



# Reassess Prevalence of Psychoactive Substances Use in a Lithuanian Women's Prison after 8 Years

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## Abstract

**Background:** This paper re-assesses the pervasion of psychoactive substances (tobacco, alcohol, and drug) consumption among the imprisoned women in a Lithuanian women's prison. The objective of this study was to identify the changes (during last 8 years) with regards to consumption of psychoactive substances in a women's prison in Lithuania.

**Method:** We have conducted retesting of the first ever investigation of this kind, carried out in 2004 and in 2009, based on the same questionnaire, in the only existing women's prison in Lithuania. 98 (38.9%) women of 252 imprisoned were provided with the questionnaires. We have equated the results with the previous investigations. A statistical analysis was conducted using SPSS 25.0.

**Results:** The majority of all respondents were smokers in both samples (76.8% - in 2017 years 79.7% - 2009 years). In 2017 study, the mean age of starting to smoke was  $18.66 \pm 6.04$  years and in 2009 study respondent's medium age at which they started to smoke was  $14 \pm 7.3$  years; in 2017 study narcotic drugs had been tried at least once by 27.4% of respondents and in 2009 study - 57.7%.

**Conclusion:** This study highlights significant changes in women's prison during the past 8 years. In a 2009 study has found that 22.5% of respondents used drugs whereas in a 2017 study the number was five times less (4.4%). A tobacco free places strategy in prison is very needful to reduce tobacco using among inmates.

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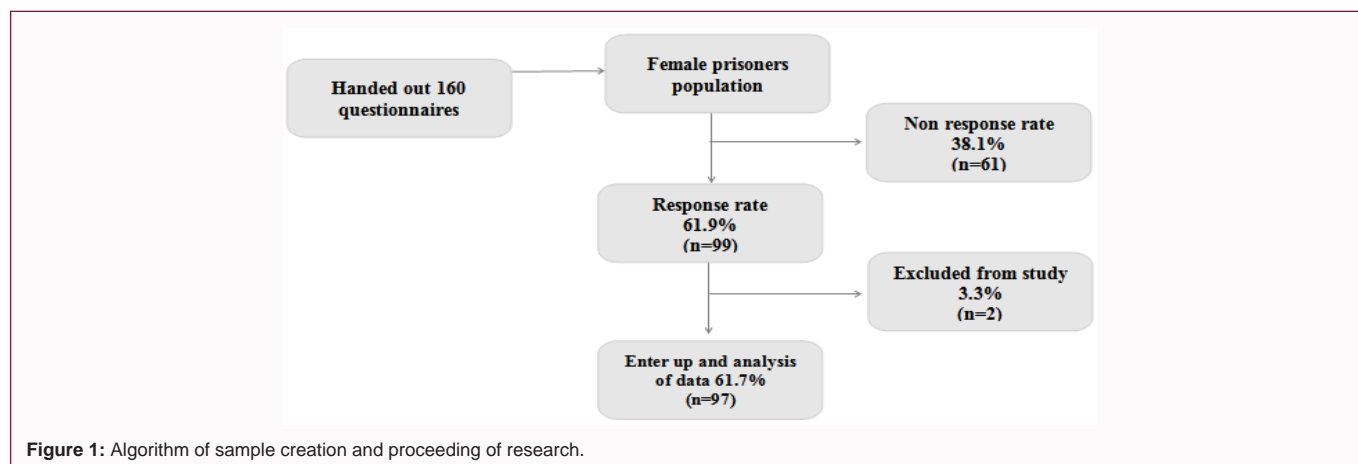
**Keywords:** Psychoactive substances; Female prison; Tobacco; Smoking; Psychosocial factors; Drugs

## Background

This is an era of mass incarceration where the number of imprisoned women is significant and still growing. The number of women in English prisons has stabilized at 16 per 100,000 of the population in 2015. Women constitute 5%, a small but significant percentage of the total prison population [1]. In Greek penal institutions women reach approximately 5% of the total prison population as well [2]. According to Lithuanian Statistics Department in 2018 the same number of women - 4.6% was in imprisonment settings [3].

The number of women and girls incarcerated worldwide has increased by half in the past 17 years; in total approximately 700,000. It is internationally recognized that women in prison are very vulnerable [1]. Women are currently the fastest growing sector of the prison population and are experiencing incarceration and re-entry back into their communities at rates higher than ever [4].

