

PAPER • OPEN ACCESS

Teenagers and Alcohol in the Arctic Region: Factors, Features, Prospects for Prevention on the Example of the Kola Peninsula Region

To cite this article: A Pryalukhina *et al* 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **302** 012087

View the [article online](#) for updates and enhancements.

Teenagers and Alcohol in the Arctic Region: Factors, Features, Prospects for Prevention on the Example of the Kola Peninsula Region

A Pryalukhina, A Trotsenko and I Khrapenko

Murmansk State Arctic University, Murmansk, Russia

trotsenko2007@yandex.ru

Abstract. The paper is devoted to the development of addictive behavior in adolescents and the possibilities of its prevention. The authors presented a theoretical analysis of alcoholism in general and identified the main issues on the example of adolescents of the Kola Peninsula. This paper focuses on the environmental peculiarities of the problem, since living conditions in the polar region contribute to the development of addictive behavior. The study involved 539 respondents of both sexes, with an average age of 15 years, who formed two groups: deviant and standardized adolescents. Considering that subjects with addictions could modify their answers to be more socially desirable, the deviant group was formed based on the data provided by organizations working with them. The empirical research identified the psychological factors of alcohol addiction of adolescents, determined and analyzed their manifestations specific for this age group. It presented detailed prescription of mental states, alcohol consumption motives, communication and organizational skills, specificity of responsible behavior, locus control, style of family education and relations. The research also revealed the relationship between these indicators. It was found that adolescents with alcohol addiction had problems with somatic and mental health; the motives for alcohol consumption included social, pseudo-cultural and hedonistic motives. The mental state of adolescents affected the alcohol addiction and depended on their communication skills. The study of the locus control in both groups revealed no significant differences. Both groups had the prevalence of the external locus control and the low level of responsible behavior. The research showed that the preferences of a specific paternalism led to the formation of a propensity for alcohol consumption. The paper identified the key aspects of adolescent alcoholism in Kola Peninsula region, which could be used as basis for prevention activities.

1. Research rationale

Alcohol consumption has negative health effects and contributes significantly to the increase in mortality and disability of the population worldwide. Preventive measures taken at the early stages of alcoholism development process will significantly reduce the damage to society.

According to estimates of the World Health Organization (WHO), in 2014 more than 3 million deaths and 5.1 % of illnesses and injuries all around the world were related to alcohol problems.

In 2016 the GBD presented the results of large-scale and mass comparative analysis of alcohol-related diseases and their health burden from 1990 to 2016 in 195 countries [1]. The research used a comparative risk assessment method for the burden of disease associated with use of alcohol. They examined 23 age groups (from 0–6 days to > 95 years), which included both sexes. The calculations show that 2.8 million deaths were related to alcohol consumption. The distribution of alcoholism varies by region and country.



Alcohol is most consumed in Eastern Europe and South Africa. In 2016 globally 99.2 million people had drinking issues.

It is known that adolescent alcoholism develops 3-4 times faster as compared with adults [13]. Adolescents who consume alcohol represent one of the most vulnerable categories of the population of the Russian Federation. The data of Rosstat organization show that in 2015 the number of adolescents showing a tendency to drink increased. In Russian small towns, boys are more alcoholized than girls [19].

Adolescents are sensitive to any social changes and are most at risk of getting into difficult life situations [11; 12; 16; 17], which leads to dismal mood, low interest in school and other activities, damage of interpersonal relations in the family and social groups [9; 13; 10; 18]. Karen J. Mu, Sara E. Moore, Kaja Z. LeWinn [4] noted that alcohol abuse affects the causes of death in this age group - injuries, crimes, attempted suicide - and is associated with other types of deviant behavior (drug use, sexual activity, many sexual partners). Adolescent alcoholism has impact not only on a person's education (future professional life), but generally entails serious consequences for society (antisocial behavior), as well as for the health care system (public health problems, alcoholic psychosis, somatic disorders, disability, mortality).

For example, Liam Mahedi and others [5], referring to the work of De Bellis Maryland [6], think that in adolescence the psyche continues to evolve and undergoes structural and functional changes over a short period of time. Given the severity of the social problem of alcoholism associated with violations of relationships within the family (between parents and children), it is necessary to identify the type of parentalism in the families of adolescents with alcohol addiction.

