RESEARCH ARTICLE

HAZARDOUS DRINKING AND ALCOHOL DEPENDENCE AMONG UNIVERSITY STUDENTS OF MAHAJANGA

1,*Randrianarivo, R., 2Randriamihangy, N., 3Raobelle, E., 4Andriamandrato, H., 1Bemizaha, R, 5Rajaonarison, B. and 6Raharivelo, A.

[1]Chief of Clinical of Psychiatry, Psychiatric unit care of chu PZAGA Mahajanga Madagascar
[2]Internist, Head of Clinic in Cardiology, Head of Cardiology Department CHU Mahavoky Atsimo, Mahajanga, Madagascar
[3]Chief of Clinical of Psychiatry, Psychiatrist on Mental Health Section, Analakely Public Health University Hospital, Antananarivo
[4]Psychiatrist, Mental Helth Care of CHU Antanambao Tulear Madagascar
[5,6]Titular Professor of Psychiatry, Psychiatric Unit Care of CHUSSPA Antananarivo

ARTICLE INFO	ABSTRACT
	Episodic abuse drinking is mainly a current issue of public health with severe consequences including road accidents and the setup of alcohol dependence, causing number of diseases. A problematic alcohol use was identified among young students during their campus life. This study aims to set the following objectives, to determine the prevalence rate of hazardous drinking, alcohol dependence and to identify factors that foster this trend among students at the University of Majunga. A cross-sectional, descriptive and analytical survey study was conducted among medical, Biology&Earth Sciences students at the University of Mahajanga, on May 2017. The AUDIT questionnaire was used to assess the alcohol use. Male students in number of 464 were recruited for the study. Eighty point four percent of them had already experienced alcohol drinking. The average AUDIT score was $6,42 \pm 6,4$. Hazardous drinking was encountered in 16,5% and alcohol dependence in 19,4% of case. Some factors were associated to alcohol uses as the accomodation at the university student residences andparents with alcohol use history. A significant relationship was associated between high AUDIT scores and the following criteria: year of study, paternal alcohol use history, age of early onset of drinking, alcohol drinking and smoking antecedent. This study provided an insight on alcohol consumption among students and established the need of raising awareness.

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INTRODUCTION

According to the World Health Organization (WHO), alcohol abuse is responsible of 3,3 millions deaths that is 5,9% of worldwide population (OMS, 2015). In Madagascar, the prevalence rate of problematic drinkingwas 36,19% for the province of Antananarivo (Enquête). Alcohol consumption is a major worth noting behaviour knowing that it is anchored with culinary and festivity culture of Malagasy people (Andriambao, 1974)and considering the short, middle and the long run risks, for drinkers and neighbour's health, either for occasional or regular use (Richard, 2015).

*Corresponding author: **Randrianarivo, R.,**
Chief of Clinical of Psychiatry, Psychiatric unit care of chu PZAGA Mahajanga Madagascar.

The massive episodic alcoholism known as*binge drinking (BD)*is currently a huge concern of public health with drastic consequences including crashes on public roads, agressivity, sex agressions, school troublemaking, alcohol dependence and deaths (Duroy, 2015). Consumption of psychoactive substances among university students is a worldly concern (Beck, 2007). Thus the following study set objectives to determine the prevalence rate of hazardous drinking, alcohol dependence and to identify factors that enhance these behaviours.

MATERIALS AND METHODS

A cross-sectional, descriptive, and analytical study was conducted at the University of Mahajanga: Faculty of Human Medecine, and the Biology, Earth and Environment Sciences (FSVTE) department. The investigation had lasted for 5 months from March to July 2017.

Male students from the second to the sixth years, who gave their own consents, were included in the study. Sample population was parted into two batches: one group was made of students in Human Medecine selected in exhaustive manner and the other group ofthe FSVTE students that were randomly selected upon the method of allocation order. Each group comprised 232 students. The studied variables were the following : age, gender, student curriculum and year of study, marital status, residence, family and professional situation of parents, family alcohol use history, quantity of consumed drinks, alcohol related consequences, AUDIT questionnaire, other toxic substances uses (tobacco and marijuana). Data were collected on anonymous file and tested with the AUDIT (*Alcohol Use Disorders Identification Test*) which is a self-administered questionnaire developed by the WHO work group. The AUDIT questionnaire is a simple test made of 10 questions to determine whether a person show addiction to alcohol or not. Each response is scored from 0 to 4. The whole score comprises between 0 to 40. It enables to categorize patients, into 3 groups in more reliable manner:non drinkersor with lower risk level,binge drinkers and alcohol dependents. A score of 8 or less for male and 7 or less for female participants shows a lower risk. A score ≥ 8 for male and ≥ 7 for female represents either an hazardous or a problematic alcohol use. A score > 12 for male and > 11 for female candidate is associated with alcohol dependence. Once collected, data were entered, treated and analysed with an IBM SPSS Statistics 20 software and Microsoft office Excel 2013. The association was assessed with the Pearson Chi-square test which a significance threshold of $p < 0,05$.