Change in the social status of women after entering prison leads to socio-psychological adaptation problems. There are several reasons in this regard which include a change of social environment, decrease of external control and change of residence. The experience of socio-psychological adaptation in a new place has become an important finding in the life of female prisoners, which influences future adaptation in the professional community [5]. Women, the main pillar of the society and family, are responsible for the health of the community and the problems related to drug-use among them threaten the stability of the family [6]. Social and sexual deviations, abortion, divorce and even imprisonment are some of the consequences of female addiction [7]. Consumption of psychoactive substances is widely spread among prison detainees and this represents a public health problem. The prison population is especially vulnerable to the impact of these substances, just as it is to any other health-related epidemic.



Internationally, a group that remains at greatest risk for smoking and its associated health consequences is people who have been imprisoned. In spite of the steady drop in smoking prevalence in countries such as the United States and Australia [8,9], people in incarcerated settings remain a population with high rates of smoking and less access to treatment or prevention for smoking [10].

In 10 different countries prevalence of drug use disorder were based on all drugs excluding alcohol and tobacco (i.e. cannabis, opioids, cocaine, amphetamine, hallucinogens, inhalants, other stimulants and tranquilizers). Prevalence on drug use disorder in female prisoners was ranged from 30% to 69% [11]. According to the 2015 Global Burden of Disease Study, the global prevalence of alcohol use disorder was 1.5% for males and 0.3% for females [12]. The drug use disorder was as high as the alcohol estimates, and possibly higher in female prisoners, with a pooled estimate of 51%. Importantly, the lowest prevalence study in women found that 30% had a drug use disorder [11]. One of the US studies shows that psychoactive substance use in prison is a worldwide problem. Self-reported substance use was common in the 3 months before incarceration: 81% used tobacco, 81% used one or more illicit drugs, and 49% reported one or more episodes of binge drinking (>4 drinks at a time) [12].

In 2009 in Lithuanian women prison 22.5% of respondents were addicted to drug use, in 2004 survey conveyed no drug users in the women's prison in Lithuania and such changes are very important and need further study.

The aim of this study was to determine whether spending 8 years in women's prison increased consumption of psychoactive substances. The main goal of this study was to find the changes in the use of psychoactive substances in women's prison in Lithuania.

## Methods

The first such investigation was carried out in Lithuania in 2004 and the second in 2009. The third investigation was made in women's prison in Lithuania like the second one. It was used the same questionnaire, informing accessible inmates about the aim of the study and a possibility of "release of given information". In the first study there weren't women who use narcotics. In order to get more sincerely answers the questionnaire was voluntary and anonymous, no personal data were requested. The questionnaire had preamble and 45 questions.

The preamble gave a short explanation of the objectives and goals of the study. The questions were meant to determine the age, education

level, marital status, living conditions and social environment of the respondents, and to gather data on initiation of tobacco, alcohol and drug use, the opinion of the respondents on the influence tobacco, alcohol, drugs and other psychotropic substances had on their health. Data were obtained by questionnaire between March 2017 to April 2017.

The study sample was formed of inmates at the women prison in Panevezys, containing 252 inmates at the time of the study. A respondent's consent was obtained while completing the questionnaire.

The researcher directly handed out 160 and collected 99 the questionnaires. The questionnaire response rate was 61.9%, 99 inmates participate in the study, two of the returned and filled-in questionnaires were excluded from data analysis, 97 questionnaires were left for final analysis, constituting 61.7% of all questionnaires handed out. The course of the study and the algorithm of the sample can be found in Figure 1.

## Statistical analysis

Statistical Package for the Social Sciences version 25.0 software (SPSS Inc., Chicago, IL, USA) was used for statistical analysis. Descriptive statistics, including mean, Moda (Mo), Mediana (Me) and Standard Deviation (SD), Percentages (%) were calculated to provide an estimate of the population parameters. In order to determine a possible correlation between separate risk factors and smoking, alcohol and drug use, and respondents' perception of the impact on the health as well as to postulate possible causes. Spearman correlation was used for non-normal data distribution. The mean differences between two independent samples were assessed Mann Whitney test for not normal distribution. The statistical reliability of frequency inequality was evaluated by calculating chi square ( $\chi^2$ ) and p values. The significance level was set at  $p < 0.05$ .