2. Region selection justification

Geographically, alcohol addiction in Russia progresses as the population moves north. Southern regions have lower rates of alcohol addiction. Alcoholism of the indigenous peoples of the North has been noticed for a long time. It is important to emphasize that the indigenous northern peoples of Russia, Canada, USA, Finland belong to different anthropological groups. Their gene pools of these peoples, as noted by Kozlov A.I., Kozlova M.A., Vershubskaya G.G., Shilov A.B. [14], Borinskaya S., Marusin A. [2], Anna Banerjee [3], Michael Savic [7], White A. [8] are far from identical. According to scientists, the biological basis for the development of alcoholism is very complex and controlled by several genes, the distribution of which significantly varies in different populations.

The Murmansk region, located on the territory of the Far North, also has the problem of underage drinking. The adolescents in the Far North of the Russian Federation has some unique characteristics. For example, the specifics of living beyond the Arctic Circle (polar night and day, atmospheric pressure drops, low air temperature throughout the year, limited amount of oxygen due to geographical location, etc.), which provoke dismal mood and general emotional background. All these factors affect developing organism, which is experiencing the age-related crises that provoke alcohol addiction. According to the statistics of the narcological dispensary in 2016 in Murmansk 344 people (15–19 years old) had alcohol addiction. The situation is worsened by current social situation, which contributes to the development of chronic stress in the conditions of Arctic region, uncertainty, fear of reality, and desire to escape with the help of alcoholic intoxication.

3. Scope of research

General factors and psychological characteristics of adolescents predisposing them to development of alcohol addiction and possible preventive measures.

4. Goal of research

The purpose is theoretical and practical substantiation of the factors of alcoholism and the characteristics of adolescents who consume alcohol, which will be used as basis for development of preventive action plan.

5. Methodology and results

The basis of the theoretical analysis is the integrated cognitive approach. The empirical research program was developed to study the motivation and prevalence of alcohol use among young people, as well as the factors contributing to the development of alcohol addiction among young people of the Kola Peninsula.

The research was carried out from 2013 to 2017 on the bases of Murmansk public schools and involved a total of 539 respondents of both sexes with average age of 15 years.

The modeling of empirical research and justification of method for investigating the prerequisites, characteristics, and determinants of alcohol addiction development in adolescents faces the need to conduct a comparative analysis of standardized and deviant groups of adolescents.

At the first stage of empirical research we formed a sampling of deviant adolescents. This group was identified based on the data obtained from the City Information and Methodological Center for Education Workers and from the Territorial Body of the Federal State Statistics Service in the Murmansk Region. The standardized sampling was a control group.

At the second stage we used a battery of tests to determine the psychological factors of adolescent alcohol addiction and their manifestation: mental states, alcohol consumption motives, communicative and organizational skills, specific behavior, locus control, style of family education, paternalism and relationships.

The third stage of the study was devoted to the analysis of results of deviant and standardized adolescents using multiple statistical analysis tools.

We used the following methods to assess the psychological factors: motivation and pronounced tendency of alcohol consumption were identified by the method of Zavyalova V.Yu. "Motivation for alcohol consumption"; mental states (anxiety, frustration, aggressiveness, rigidity) were diagnosed using the method of Eysenck H. "Self-assessment of mental states"; communicative and organizational skills and tendencies were evaluated using Sinyavsky V.V. and Fedorishin B.A. "Methods for assessing communicative and organizational propensities (COS - 1); degree of responsible behavior was estimated using the questionnaire of Kocharyan I.A. "Questionnaire for diagnosis of personal symptom complex of responsibility (QDPSCR) and evaluation of its psychometric characteristics"; locus of control was assessed using a test-questionnaire of J. Rotter (adapted by Bazhina E.F., Golyunkina E.A., Etkind A.M.) "The level of subjective control"; style of family education, parental relations and family relationships were assessed using the following tools: Scheffer E. and Bella R. adapted by Nesheret T.V. "Measurement of parental attitudes and reactions" ("PARI"), Varga A.Ya., Stolin V.V. "Diagnosis of parental relationship", Eidemiller E.G. and Justitskis V.V. "Family Relationship Analysis" (ABC), Furmanov I.A., Aladin A.A., Furmanova N.V. "Parents assessed by their children".

The validity of the results was evaluated using the Fisher statistical test for independent samples, compared in pairs, with the statistical significance of $p \leq 0.01$, taking into account the variance factor. The group error probability was controlled with Bonferroni correction and the critical level of significance was 0.015. The statistical significance, nature and strength of the relationship between the studied parameters was carried out using the Pearson correlation coefficient (significant correlation $r_{xy} \geq 0.7$ for $p \leq 0.01$).