RESULTS

We have recruited 464 students. Fourty five point three percent (n = 210) of the studied sample lived on campus residence (Table I). Students who had been lifetime alcohol users represented 83% (n = 387). However, the mean age of early onset of drinking was 17 ± 2,8 years and ranged from 4 to 28 years old, approximately 78% of students had their first drinking by the age of [15-19 years] (Table I). As for binge drinking: 22,2% of students were confirmed of having one episode of BD during the previous month, bier was the most incriminated drink in 60,6% of case (n = 131) (Table II). As for theco-occurrence with smoking, 8% of students were active smokers, the age of early smoking was estimated between 15 to 19 years in 68,60%. Marijuana consumption was found in 2,80% of students. The study revealed an AUDIT average score of 6,42 ± 6,4 (0-29). Alcohol dependence was located in 19% (n = 75) of case and hazardous drinking in 17% (n = 64). Over the half of study population making 64% (n = 248) showed low risk consumption. A high AUDIT score was significantly associated with the year of study (2nd year) (p = 0,001), the place of living (campus residence) (p = 0,001), paternal alcohol use problem (p = 0,031), age of early onset of drinking(p = 0,001), alcohol drinking history (p = 0,001), alcohol use during the past 30 days (p = 0,001), the frequency of alcohol consumption during the past 12 months (p = 0,001), the number of co-occurrence drinking and smoking (p = 0,001). No relation was established between the student curriculum and the AUDIT score (Table III).

DISCUSSION

It was observed that the majority of students under study (45,3%) lived in campus residence, 23,1% with roomates, 18,3% by them self, 7,5% with guardian 5,8% with parent.

The study led by Sinnasse and al. in 2016 reported different findings. In the study, 34,1% were alone, 23,9% with roomates and 33% with parents (Sinnasse, 2016). A french survey conducted on medical students in Paris reported that 71,5% of students lived with family member or with roomates, 21,5% were by them self, 7,0% were with roomates (Duroy, 2015). In foreign country, there is not a huge difference between the rentals of campus residence and private studios. Moreover, few students would benefit of university residence. In Mahajanga-Madagascar, students would insist to stay on campus residences failing enough financial support. Regarding to the alcohol consumption, 83,4% of students under study declared having at least one drinking lifetime experience. A survey conducted on students in Pharmacy Sciences from the 2nd to the 6th years at the University of Bordeaux, from October to December 2015 revealed that 95% of students had already used alcohol (Celia, 2017). The findings of this study were lower compared to those in west countries. It could be interpreted by the different habits among countries, particularly the point of view and use of alcohol. Nontheless, the findings were higher than those of Morocco and Tunisia respectively 17,4% (El Asri, 2017) and 15,1% (Chekib, 2017). Indeed, muslim religion plays an important role in these countries and alcohol consumption is almost prohibited.

In this study, the mean age of the early onset of drinkingwas 17 ± 2,8 yearsand ranged from 4 to 28 years. It was observed that 77,5% of the study sample had experienced first drinking at the age of 15 to 20 years. According to Sorel and al. of the University of Nantes-France, the age of first drinking was as earlier as from 2 to 22 years [88]. Fourty six point five percent (46,50%) of students declared having their first drinking when at high school, 30,70% when at the University. A french study pointed out that 93% of twelve grade high school students had already experienced alcohol drinking (Sorel, 2004). Such observation was confirmed by a study conducted at the University of Marrakech in 2005 which revealed that the age of consuming toxic substance come with the begining of the youth period (Manoudi, 2010). That could be explained by the fact that adolescents seeking for strong sensations like to taste psychoactive substances. During the past month, we found that 45,4 % had no episode of BD (Binge drinking), 22,2% admitted with one episode ofBD. A study led by Beck and al. conducted among young people of Haute-Normandie reported that 55,6% of boys aged 17 years had an episode of BD during the past 30 days and 25,6% of whom with at least three episodes (Beck, 2005). In France, the ESCAPD (Survey on health and consumption on call-up and preparation on defense day)published in 2014 that48,8% of adolescents of 17 years had at least three episodes of BDduring the past month (Spika, 2015). The difference of these findings could be explained by various period of investigation, but also by the size of the sample.

As noticed above, bier was the most consumed drink (60,60%) followed by strong liquors (25,50%) and wine (4,60%). Those results are similar to those of other authors [Sorel, 2004 ; Jean-Baptiste 2010 ; Richa 2012]. This trend could be explained by the fact that bier is viewed as low alcohol content drink and well accepted by a large number of students. It was observed that alcohol consumption by the students was significantly correlated with the paternal drinking history (p = 0,003). Suchobservation was confirmed by Duroy and al. (Duroy, 2015). We had noticed as well that living in campus residence was significantly related to alcohol abuse (p = 0,030).

