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EPIDEMIOLOGICAL ASPECTS OF ALCOHOL DRINKING IN CHILDREN AND ADOLESCENTS

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Abstract

A growing number of children and adolescents drinking alcohol have become a global issue. Drinking alcohol at a young age is associated with alcohol dependence in adulthood and numerous further medical and social issues.

Alcohol (ethanol) is the oldest drug used since the dawn of civilization, being used as food, medicine or for religious and social purposes. It was considered a gift from gods, a belief that persisted for centuries. Although it was regarded as healing and tonic for the body, its abuse was condemned. First alcoholic beverages were those fermented naturally, wine and beer; distillation appeared during the 8-9th centuries.

The average annual consumption among adults in the US is of 6.7 liters of pure alcohol per capita. A statistics conducted among adolescents shows that 75.1% had consumed alcohol until the last year of high school and 41% until the last year of junior high (Johnston et al., 2006; Donovan, 2009).

Alcohol consumption in Europe is higher than in any other region of the world, with a consumption of 12.18 liters per capita /year for adults. (Ministerul S n t ții, 2014)

It significantly increased among children and adolescents where the average age of onset decreased from 14 to 12 years.(Hibell et al, 2014)

A report made by AAA prevent in 2013 showed alcohol drinking among adolescents in different European countries. The country with the highest annual consumption of alcohol among adolescents is Hungary (45.9%), followed by Estonia (44.6%) and Denmark (39.8%). The lowest consumption is in Bosnia and Herzegovina (7.5%) and Iceland (9.3%). In case of occasional and binge drinking (ingestion of large quantities of alcohol in a short period of time), the first positions are held by Ireland (26.1%), Finland (25.5%), Denmark (22.2 %), Norway (19.2%) and Germany (16.7%), and the last by Armenia (2.9%), France (3.9%), Iceland (4.4%).

Romania ranks the fifth among the countries with the highest consumption of alcohol, with 12.7 liters of pure alcohol per capita/ year in people aged over 15 years. (Reijlink et al., 2011; Ministerul S n t ții, 2014)

1.The average age at which young people start drinking is 14 years. According to 2007 ESPAD study, 74% of Romanian teenagers aged between 15 and 16 have consumed alcohol in the last 12 months, and 12% before the age of 13 years. Males are more affected, 37% are boys and only 14% girls among adolescents who reported drinking in the past month. The same study concluded that Romanian teenagers are moderate alcohol consumers compared to those in Western Europe. (<http://www.aaaprevent.eu/>)

The legal age for alcohol drinking is 16 years in Italy, Portugal, between 16 and 18 years depending on the type of alcoholic beverage in Denmark, France, Austria, Germany, Switzerland, 18 years in most of Europe and 21 years in the US. (Donovan, 2009; Hibell et al., 2014; <http://www.espad.org>)

Acute alcohol poisoning is the most common complication of alcohol drinking occurring after consumption of large quantities of alcohol in a short period of time. In small children, under 5 years, it is random, being more common in adolescents. Symptoms vary depending on the amount of alcohol ingested. There is an increased risk of hypoglycemia in a small child under 5 years and symptoms are similar to those in an adult in

children over 11 years.(Ringenberg et al., 2013) There is a link between blood alcohol content and the degree of acute intoxication, requiring a much smaller amount of alcohol for acute intoxication. (Lamminpää, 1994) 0.5 Ingestion of 1 gram/kilogram of body weight causes acute poisoning and ingestion of more than 3 grams/kilogram of body weight can be fatal. (Lamminpää, 1994; Ministerul S n t ții Republicii Moldova, 2013)

There are 3 stages of intoxication, *excitation phase* when disinhibition occurs, euphoria, visual and reaction rate disturbances appear, *incoordination phase* - when vomiting, speech, gait and balance impairment occur by affecting cerebellum and third stage, *alcoholic coma* which is deep, often leading to death (Lamminpää, 1994; Ministerul S n t ții Republicii Moldova, 2013). Hallucinations are also common.

During adolescence and young adulthood, the brain is in constant development, emotional and cognitive changes occurring.

If chronic exposure to alcohol occurs during this time, then irreversible damage to structure or function in the central nervous system appears, which will subsequently cause memory impairment, poor school performance, dropouts, aggression, attention deficit.

