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Relationship between Alcohol and Tobacco use among Students of Faculty of Medical Techincal Sciences of Tirana

Esmeralda Thoma[1], Irida Pano[2]

[1, 2] University of Medicine in Tirana; Faculty of Medical Technical Sciences

Abstract: ***Aim:*** ***The aim of this study is to estimate the prevalence and correlation of alcohol and tobacco use among students of FMTS and their familiar heredity.*** ***Methods:*** ***This is a study performed at FMTS during April 2013, part of which were 700 students of this faculty. They underwent different questionnaires like AUDIT tests. The students were chosen completely randomly.*** ***Results:*** ***The questionnaires were distributed to 700 students and they completed them anonymously. 537 of the students were female and 163 male. 460 students were enrolled in Bachelor studies, 120 in Master studies and 120 in Part-time studies. The majority of students (69%) reported current use of cigarette`s and they call themselves regular users of cigarettes, 19% of them reported occasional cigarette use. 7.4% of students reported current alcohol use. 5% of alcohol use students reported regular use of alcohol and they were alcohol abusers, meanwhile 2.4% of them reported occasional use of alcohol. 21.1% of students reported concomitant use of alcohol and tobacco.*** ***Conclusions:*** ***These data's should make us more attentive to interfere on educational programs earlier for example during adolescence and to explain the health risks that comes from cigarette and alcohol use.***

Keywords: alcohol, regular use, cigarette, abuse

1. Introduction

Cigarette and alcohol use often develop concurrently, and smoking is especially common among youth treated for alcohol and other drug (AOD) use disorders. Cigarette smoking or tobacco use contributes to increased incidence, morbidity, mortality from cancer, heart disease, stroke, complications of pregnancy and respiratory illness. Cigarette smoking is associated with cough and phlegm production, an increase in the number and severity of respiratory illnesses and reduced rate of lung growth and function. Active smokers and passive smokers are exposed to high levels of nitrosamine NNK (nicotine derived nitrosamino ketone; 4-metil nitrosamino-1(3 pyridyl)-1-butanone. NNK is a human carcinogen known to produce lung cancer, as well as cancer of pancreas, nasal mucosa and liver. Alcohol and tobacco use may lead to major health risks when used alone and together. In addition to contributing to traumatic death and injury (e.g., through car crashes), alcohol is associated with chronic liver disease, cancers, cardiovascular disease, acute alcohol poisoning (i.e., alcohol toxicity), and fetal alcohol syndrome. Smoking is associated with lung disease, cancers, and cardiovascular disease [1]. Additionally, a growing body of evidence suggests that these substances might be especially dangerous when they are used together; when combined, alcohol and tobacco dramatically increase the risk of certain cancers [2].

2. Cancers of the Mouth and Throat

People who drink and smoke are at higher risk for certain types of cancer, particularly those of the mouth and throat [3-5]. Alcohol and tobacco cause approximately 80 percent of cases of cancer of the mouth and throat in men and about 65 percent in women [6-9]. Alcohol and tobacco co-use appears to substantially increase the risk of at least one type of cancer of the esophagus [10].

2.1 Liver Cancer

Although some studies have reported that alcohol and tobacco may work synergistically to increase the risk of liver cancers [11], more research is needed to explore this issue.

2.2 Cardiovascular Disease

Tobacco use and alcohol consumption both are major risk factors for various forms of cardiovascular disease. However, little evidence exists to suggest that drinking and smoking together raise the risk more than the sum of their independent effects [12,13].

2.3 Are there biological and genetic factors involved in co-use?

Why do tobacco and alcohol use co-occur so frequently? Clearly environmental factors contribute to the problem. Both drugs are legally available and easily obtained. Over the past two decades, however, it also has become clear that biological factors are at least partly responsible. Although tobacco and nicotine have very different effects and mechanisms of action, Funk and colleagues [14] speculate that they might act on common mechanisms in the brain, creating complex interactions. These possible mechanisms are difficult to study because alcohol and nicotine can affect people differently depending on the amount of the drugs consumed [15-17] and because numerous factors, including gender and age, influence the interaction between nicotine and alcohol [18,19]. Still, a common mechanism might explain many of the interactions between tobacco and alcohol, as well as a possible genetic link between alcoholism and tobacco dependence.

3. Mutual Craving

Studies show that consuming tobacco and alcohol together can augment the pleasure users experience from either drug alone. For example, in a study by Barrett and colleagues

[20], subjects were given either nicotine- containing or nicotine-free cigarettes and asked to perform progressively more difficult tasks in order to earn alcoholic beverages. The subjects who smoked nicotine-containing cigarettes worked harder and drank more alcohol than those smoking nicotine-free cigarettes.