## Results

The age of women inmates ranged from 21 to 70 years, with the average age being  $43.59 \pm 13.58$  years (Median = 42.5; Mode = 26). The majority of respondents were young adults (Mode = 26, Figure 2). In a 2009 study, the women's ages ranged from 18 to 70, and the mean age -  $34.4 \pm 12.55$  years (Figure 2). A statistically significant ( $p=0.001$ ) difference was found of imprisoned women's age between the 2009 and 2017 studies.

In a 2017 study that we carried out, more than half of respondents (60%) had secondary education, 12.6% had no more than primary

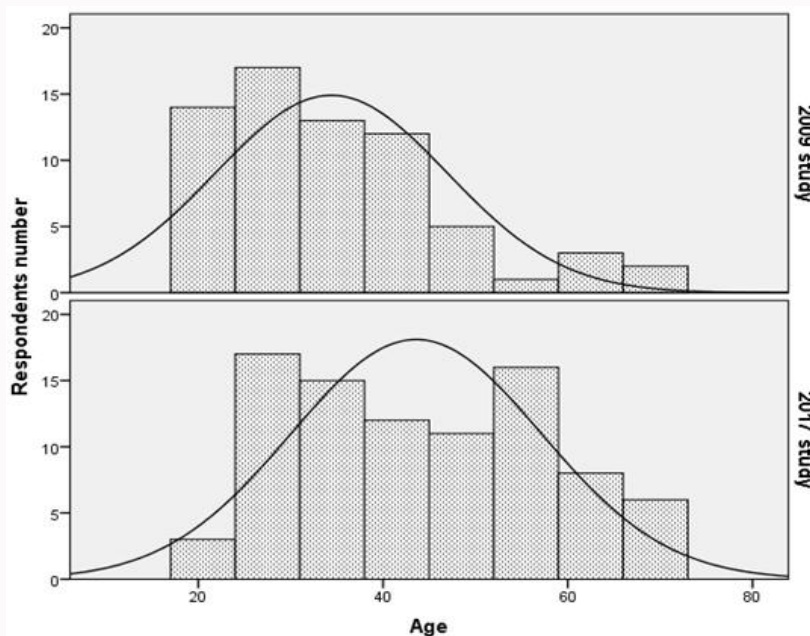


Figure 2: Histogram of the 2009 and 2017 respondents' age.

Table 1: Sociodemographic factors in samples of 2009 and 2017 studies.

Sociodemographic factors		2009 years sample		2017 years sample	
		n	%	n	%
Education	Primary education	4	6.2	12	12.6
	Foundation education	28	43.1	17	17.9
	Secondary education	24	36.9	47	49.5
	Secondary vocational education	9	13.8	14	14.7
	Higher education	0	0	5	5.3
	Total:	65	100	95	100
Family status	Not married	25	37.3	26	29.5
	Married	8	11.9	28	27.4
	Divorced	22	32.8	22	23.2
	Widow	12	17.9	19	20
	Total:	67	100	95	100
Grown up family	Both parents	36	57.1	58	62.4
	With father	3	4.8	1	1.1
	With mother	21	33.3	22	23.6
	With grandparents	2	3.2	5	5.4
	In social establishments	1	1.6	7	7.5
	Total:	63	100	93	100

education (1 to 4 years at school), 5.3% had higher education. There was a statistically significant difference after comparing years studies ( $p < 0.5$ ). In a 2009 study, one third of women had secondary education and just 6.2% had no more than primary education (Table 1).

27.4% respondents were married, 20% were widows and almost a quarter (23.2%) of all were divorced. This data has a similar distribution to that of the 2009 years sample (Table 1).

In 2017 (62.4%) and 2009 (57.1%) years most women were brought up in a two-parent family. In 2017 years 7.4% grew up in

social establishments (orphanages, boarding-schools, etc.) and it's more than in 2009 study (Table 1).

The majority of all respondents were smokers in both samples (76.8% - in 2017 years 79.7% - 2009 years). A statistically significant difference was observed between 2009 and 2017 samples; women started smoking at an earlier age in 2009 years study (Table 2).

In 2017 study 74.4% had never tried to quit smoking in their life. The mean age of starting to smoke was  $18.66 \pm 6.04$  years (Min =10; Max =40, mode =16). A statistically significant ( $p < 0.05$ ) correlation was noticed between family in where they grew up and the age when they started to smoke. Those who grew up in a two parent's family ( $19.25 \pm 6.6$ ; Min =11) tended to start smoking later than those who had been grown with their single parent ( $15.7 \pm 3.7$ ; Min =10) or grandparents, social establishments ( $16.57 \pm 3.8$ ; Min =14).