Let us turn to the results of primary research among all subjects ($n = 539$) according to the method of Eysenck G. "Self-assessment of mental states". We can single out a general trend for the entire sampling: the level of aggressiveness varies from medium to high.

But there are also features that have been identified in adolescents due to other mental states ($n = 539$): 44% of subjects are sociable and have average level of anxiety, however, they show uncertainty under unreasonable circumstances. In 20% of subjects, the level of anxiety is high, i.e. such adolescents are distinguished by uncertainty, despondency, and fear of taking responsibility. A high level of frustration (anxiety, despondency, uncertainty) was demonstrated by 33% of respondents. In 22% of subjects the level of frustration is average, they have despair, emotional distress due to failures, and inability to cope with difficulties. Among 25% of respondents, a high level of rigidity is noted, which indicates sensitivity, inability to make their own decisions, disinhibition, etc. 56% of subjects have average rigidity, they show adequate emotional response in a situation when they must make a moral choice.

Considering the goal of the research, the results of the tendency of adolescents to alcohol addiction were analyzed using the method of V.Yu. Zavyalov. During the study 539 subjects showed behavioral deviations in the form of "alcohol abuse" (3%) and "the presence of painful dependence on alcohol" (7%). It means that only 10% of the total number of subjects are somehow dependent on alcohol, which is 54 people, among whom 78% (42 people) are boys and 22% (12 people) are girls. We can draw a preliminary conclusion that adolescent boys are more susceptible to the effects of alcohol than girls. The results of several psychological

tests carried out among these 10% of subjects, suggest that adolescents with “the presence of mental dependence on alcohol” also have the following characteristics:

- need to take the next dose of alcohol;
- simplified system of relations with parents, friends, and peers;
- insecurity and dissatisfaction with themselves;
- absence of need for school training and leisure activities.

Adolescents with "alcohol abuse" deviation have physical and mental health problems, they are characterized by a predominance of unstable character traits, as well as a fulminant development of alcoholic psychoses.

According to Kopylova A.V. social (traditions, holidays) and hedonistic motives (pleasure) or licentious behavior (especially upbringing or family life) can serve as the basis of alcohol addiction development.

Further research was carried out based on the data obtained also by the method of Zavyalov V.Yu. ("Motives of alcohol consumption") to identify the highest priority motives for alcohol consumption among 54 subjects with alcohol addiction.

It has been determined that the leading motives for alcohol consumption are pseudo-cultural, ataractic and hedonistic:

Pseudo-cultural motives - 56% of subjects. They play an adaptive role in the micro-social environment of the individual. In this case, it is not so much alcohol consumption that matters to a person, but a demonstration of this behavior to others.

Ataractic motives – 22% of subjects. The purpose of the ataractic motives is to eliminate emotional discomfort. Alcohol plays the role of a drug that relieves the symptoms of mental distress.

Hedonistic motives - 22% of subjects. They are manifested in the desire for pleasure and contribute to the rapid increase in good mood to a sense of joy and euphoria.

The structure of alcohol motivation must be considered when developing preventive programs, using them as “targets” for preventive actions. Any method of preventing and eliminating alcohol addiction implies an active communication of the specialist with the subject. This peculiarity prompted to investigate the level organizational and communicative skills and tendencies among respondents with alcohol abuse.

Results by the method of Sinyavsky V.V. and Fedorishin B.A. (n = 54) were as follows: 33% of the subjects had a low level of communicative skills, 11% had a lower level below average, 33% had a high level, and 22% had a very high level. It can be concluded that the mental state of adolescents affects the alcohol consumption and depends on their communication skills.

The interrelation of the concepts of “morality” and “deviation” can be viewed from the position of integrative qualities, which manifest themselves in the form of fulfillment of moral norms and rules (one of the forms of control), undertaken obligations, readiness to analyze their actions and deeds.

In this regard, the results obtained by the method of J. Rotter "Locus of Control" among 54 adolescents of the experimental group already indicate that 70% have an external locus of control, and 30% - the internal one.

The largest percentage, both in the control group (n = 485, no alcohol abuse), and in the experimental group (n = 54; alcohol abuse) have a pronounced external locus of control. This type of control is specific for people, who in case of failures and adverse outcomes of situations blame the circumstances and other people, their emotional instability is associated with practical non-mediated thinking. Such adolescents pay attention to external manifestations of certain behavior and demonstration of their abilities. Teenagers with an internal locus can control their reactions and inner life and attribute any result of their activity to their own efforts, abilities and competence.

