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Review Article

Responsibility concerning condom use contributing to the considerable decrease in the abortion rate in Russia

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Abstract

The abortion rate in the former Soviet Union has been reported as the highest in the world, caused not only by insufficient availability of modern contraception but also by lack of consideration of the potential consequences of unprotected sex, particularly pregnancy. During the last two decades, the abortion rate in Russia has declined considerably, binge drinking tending to decrease as well. The prevailing opinion is that binge drinking and alcohol consumption prior to sexual relations are risk factors for the non-use of condoms. The association between alcohol consumption and high-risk sexual behavior is explainable within the framework of the alcohol myopia theory. Moreover, the behavior may be influenced by slowly progressive personality changes that are developed due to chronic alcohol abuse and heavy binge drinking.

Keywords: Condom Use; Alcohol Misuse; Alcohol Abuse; Binge Drinking; Frontal Syndrome; Alcohol Myopia Theory

Introduction

According to the literature and observations in the Soviet Union (SU) from the 1970s and subsequently [1,2], heavy binge drinking and alcohol consumption at sexual encounters have been risk factors for the non-use of condoms, and hence of unintended pregnancy and sexually transmitted infections (STI). Furthermore, chronic alcohol abuse and heavy binge drinking may be associated with progressive personality changes that are conductive to the irresponsible behavior, including non-use of condoms. The abortion rate in the former Soviet Union was reported to be the highest in the world [3,4], with abortion sometimes referred to as the nation's predominant method of contraception [4,5]. Since the mid-1990s, the abortion rate in Russia has been steadily decreasing [4], but was still the world's highest in 2010: at 37.4 per 1000 women aged 15-44 years, 19.6 in the USA and 21.2 in the Ukraine [3]. According to the World Health Organization (WHO), the recorded adult per capita consumption in the Russian Federative Republic within the former Soviet Union (SU) increased during the 1960's, but was relatively stable during the 1970's (around 7.5-8 liters of pure alcohol annually). It reached a maximum of about 8.5 liter/year before the start of the anti-alcohol campaign in 1985 [1]. For 2008-2010, average values of total (recorded plus unrecorded) alcohol consumption were reported as being 15.1 in Russia, 9.2 in the USA, and 13.9 in Ukraine [6]. As previously discussed, high alcohol consumption and heavy binge drinking in the former SU are in part tradition, but also have been the direct and indirect result of some governmental policies and the irresponsible way of life of many people during the Soviet era [2,7].

The abortion rate in the former Soviet Union was reported to be the highest in the world [1], which had been caused not only by insufficient availability of modern contraception, but also by a general lack of consideration of the potential consequences of unprotected sex [2,3]. According to our observations since the 1970's, lack of consideration acted in some cases synergistically with alcohol abuse [1,2]. In the 1970's, condoms were poor quality – imported ones were scarce, while Soviet-made condoms were thick and, at the same time, easily torn. Oral contraceptives, mainly Infecundin and Bisecurin (both produced in Hungary) were known in the 1980's, but required a prescription and were used infrequently. An unofficial directive to enhance the birth rate resulted in limited availability of contraceptive devices, prohibition of abortions till 1955, and certain behavioral stereotypes. Fortunately, the abortion rate in Russia has declined considerably over the past 15-20 years [4], with heavy binge drinking tending to decrease as well [8-10].

An association between alcohol consumption and high-risk sexual behavior is explainable within the scope of the alcohol myopia theory [11]. According to this theory, alcohol reduces cognitive capacity and causes individuals to focus on the most salient cues in their current environment. Less salient cues, needing to be processed with additional cognitive resources, are less likely to be acted upon by an inebriated individual. More distant cues, such as a suspicion that the partner could be infected by STI, are also less salient, reducing the likelihood of inebriated individuals engaging in [12]. Interestingly, alcohol directly increased the risk through weaker future condom use intentions, but indirectly decreased the risk for women who generally have a higher self-efficacy regarding condom use, due to stronger "in-the-moment" condom negotiation intentions [13]. This could be explained by alcohol helping to overcome communicative barriers, thereby momentarily enabling a more decisive condom negotiation. According to other research, intoxicated people reported more prudent intentions than their sober counterparts, provided the situation emphasized the risks of unprotected sex [14]. This is also in accordance with the alcohol myopia theory.