3.1 Common Brain System

Evidence increasingly suggests that both alcohol and tobacco may act on the mesolimbic dopamine system, a part of the brain that is involved in reward, emotion, memory, and cognition [14] . Brain cells (i.e., neurons) that release dopamine—a key brain chemical involved in addiction—have small docking molecules (i.e., receptors) to which nicotine binds. Evidence suggests that the interaction between alcohol and tobacco may take place at these nicotinic receptors. When nicotinic receptors are blocked, people not only tend to consume less nicotine [21] but also less alcohol [22] .This common mechanism of action may explain some of the interactions between alcohol and tobacco, including why alcohol and tobacco can cause users to crave the other drug and the phenomenon of cross-tolerance.

3.2 Tolerance and Cross-Tolerance

A decrease in a person's sensitivity to a drug's effects often is referred to as tolerance. This phenomenon occurs when a person must consume more of a substance in order to achieve the same rewarding effect. In the case of alcohol and tobacco, this puts him or her at greater risk for developing dependence. Cross-tolerance—that is, when tolerance to one drug confers tolerance to another—also has been documented in people who smoke and drink [14] .

3.3 Genetic Factors

Recent studies suggest that common genetic factors may make people vulnerable to both alcohol and tobacco addiction. Clearly, both alcohol and nicotine dependence runs in families. Identical twins (who share 100 percent of their DNA) are twice as likely as fraternal twins (who, like all siblings, share 50 percent of their DNA) to be nicotine and alcohol dependent if the other twin is dependent. Recently, the Collaborative Study on the Genetics of Alcoholism—the first study to examine the human genetic makeup (or genome) for regions that involve both alcohol dependence and smoking—has identified genes and regions of genes that may be involved in both AUDs and nicotine dependence. There are an estimated 1.3 billion adult smokers among the world's six billion people, with increases anticipated [23]. Cigarette smoking is the second leading risk factor for death worldwide [24-26] .More than six million people die every year as a consequence of tobacco smoking [34]

AIM of this study is to estimate the prevalence of alcohol and cigarette smoking and to find out if there is any correlation between alcohol use and smoking behaviors among students of Faculty of Medical Technical Studies (FMTS) in Tirana.

4. Material and Methods

This is a study performed at FMTS during april 2013. FMTS is part of University of Medicine of Tirana, which is capital city of Albania. In this study were enrolled 700 students of this faculty. They underwent to AUDIT questionnaires and the other one for tobacco and drug use. The students were chosen completely randomly.

The questions of this questionnaire are as listed below and for each question is different alternatives, which are evaluated with different points. To this test, it was requested some other information from students like: age, gender, city where they came from and civil status.

AUDIT test was developed by World Health Organization in 1982 as a simple way to screen and identify people who are at risk of developing alcohol problems. The AUDIT test focuses on identifying the preliminary signs of hazardous drinking and mild dependence. It is used to detect alcohol problems experienced within the last year. It is rated 92% effective in detecting hazardous or harmful drinking. The answers are scored on a point system; a score of more than 8 indicates an alcohol problem, which needs further investigation.

Questions of AUDIT test:

1. How often do you have a drink containing alcohol?
2. How many drinks containing alcohol do you have on a typical day when you are drinking?
3. How often do you have six or more drinks on one occasion?
4. How often during the last year have you found that you were not able to stop drinking once you had started?
5. How often during the last year have you failed to do what was normally expected from you because of drinking?
6. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
7. How often during the last year have you needed an alcoholic drink first thing in the morning to get yourself going after a night of heavy drinking?
8. How often during the last year have you had a feeling of guilt or remorse after drinking?
9. Have you or someone else been injured as a result of your drinking?
10. Has a relative, friend, doctor, or another health professional expressed concern about your drinking or suggested you cut down?

The other questionnaire was about the use and frequency of use of illicit drugs and legal ones, like cigarette smoking, use of prescription and non prescription drugs. This questionnaire is described below:

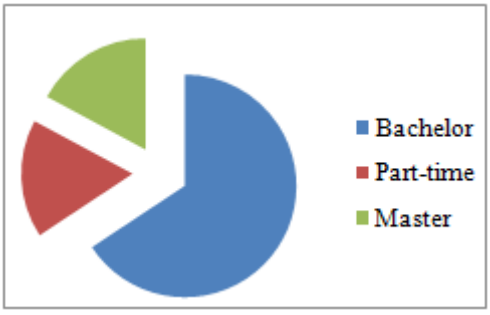
1. Do you smoke cigarette?
2. How many cigarettes do you smoke in one single day?
3. When did you start to smoke?(age)
4. Why you smoke (for pleasure, to be in the mode, have cravings etc.)
5. Have you ever used Antidepressants (Paxil, Prozac, Zoloft etc)
6. Have you ever used dissociative anesthetics (ketamine, PCP/angel dust)?