In 2017 the mean of the number of cigarettes smoked per day was  $8.46 \pm 5.4$ , (Min =1, Max =40, mode =10), a quarter of women smoked half a pack daily. In 2009 study was higher mean of cigarettes smoked per day  $16.77 \pm 10.21$  (mode =20), and almost a quarter of women smoked one pack daily. The two studies had shown statistically different results (Table 2).

The average age of first alcohol use in 2017 study was  $17.7 \pm 4.12$  years (Min =8, Max =32, mode =18) and its older age than in 2009 study, and the two studies have revealed different results (Table 2).

The analysis of tobacco and alcohol consumption use revealed that 20.6% of the smokers drank beer before imprisonment one or more times per week, 11.7% drank wine, and 12% drank vodka. There was not statistically significant difference between ( $p \geq 0.05$ ) smokers and non-smokers when they began drinking alcohol. In 2017 was found statistically significant correlation between smoking start age and drinking start age ( $r_s = 0.542$ ,  $p < 0.01$ ).

Narcotic drugs had been tried at least once by 27.4% of respondents. The average age of the first narcotic drug use was  $23.08 \pm 9.2$  years (Min =13, Max =50, mode =18). Almost half of the

**Table 2:** Deference of risk factors in last 8 years.

	Groups	Mean ± SD; (Mode)	
Age women started smoking	2009 years sample	16.56 ± 5.32; (14)	U=1508.5, p<0.05
	2017 years sample	18.66 ± 6.04; (16)	
Number of cigarettes smoked per day	2009 years sample	16.77 ± 10.21; (20)	U=662, p<0.001
	2017 years sample	8,46 ± 5.4; (10)	
Age of the first alcohol use	2009 years sample	16.42 ± 2.81; (16)	U=1985.5, p=0.03
	2017 years sample	17.7 ± 4.12; (18)	
Age of the first narcotic drug use	2009 years sample	21 ± 6.6; (20)	U=211, p=0.54
	2017 years sample	23.08 ± 9.2; (18)	

respondents had tried narcotic drugs for the first time at 18 years old or under. This data has a similar distribution to that of the 2009 years sample, the majority of the respondents had tried narcotic drugs for the first time at the age of 18.

Overall, 4.4% of respondents used drugs. 90.9% women used the first-time narcotics outside of prison: 31.8% at home, 13.6% in street, 27.3% were on a visit. Our 2009 survey found 22.5% women used drugs before imprisonment.

Route of administration of narcotic drugs was 66.7% intravenous (in 2009 it was 33.8%), 22.2% sniffing (nasal), 5.6% smoking (in 2009 it was 8.5%), and 5.6% used mixed forms (sniffing, pills, smoking and intravenous narcotic drugs) (in 2009 it was 2.8%).

There is a statistically significant correlation between the number of incarcerations and incarceration for crimes directly related to narcotic drugs ( $r_s = -0.494, p = 0.002$ ). Among those who were imprisoned for crimes directly related to narcotic drugs, 7.1% used narcotic drugs in prison and 92.8% didn't. We did not find a statistically significant difference ( $p > 0.05$ ). In 2009 study was indicated that among prisoners who were imprisoned for crimes directly related to narcotic drugs, 20% used narcotic drugs in prison and 73.3% didn't, and this difference was statistically significant ( $p < 0.05$ ).

In a 2017 study having evaluated the relation between illegal narcotic drug use and smoking, it was found that 33.3% of the smokers had tried drugs at least once; 9.5% of non-smokers had tried. In this study the smokers were significantly ( $p < 0.05$ ) more likely to have tried drugs than were non-smokers. In a 2009 study, there was not statistically significant difference ( $p > 0.05$ ).

Regarding availability of psychoactive substances in prison, 4.2% of respondents claimed that they were readily available, 4.2% said they were not readily available, and 64.8% replied that they didn't know. The same results were found in 2009 survey (4.2% claimed that they were readily available, 16.9% said they were not readily available, and 64.8% - didn't know).