The role of alcohol in safer sex decision making is discussed in the literature with the prevailing opinion being that excessive alcohol consumption prior to sexual relations is a risk factor for the non-use of condoms [12,15-27]. Although one study found an association between drinking before sex and condom use, utilization was more frequent among heavy episodic drinkers, with one of the explanations being an increased number of sexual encounters among this group provided more opportunities to use condoms [28]. In addition, heavy binge drinking is associated with severe hangovers, which are sometimes accompanied by depressive symptoms reported to be associated with unprotected sex [29-31]. Alcohol use was reported to be significantly associated with unprotected sex among people with HIV/AIDS

[32]. Domestic and sexual violence is also often associated with alcohol abuse [33,34], while the use of condoms within the context of violence is less probable than in other circumstances [35,36]. There is also an opposing opinion that violence leads to increased condom use, explained by a loss of trust and intimacy [29], although this would only seem likely to apply to milder cases, when the victim is not intimidated by her violent partner.

The topic of alcohol and condom use is not without controversy. Drinking was reported to be inconsistently related to protective behavior such as condom use among youth including college students [37]. Some researchers have found no association between alcohol and the non-use of condoms [38]. There is an opinion that people who use condoms while sober would use them also when affected by alcohol, while those who fail to use condoms when inebriated would also probably not use them when sober. That said, empirical exceptions to this rule have been acknowledged by the same researchers [12]. It should be mentioned that all publications (known to us), which do not unequivocally confirm the association between drinking alcohol and the and non-use of condoms, originate from more developed countries [12-14,36-38]. Numerous reports from less developed and newly industrialized countries, particularly in sub-Saharan Africa [22-27], do confirm such association, which may reflect a worldwide tendency of improvement in protective behavioral patterns.

It is generally known that excessive and prolonged alcohol use can lead to permanent damage to the structure and function of the brain associated with personality changes characterized by a deficit in frontal inhibitory control and cognitive impairment i.e. beginning alcohol-related dementia (ARD) [39]. ARD partly overlaps with the frontal or prefrontal syndrome [40] and organic personality disorder [41]. Frontal lobe dysfunction is regarded as a hallmark of alcohol dependence [42]; frontal lobes of alcoholics may show evidence of decreased neuron density and volume shrinkage [39,43]. The cortical changes and symptoms of alcohol-related dementia were reported to be similar to those in frontotemporal dementia [44], although these conditions demarcation is beyond the scope of this report. It should be mentioned that the term "alcoholic dementia", used in Russia, does not exactly correspond to the internationally used "ARD" as nutritional deficiency [39], head injury e.g. old hematoma [45] and chronic diseases can play a role in pathogenesis [46], especially, if not adequately treated [47]. Among possible manifestations are personality and behavioral changes such as social and personal neglect, confabulation, lack of insight, of empathy and emotional control [44], limited ability to consider consequences, disinhibition in the affective and emotional sphere, disinhibition of instinctual drives, inability to resist stimuli that are normally suppressed, attention deficit attributable to a defect in a cognitive function [48] and the inability to forego small, immediate rewards for larger, delayed rewards [49]. Relapsing binge drinking with repeated remissions may exacerbate cognitive deficits [39,50]. Older drinkers show more pronounced alcohol-related cognitive changes and are less likely to recover the function once they give up drinking. It has also been suggested that a family history of alcoholism may be a risk factor for development of alcohol-related cognitive impairment [38,51].

The link between dementia and aggression is beyond the scope of this review, although aggression is known to occur in frontal syndrome. Among dementia patients who committed crime those with alcohol-related dementia were more likely to commit violent crime [52]. This is of importance in connection with the topic of domestic and sexual violence in relation to the non-use of condoms. Reproductive coercion, in particular intentional or neglectful sabotage of the withdrawal method of contraception (if agreed-upon or presupposed as a method) is regarded as a form of intimate partner violence [53]. Reproductive coercion can occur in conjunction with physical or sexual violence; it is a serious public health issue often remaining unrecognized. Birth control sabotage, pregnancy pressure and coercion can lead to reproductive health consequences and may be debilitating to a women's mental health [53]. Violence can also persist in families being perpetuated from one generation to another [54]. Conversely, false accusations by a female partner (with third persons sometimes being complicit) can also be observed. All the above indicates that not only can alcohol intoxication lead to irresponsible behavior, including the non-use of condoms, but also slowly progressive personality changes developing under the impact of a prolonged alcohol misuse, particularly with heavy binge drinking.