The next step of the study was the identification of responsible behavior of adolescents with alcohol addiction (according to the method of Kocharyan I.A. “Personal Resistance Symptom Diagnosis Questionnaire and assessment of its psychometric characteristics”), which can also serve as an important criterion for choosing preventive and curative methods of working with dependent adolescents (n = 54). Among the 50% of the experimental group (n = 54), “self-affirmation” was expressed as a type of responsible behavior, in 20% and 20%, respectively, “ethical” and “self-sacrifice” as a type of responsible behavior, in 10% - “normativity” as responsible behavior.

Consider the results of the personality symptomatic complex of adolescents who are prone to alcohol by describing each personality type and the corresponding type of responsible behavior. According to I.A. Kocharyan, "self-affirmation" corresponds to the desire to avoid excess responsibility and to make difficult decisions. For such people it is not typical to take initiative and responsibility. However, they need to have high self-esteem and recognition from others.

Symptomatic complex "ethics" is characterized by a high degree of morality, which is manifested in the performance of any task with a high degree of responsibility, and they recognize the importance of their actions as well as of other people.

The personality symptom complex "self-sacrifice" is characteristic of people who are trying to prove their need to others, therefore they often take on too much. They do not like being controlled, but they like to control others. They are prone to manipulation and create situations when others think that they cannot do without this person.

The "normative" person tries not to break the rules, to observe traditions and norms, regardless of social norms. Normativity also manifests itself in the fear of change.

Based on the results of control group ($n = 485$) half of the respondents are characterized by the formation of responsible behavior, and the remaining 50% are not characterized by a responsible attitude towards any activity.

The distribution of results in the experimental group ($n = 54$; $\phi^*e=1.01<\phi^*c=1.31$, $p\leq 0.01$) showed that only 20% of the respondents can be described as responsible people, the remaining 80% have insufficient responsible behavior.

Based on the data, we can say that the results in the control and experimental groups are similar, i.e. most adolescents throughout the general sampling have a weak pattern of responsible behavior.

Given the severity of alcoholism problem in current society, it is important to develop preventive measures aimed at the formation of responsible behavior of the younger generation [15]. The most important condition is the family factor. To identify the impact of this particular factor, a study was conducted to determine the style of family education, parental relationships and family relationships for teenagers prone to alcohol. The prevailing parenting styles make it possible to clarify their patterns and development of alcohol addiction in adolescents:

Indulging hyperprotection. Parents surround the adolescent with excessive care, increased attention, and offer ready-made solutions. As a result, a teenager, on the one hand, strives to be a leader, to be in the center of attention, his needs are realized within the family, he has a high level of aspirations, on the other hand, he loses the ability to overcome difficulties on his own, the slightest failure could lead to a nervous breakdowns (failure of volition skills);

Dominant hyperprotection. Excessive care (restriction of autonomy, underreporting by a teenager of his ability for the sake of "his own safety"), high requirements and strict control (permanent bans) is a type of failure of family upbringing. An inconsistent style forms lack of initiative, desire for entertainment, a teenager develops striving for risk as a consequence of his infantilism.

Placing the conflict in the field of education. Contradictory type of upbringing is manifested in the constant indulgence of the child by one parent and rejection by the other. Against the background of family conflicts and emotional alienation, a teenager is perceived by adults as a "loser".

Specific parenting styles, on the one hand, influence the parent's attitude towards the adolescent and certain lifestyle paradigms, and, on the other hand, towards the child himself and his role in the family. We assume that emotional distancing, "loser" role, as well as family conflicts arise due to the parents' uncertainty about the chosen parenting style and requirements for their child.

It is also worth noting that the indulging style has a high probability of developing a child with co-dependent behavior, which in a more mature age leads to the development of other forms of deviant and addictive behavior.

Our research confirmed that the preference for one or another type of parenting styles may lead to development deviant behavior (in this case, a tendency to drinking). Indulging protection has an extremely negative impact on the personality. The most negative consequences of such education are the formation of codependency and, on its basis, various forms of deviant behavior.

