite low (2%), but there was an abrupt increase up to 25% in late adolescence , and the finding also came into agree with the systematic review (112) conducted in 14 of SSA countries, which found that males aged between 30 and 49 years used tobacco at higher rates than those of younger or older than this age range, and also found that among females, prevalence rates of smoked tobacco use increased steadily with age.

When socio-(demographic, economic and cultural) variables were controlled by logistic regression, life time tobacco use students were more likely to be males, at high economic status, and were living with a family.

The prevalence rate of past users of tobacco was 14% , it could reflect the ability to quit alone for tobacco, as they represented a third of all lifetime tobacco users (632 students) which is high and encourage applying programs for control, because good response is expected.

Conclusion

- This study has demonstrated a high prevalence of tobacco use among university students in a Low-income country, with tobacco use accompanied all other substances use.
- Types of tobacco users were demonstrated by study
- Socio-demographic and economic factors represent a very important influencing factors in tobacco use; differ between different types of drug and in their magnitude. Also, presence of family members of users who abuse substances reported association with all types of substances.
- Evolution of the drug use influenced by multiple factor, the findings support a multiple pathway model of drug use, where several different factors may contribute together resulting in substance use and abuse.

Recommendations

- Due to the considerably high levels of tobacco use among the university students, Ministry of health and Ministry of education need to collaborate in order to establish

prevention, interventions and policies that work towards reducing these levels by targeting the at risk populations, identified by this study, which is the adolescent that highly recommended, followed by other classes of the community because they influence each other's.

- Findings of our study showed that, rigorous trials of behavioral and pharmacological interventions for substance use are needed to be adopted by ministry of education and other educational institutes, and shall be focus on scalable and cost-effective interventions. Abusers of tobacco need to be provided with evidence-based, culturally competent substance-use treatment and care. It is thus advocated that campaigns against tobacco use should be incorporated in health education curricula of schools through them health of the student can be modified and health planning for all other communities should be related .Under graduates, curriculum should equally go a long way in preventing drug abuse and would have a high probability of success, through intense math media campaigns; youth club and activities and community-base movement; with special focus on the adverse consequences of the substances used and involvement of peers and families.
- Parental monitoring and supervision are critical for drug abuse prevention. These skills can be enhanced with training on rule-setting; techniques for monitoring activities; praise for appropriate behavior; and moderate, consistent discipline that enforces defined family rules. This task needs to be adopted politically.
- Education and information for parents or care givers reinforces what children are learning about the harmful effects of tobacco and opens opportunities for family discussions about the abuse of legal and illegal substances and also brief, family-focused interventions for the general population can positively change specific parenting behavior that can reduce later risks of substances abuse. These initiatives can be achieved through community leaders and donors.
- More research is needed to develop effective prevention strategy targeting not students only, but also, other social structure e.g. family, social institution and thus the larger community.

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