Some studies of alcohol consumption and condom use have been based on surveys, but there are international differences in the quality and reliability of survey data. When evaluating results of surveys and opinion polls, it should be noted that since the 1990's these valuable research tools have been discredited in Russia due to widespread obtrusive solicitations to participate in different surveys that often request for private information. Accordingly, people in Russia are generally "sick and tired" of surveys and often conceal their true opinions [55]. Answers to the questionnaires can be biased, especially regarding such delicate topics as alcohol consumption and condom use. This pertains both to opinion polls and scientific surveys. The tendency to discredit surveys and polls can be seen as a continuation of attitudes from the Soviet period, when the "frame of mind of the working population" was monitored but the data was kept secret or published after alterations to provide alignment with official ideology [55].

Results of studies from Western Europe, where attitudes toward surveys are probably more responsible or relaxed, e.g. that the "earlier research has suggested that, at least for drinking behavior, reports (by adolescents) can be regarded as being generally valid" [56] are in fact not generalizable to the Russian population. Dr. Stickley et al., reported on binge drinking and risky health behaviors among adolescents 13-17 years old from northern Russia [56]. The survey results indicate that "In terms of sexual behavior, there was no difference in the odds ratios between binge drinking and non-binge drinking girls and boys for non-condom use during last sex." In other words, the adolescent binge drinking was not associated with the non-use of condoms, although respondents may have been unwilling to admit to the disapproved practice, and it can be reasonably assumed that if the study subjects answered falsely, it was without consideration of the potential public health significance of the research.

In regard to future research directions, poor quality alcoholic beverages i.e. other substances than ethanol may be of importance as they can induce atypical intoxication [2] and be more neurotoxic than ethanol in the long term. We observed marked mental confusion after a consumption of poor-quality fortified wine sold in shops [57]. Moreover, regular intake of poor quality alcohol may contribute to a more rapid onset of personality changes and alcohol-related dementia. This may be of particular importance for some smaller towns and rural areas in Russia, where quality of sold alcohol was noticed to be on below average [58]. This topic requires well-aimed toxicological studies. For that purpose we handed over at the 14th Annual International Conference on Dose-Response (21st April 2015 in Amherst, Massachusetts) several specimens of vodka purchased in Komi-Permyak Okrug (the region with one of the lowest life expectancy in Russia [59] and relatively high alcohol consumption) to Professor Ronald J. Korthuis [60], who kindly agreed to arrange a toxicological investigation. Furthermore, neurophysiological and genetic studies should correlate personality features with biological parameters and behavior patterns [61].

In conclusion, responsibility concerning condom use is apparently growing, contributing to the considerable decrease in the abortion rate in Russia over the last 15-20 years [4]. It should be stressed that reproductive coercion such as forced non-use of condoms and sabotage of the withdrawal method of contraception are comparable to violent crime [53]. Vasectomy is a safe, simple and effective method of permanent contraception; it was reported to be 30 times less likely to fail and 20 times less likely to have postoperative complications than tubal ligation in women [62] and may be a viable solution for some males (incapable to control their behavior and consistently use condoms), although it does not eliminate the necessity of condoms to prevent STI. Complications of vasectomy are rare and minor in nature. Immediate risks include infection, hematoma, and pain [62]. Long-term complications include sperm granuloma (most of them are not painful, often disappear over time) and post vasectomy pain syndrome [63]. Complications seldom lead to hospitalization or aggressive medical management. In particular, vasectomized men do not seem to have elevated risk of immune-complex diseases [62]. A population-based case-control study showed no association between prostate cancer and vasectomy and neither a meta-analysis provided evidence of such association. Studies also have shown that there is no measurable association between vasectomy and testicular cancer [64,65]. Vasectomy has been discussed here in the conclusion section because the message of this report is: vasectomy is preferable to unintended pregnancy and abortion because of ethical and medical considerations

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