Table 1. Distribution of the population by socio-demographic characteristics

Parameters	Number	Percentage
alcohol consumption		
Yes	77	16,60
No	387	83,40
first drinking at the age		
before 14 years	46	11,9
15 to 19 years	300	77,5
20 to 24 years	40	10,3
25 to 29 years	1	0,3
Place of living		
With parents	27	5,8
With guardian	35	7,5
Campus residence	210	45,3
With roommate	107	23,1
Lonely	85	18,3

Table 2. Frequency of consumption and amount of beverage consumed

Caractère de la consommation		Number(n)	Percentage (%)
How many times have you had 5 drinks or more in the last 30 days?	0	98	45,4
	1	48	22,2
	2	35	16,2
	3 – 5	17	7,9
	6 – 9	12	5,5
	≥ 10	6	2,8
Frequency of consumption in the last 12 months (number of times)	0	189	48,8
	< 1/month	117	30,2
	2-4/month	45	11,7
	2-3/week	20	5,2
	≥ 4/week	16	4,1
Type of drink	Beer	131	60,6
	Vin	10	4,6
	Pastis	1	0,5
	Champagne	2	0,9
	Punch	9	4,2
	Strong alcohol	55	25,5
	Cocktail	5	2,3
	Other	3	1,4

Table 3. AUDIT Questionnaire

		AUDIT Score			
		Consumption low risk	Consumption at risk	addiction	p
School year	2ᵉ	56	24	42	0,001
	3ᵉ	60	21	17	
	4ᵉ	71	9	4	
	5ᵉ	44	4	5	
	6ᵉ	17	6	7	
Place of living	With parents	13	5	4	
	With guardian	12	8	6	0,001
	Campus residence	101	36	47	
	With roommate	69	11	12	
	Lonely	53	4	6	
History of alcoholism father	Yes	95	36	34	0,031
	No	153	28	41	
First drinking at the age	before 14 years	14	5	27	0,001
	15 to 19 years	198	56	46	
	20 to 24 years	35	3	2	
	25 to 29 years	1	0	0	
History of drunkenness	Yes	163	56	67	0,001
	No	85	8	8	
					0,001
Consumption alcohol in the last 30 days	Yes	110	48	58	
	No	138	16	17	
Number of glasses per day	1 to 2 glasses	133	6	11	0,001
	3 to 4 glasses	74	20	18	
	5 to 6 glasses	25	12	8	
	7 to 8 glasses	14	9	18	
	≥ 10 glasses	2	17	20	
Tobacco smoke	Yes	4	14	17	0,001
	No	244	50	58	

Duroy and al. found a low association between hazardous alcohol use and lonely life (p = 0,051) (Duroy, 2015). However, a study conducted at the University of Lille2 France, reported that no significant relation was found between alcohol use and campus residence (Pernelle, 2014). The university practice of hazingfor newcomers, a common event occurring on campus residence would be considered as factor of alcohol use, under peer pressure, every new student was compelled to drink alcoholic beverage. Moreover, lonely student, by being far away from parents would constitute a favorable factor to free moves to drinking. Regarding to the alcohol use, the average AUDIT score was 6,42 ± 6,4 with a minimum of 0 and a maximum of 29 points. An hazardous drinking was found in 16,5% of case and 19,4% record for alcohol dependence. In 2010, a study led by Nakhli J.and al. in Tunisia among 266 students revealed an average AUDIT score of 3,5 ± 2,7 with 12% case of hazardous drinking and 11,7% of alcohol dependence (Jaafar, 2016). The results of this study were higher than those of african countries. Nevertheless a study conducted in Paris-Descartes-France, revealed similar result with 20,5% of dependence (Duroy, 2015).This outcome is neither a burden nor bad consequences for the country. Campaign awareness is to be set to tackle the early age occurence of such dependence. In this study, alcohol use before the age of 15 had significant relation with the AUDIT score (p < 0,001). The earlier the age of first drinking the more the alcohol dependence increases. The precocity of toxic substances addiction is another significant risk factor in predicting occurrence of binge drinking or alcohol dependence. A canadian longitudinal study confirmed this constatation: among those who regularly started drinking at 11 or 12 years, 13,5% presented an alcohol abuseand 15,9% met the criteria of dependence. On the opposite, amid those who started to drink at 19 years or above, only 2% were bindge drinker and 1% alcohol dependent (Prescott, 1999). As for the single institution study, alcohol dependent students use at a timemore tobacco products (p < 0,001). Duroy D. and al. reported a similar notice. They found significant association between abuse drinking and smoking (p < 0,001) (Duroy, 2015). The dependence to alcohol would increase addiction to other toxic substances as tobacco.

Limitation of the study: Like all studies, this work encountered some limitations: it was a descriptive, single institution study and the size of sample study was less satisfactory. A self-administered questionnaire AUDIT, drafted in french, was poorly understood by students despite of their university level. Nevertheless, it is a preliminary Malagasy study which will provide an insight on alcohol consumption among univesrsity students and demonstrated the necessity to raise their awareness.

Conclusion

The rate of alcohol dependence and that of heavy episodic drinkingare not to be negliged among Malagasy students. Personal and family background together with the way of living at the university campus were factors to foster these behaviors. A strategy to fight drinking and smoking should be instaured at the University.

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