7. Have you ever used hallucinogens (LSD, mescaline, psilocypine/magic mushrooms)?
8. Have you ever used Antipsychotics (Haldol, Tegretol, Depakine etc)?
9. Have you ever used OTC(over the counter) drugs(acetaminophen, ephedrine, pseudoephedrine, antihistaminics etj)
10. Have you ever used sedative-hypnotics (benzodiazepine, xanax, Librium etc)?
11. Have you ever used opioids, or their derivatives (codeine, morphine, opium, heroine, fentanyl, methadone etc)?
12. Have you ever used stimulants (amphetamine, ecstasy, crack, cocaine etc)?

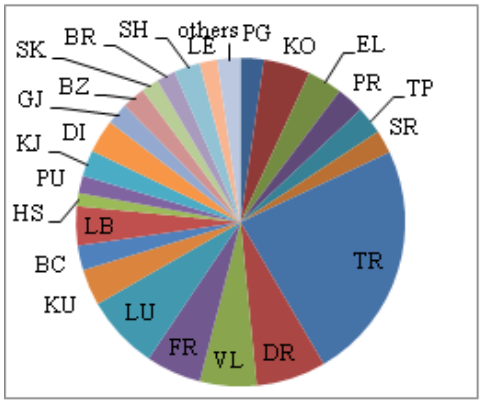
For each of them was requested to specify the amount, the reason of using them and frequency of use. In this study we have analyse just the answers about cigarette smoking behavior.

5. Results

The questionnaires were distributed to 700 students and they completed them anonymously. 537 of the students were female and 163 male. 460 students were enrolled in Bachelor studies, 120 in Master studies and 120 in Part-time studies. The average age of students was 22±3. They came from different cities of Albania; 9.2% from Tirana; 4.85% from Durres, 85.8% from other cities. (it is described below). 47.1% of students came from rural areas, and 52.9% from urban areas. The majority of students (69%) reported current use of tobacco and they call themselves regular users of tobacco, 19% of them reported occasional cigarette use. 7.4% of students reported current alcohol use. 5% of alcohol use students reported regular use of alcohol and they were alcohol abusers, meanwhile 2.4% of them reported occasional use of alcohol.

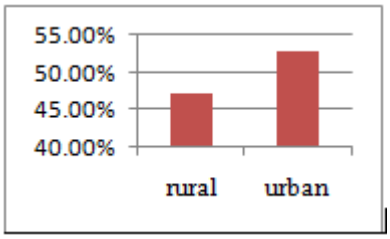


Graphic 1: The distribution of students according to their level of studies



Graphic 2: Distribution of the origin of the students

As we can see in the graphic above, the majority number of students comes from Tirana, which is the capital city of Albania and populations of Tirana is higher compared with other cities of Albania. Moreover, the majority number of students comes from urban areas than from rural areas 53.5% vs 46%.



Almost 68% of students referred for occasional use of tobacco, mainly during weekends, at the party`s, or as they say: just to pass the time and being in fashion. In this study, the majority numbers of regular users of tobacco were males, respectively 65.2% of them. From 537 females of the study, 26.4 % of them, referred to smoke regularly. All of regular users, referred to smoke more than 10 cigarettes a day. The average amount of cigarettes they smoke is 13±2. But, if we consider the large differences between females/males participants, we must say that the majority number of current and regular smokers are females; 142 vs 106.

Table 1: Users of tobacco according to the gender and frequency of use

Female	*Male*	
142(26.4%)	106(65.2%)	Regular users of tobacco
176(32.7%)	34(20.8%)	Occasional users of tobacco

In this study results, that 7.4% of students were considered harmful users of alcohol, or probably with alcohol use problems, that means they collected ≥ 8 points. 51.66 % of students reported occasional use of alcohol, which was often associated with cigarette smoking, despite the fact that from these students (362), 28.1% reported that they do not smoke usually. All of the students (100%) that collected more than 8 points were males. It is interesting the fact that 18.6% of females referred to drink 2-4 times a month, mainly during parties and weekends. The average amount of drinks they have, was between 2-5 drinks for one night, or one party, which means they often may be considered as binge drinking behavior. According to NIAAA (National Institute on Alcohol Abuse and Alcoholism) binge drinking means drinking so much within about 2 hours that blood alcohol concentration (BAC) levels reach 0.08g/dL. For women, this usually occurs after about 4 drinks, and for men, after about 5. Drinking this way can pose health and safety risks, including car crashes and injuries. Over the long term, binge drinking can damage the liver and other organs. Almost 22.34% of females that were answered to the questionnaires referred that they do not drink any kind of drink, never.