In addition to changes in the brain, chronic alcohol drinking causes disorders of the cardiovascular system, intestinal tract, liver, pancreas and anemia. (DeWit et al., 2010)

Alcohol ingestion during pregnancy is harmful, toxic to the fetus, it occurs especially in the central nervous system after passing the placenta barrier. In pregnant women consuming alcohol, we can observe placental abnormalities, miscarriages, premature birth, birth of dead fetuses, fetal alcohol syndrome (FAS). (Petrescu et al., 2007; Dorobanțu et al., 2011)

2.In 2013, the incidence of fetal alcohol syndrome (FAS) was 8 per 1,000 births worldwide and 1 out of 13 pregnant women in the US dealt with heavy drinking. (Landgraf et al., 2013; <http://www.cdc.gov/ncbddd/fasd/data.html>)

Drinking alcohol at any time during pregnancy can cause SAF of varying degrees of severity: specific craniofacial anomalies occur during first two quarters of pregnancy (microcephaly, microphthalmia, short nose with enlarged base, narrow upper lip, retrognathism) accompanied by cardiovascular malformations, renal, central nervous system abnormalities, skeletal abnormalities, growth retardation, visual and auditory disorders. Memory, feelings, school performance is especially involved if ingestion of alcohol occurs in the third quarter of pregnancy. These patients have a poor prognosis, most cases, over 90%, presenting psychiatric disorders and have difficulties in adapting to schools, violence,

deviant behavior and attention deficit occur in more than 50% of the cases (Dorobanțu et al., 2011)

Treatment is difficult, it is not curative, requiring a multidisciplinary team made of physicians from different specialties (correction/improvement of associated malformations), psychologists, speech therapists. It is difficult to quantify the amount of alcohol ingested causing SAF, as it could be observed in cases of occasional drinking during pregnancy. (Dorobanțu et al., 2011; May et al., 2013). There is just one prevention method that of mother's abstinence during pregnancy. Chronic alcohol drinking before the age of 16 significantly increases the risk of dependence in a future adult. The younger is the age of onset of alcohol drinking, the higher is the likelihood of developing dependence. (Reijlink et al., 2011; DeWit et al., 2000)

There are multiple causes if alcohol drinking. The *family environment* is very important in the development of a future adult. Many children whose parents work abroad turn to drugs, alcohol, smoking, aggressive behavior in their attempt to get the attention of their parents or even to make them return into the country. Alcohol drinking among parents predisposes to abuse among children, a genetic component being also mentioned in this sense. (Sumnall, 2011) Separation or death of one of the parents fights between parents or between children and parents are also linked to alcohol drinking among adolescents. Parents have a key role in preventing alcohol drinking among adolescents.

3. A family relationship with strong, honest family values based on trust and respect may decrease the incidence or even prevent this vice among youth. (<http://www.aaaprevent.eu/>)

4. *Environmental factors* have a significant influence on adolescents. It is a critical age when integration and adaptation into different environments matters, these having a leading role in alcohol drinking. Curiosity, desire to have new experiences, independence, maturity could also be added. Alcohol is used in most cases for socializing purposes. (Schuckit, 2009; <http://www.aaaprevent.eu/>). One should not overlook the role of alcohol advertising producers, movies in which drug and alcohol abuse are presented as normal or even as an example. (<http://www.cdc.gov/ncbddd/fasd/data.html>)

Depression, low self-esteem, emotional disappointments are also heavily involved in alcohol abuse, the state of euphoria, increased confidence being among the main effects being sought and obtained during drinking

The consequences of alcohol drinking at an early age can be devastating. It is among the three main causes of death between the age of 12 and 20

murder, suicide, accidental injuries (especially car accidents). (Donovan, 2009)

There is also risk of sexual abuse or having unprotected sex with the wrong people.

Underage alcohol drinking is associated with poor academic performance, drug addiction, suicide attempts or delinquent behavior during secondary and high school. Young adults face integration problems, inability to retain employment, strong drugs abuse, aggressive even criminal behavior.

It is necessary that strong strategies should be implemented nationwide to prevent alcohol drinking and health and social consequences resulting from this behavior.

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