6. Conclusions

1. Adolescents with “alcohol abuse” deviation have physical and mental health disorders, predominant unstable character traits, as well as a fulminant course of alcoholic psychosis.
2. Analysis of motivation for alcohol consumption allowed to determine the dominant ones. The top three social and psychological motives include social (alcohol is taken during holidays); the second motive is pseudo-cultural, which mark a teenager’s aspiration to adapt to the “alcoholic values” of the social microenvironment in which he lives. The leading place is taken by hedonistic motives.
3. The mental state of adolescents affects the alcohol use and depends on their communication skills.
4. The preference of a certain parentalism style can surely lead to formation of a particular type of deviant behavior, in this case, - the alcohol addiction.

References

1. Degenhardt Louise and GBD 2016 Alcohol and Drug Use Collaborators 2018 The global burden of disease attributable to alcohol and drug use in 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016 *Lancet Psychiatry* **5** 987–1012 doi.org/10.1016/S2215-0366(18)30337-7
2. Borinskaya S *et al* 2009 Distribution of alcoholism protecting alcohol dehydrogenase ADH1B*47His allele in Eurasia *Am. J. Hum. Genet* **84**(1) 89-92
3. Banerjee A and Shah C 2017 Ten-year experience with fetal alcohol spectrum disorder; diagnostic and resource problems in indigenous children *Pediatrics and Children's Health* **22**(3) 143–147 doi.org/10.1093/pch/pxx052
4. Mu K J *et al* 2015 Internet use and adolescent binge drinking: Findings from the Monitoring the Future study *Addictive Behaviors Reports* **2** 61–66 doi.org/10.1016/j.abrep.2015.09.001
5. Mahedi L *et al* 2018 Alcohol use in adolescence and subsequent working age: results from a large birth cohort among the population *Alcohol and Alcoholism* **53**(4) 501 doi.org/10.1093/alcalc/agy005
6. De Bellis M D *et al* 2000 The volume of the hippocampus in alcohol disorders in adolescents *I J Psychiatry* **157** 737–44
7. Savic M *et al* 2016 Defining “drinking culture”: A critical review of its meaning and connotation in social research on alcohol problems *Drugs: education, prevention, and politics* **23**(4) 270-282
8. White A *et al* 2015 Convergence of patterns of alcohol use and related outcomes among women and men in the United States, 2002–2012 *Alcoholism: Clinical and experimental studies* **39** 1712 - 1726
9. Erevik E K *et al* 2017 Alcohol use among Norwegian students: demographic, personal, and psychological health characteristics *Northern Alcohol and Drug Research (NAD)* **34**(5) 415-429 doi.org/10.1177/1455072517709918
10. Cronin S *et al* 2016 Investigating the relationship between childhood maltreatment and alcohol misuse in a sample of Danish young adults: Exploring gender differences *Northern Alcohol and Drug Studies* **33**(3) doi.org/10.1515/nsad-2016-0022
11. Edwards A C *et al* 2014 Adolescent Alcohol Use Is Positively Associated With Later Depression in a Population-Based U.K. Cohort *Journal of Studies on Alcohol and Drugs* **75**(5) 758–765 doi.org/10.15288/jsad.2014.75.758
12. Philip J E and Sherman D K 2018 Integration of self-affirmation and realization intentions: the impact on alcohol consumption by college students *Annals of Behavioral Medicine* **52**(8) 633–644 doi.org/10.1093/abm/kax032
13. Kislitsyna O A 2009 Teenagers and alcohol: risk factors *Voprosy narkologii* **2** 66-78
14. Kozlov A I *et al* 2012 *Health of the indigenous population of the North of the Russian Federation: on the verge of centuries and cultures* (Perm': Perm. gos. humanitar.-ped. un-t) 160 p.
15. Pryaluhina AV and Laptev LG 2016 Problems of psychological assistance to overcome the need for dissatisfaction of adolescents who are prone to alcoholism *Chelovechesky kapital* **8**(92) 27-34
16. Rean A A 2015 Family, social attitudes and antisocial behavior of children and adolescents *Rossiiskij psihologicheskij zhurnal* **2** (1) 29-40
17. Chekhovskaya M V and Rozhney D A 2018 Features of self-attitude and resilience in older

adolescents with deviant behavior *Territoriya novykh vozmozhnostey Vestnik VGUES* **2** 159-167

18. Shulga T I and Filatov AV 2017 Features of the relationship of deviant adolescents with mothers *Vestnik Moskovskogo gosudarstvennogo oblastnogo universiteta Seriya. Psikhologicheskie nauki* **3**

19. Shurygina I I 2010 Changing the gender characteristics of alcohol behavior. Setevoe izdanie (nauchno-prakticheskiy zhurnal) *Sotsial'nye aspekty zdorov'ya naseleniya* **2**