All the males that collected more than 8 points, which means all the males that were considered probably with alcohol use problems, were cigarette smokers too. 21.1% of students reported for concomitant use of alcohol and tobacco. The average amount of cigarettes they smoke per day was higher

than that of regular smokers: 20±2 vs 13±2. They referred that during the time they spend drinking they smoke most.

The average age they smoked for the first time was 12±3. In general, the average age students consumed alcoholic beverages for the first time was 16±2, but among the students with alcohol use problems(AUD), the average age of the first time of consuming alcohol was lower; 13±2.

100 % of students with AUD referred that first they smoked cigarettes and then, they started to consume alcohol regularly. 100 % of students with AUD referred that during the time they consume alcohol beverages, they smoke mostly. The number of cigarettes they smoke during the time they are drinking alcohol increases 3-6 fold. From the students that collected more 8 points, 44.2% of them reported that they have at least one familiar that uses alcohol and tobacco. 55.8 % reported that they do not have any familiar that uses alcohol, 34.6% referred that they do not have any familiar that smokes.

6. Discussion

In this study participated 700 students from FMTS; 537 females and 163 males. 26.4% of females and 65.2% of male's students were reported as regular users of cigarettes. 7.4% of students were reported with alcohol use problems and 100% of them are males. Meanwhile 18.6% of females reported occasional use of alcohol and 22.34% of females don't drink alcoholic beverages ever. 21.1% of students reported concurrent use of alcohol and tobacco. 44.2 % reported that they have at least one familiar with alcohol problems that make us think that the environmental and social factors have an important role on the quantity of alcohol they drink.

These data's become more important if we consider even the fact that in Albania, cigarette smoking and alcohol drinking among males it is not called a problem at all. When it comes to females, it is considered as a cashier. This allows males students to fall more easily on alcohol problems and alcohol abuse. Nowadays, cigarette smoking is increasing rapidly among females, and especially among young females. Now it seems like it`s become fashionable to smoke, consequently, health problems because of cigarette smoking among females will increase and will become a greater problem for public health, society, and government.

In other studies, performed abroad there are different statistics about the use of alcohol and cigarettes smoking among students.

In one study performed by Mikolajczyk et al. in 2007 it was estimated that the prevalence of cigarette smoking among students in Germany was 22.3%, in Poland was 10.4% and in Bulgaria was 23.3%. In another study performed in China by Zhu T et al. in 2004 it was found out that the prevalence of smoking behaviors among students of medical students was 40.7 between males students and 4.4% between females students. In our study it is significantly higher: 65.2% in males and 26.4% in females students. There are too many studies focusing on alcohol use problems and the prevalence of alcohol use among students. In our study, the prevalence of alcohol use problems was 7.4% and 100% of them are males; 18.6% of females students report for occasional use of alcohol; 22.34% don't drink ever. In other studies is reported different percentage of prevalence of alcohol use and alcohol problems. Some of them are described in the table below.

Table 3: the prevalence of cigarette smoking in different studies

Study	*State*	*Year*	*n*	*Smokers*
Mikolajczyk et al.	Germany	2005	803	22.3%
	Poland		591	10.4%
	Bulgaria		709	23.3%
Zhu et al.	China	1994-1995	980	45.1%
Rea B et al.	Italy	2003-2004	822	22.4%

Table 3: Prevalence of alcohol use among students according to different studies

Study	*State*	*Year*	*n*	*Alcohol users*	*questionnaire*
Yuri Silva Toledo Brandao et al.	Brasil	2006	1435	Alcohol abusers: F 47.2%; M 55.4% Occasional use: F36.0%, M 56.7%	CAGE
Akmatov et al.	Germany	2006-2007	2910	heavy drinking: 80 % alcohol problems: 20%	CAGE
Thakore et al.	Canada	2009	175	86% currently drinking	CAGE
Ozgur et al.	Turkey	2008	1720	9.7% alcohol use problems M:F =3:1; 65% drinks once a month or more frequently	CAGE

7. Conclusions

The prevalence of alcohol drinking and cigarette smoking is higher in males students than in females students of this faculty. Despite the fact, that alcohol use is not a widespread problem among students of FMTS, it is a problem when it is associated with cigarette smoking, and, taking into the consideration of their age, it can be converted into a real problem. So, it is necessarily that the public health systems and all the society to interfere with the educational programs at schools, in order to avoid even the influence of friends in the consumption of alcohol and cigarettes. Even though the government has increased the price of cigarettes and alcoholic beverages as a preventive measure, they are still very easy reachable and this, eases students` abuse with these substances.

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