## Discussion

Comparing the two our studies (2009 and 2017), we can conclude that the average age of women in prison has increased by almost 10 years, in the last study three times more women replied that are married, perhaps it can be explained by the better psychological environment in they own families. 52.5% of the Greece study population was unmarried and 61.4% reported having children (of whom 38.6% of children were below the age of 18 years and 25.7% were living with one of their grandparents). 35.6% and 31.7% had

compulsory or secondary education, respectively and 58.4% was employed at the time of imprisonment [2].

Tobacco has been commonly regarded as a currency in prisons worldwide for decades and cigarettes are used to settle payments for gambling, illicit drugs, other goods and services. Tobacco is also used to pay for "protection" from stand over tactics and bullying [13]. In the United States, tobacco use among prisoners is nearly three times higher than that of the general population [14]. Results of a study in Greece shows that 70% of the respondents were smokers with the majority (67.2%), smoking more than 21 cigarettes daily before detention, whereas this percentage increased to 83.8 % during detention [2].

In a 2016 survey about the prevalence of psychoactive substances in Lithuania was showed that 67% of people (aged 15 to 64 years) at least once in the life smoked or tried to smoke (cigarettes, cigars, pipes). The mean age at which they had begun to smoke was 18 years. 73% of smokers said they had tried to quit. Average consumption of cigarettes per day was 13.5 [15].

Our study showed that 22.5% women in Lithuania prison used drugs before imprisonment and 4.4% of women used drugs inside and seem to be different from other studies reporting such as in Greece 7.9% admitted having used drugs during imprisonment and 31.7% replied that they have been using drugs before their detention [2]. In Lithuania 1/5 of incarcerated women used drugs before prison and one part of them continue in prison, half of drug users got a substitution treatment before imprisonment. The use of injection drugs during the current incarceration was associated with higher pre-incarceration addiction severity, supported by prior drug use and addiction problems. We think that would be good practice to continue substitution treatment in prison as well. In 1993, the World Health Organization recommended the implementation of Opiate Maintenance Treatment (OMT) in prisons to reduce drug injection and related harm such as the spread of blood-borne diseases [16]. One systematic review highlighted that after being release from prison, many ex-prisoners returned to risky alcohol and drug use. Hazardous drug use after release from imprisonment increases the risk of infectious disease, as well as fatal and nonfatal overdose. Ex-convicts also fall into the risk category of breaking law soon after the release. The risk of repeatedly committing crime increases with the use of particular drugs (i.e., alcohol, cannabis, amphetamines and opioids), and risky patterns of use (e.g., injecting drugs) [17]. Implementation of opiate maintenance treatment in prison helps to control related harms of injecting drugs or good solution would be offering in prison of drug-free environment, the training of life skills that can contribute to overall mental well-being and successful social reintegration.

Although about the drug problem in prison is widely reported, our study shows that it is possible to get narcotic drugs in prison. Comparing the 2009 and 2017 surveys, we can see that more and more women are declaring about that. Among our respondents in study 2017, 9.1% indicated that their first narcotic experience took place outside prison, and in 2009 study 4.2% reported first narcotic drug use experience occurred inside prison. It shows that it is not difficult to get drugs in prison. In one post-soviet country Kyrgyzstan is worse situation - over one-third (34.8%) of all lifetime within-prison drug injection had injected for the first time in prison. Among the people who inject drugs in prison, 70.9% had injected during the current incarceration [18].

Smoking in prison is significantly high and exceeds that observed in the general community. Despite this, the majority of prisoner's report on planning to quit. Despite high levels of tobacco dependence, many prisoners intend to quit, and health planners and custodial authorities need to encourage and support inmates who do attempt to quit. Of the participants, 76.8% were current smokers, and almost all (74.4%) of them had never tried to quit smoking in their life. We found better results as in other studies, in the Southeast United States about one third of smokers reported no previous attempts to quit smoking, while 19.7% had made at least one attempt, 18% had made two attempts, and 13.1% reported three previous attempts [19,20].

This can be explained by better motivation, desire less harmful to health, but on the other hand a large number of smokers in our country's prisons shows lack of suggest interventions and of support.

## Conclusion

This study highlights significant changes in women's prison during the past 8 years. In a 2009 study has found that 22.5% of respondents used drugs whereas in a 2017 study the number was five times less (4.4%). Other good findings are the average age of first alcohol use, first tobacco smoke and first narcotic drug use. A tobacco free places strategy in prison is very needful to reduce tobacco using among inmates. Very important for convicts to have opportunities to have substance treatment available to them in prison as well.

## Ethics Approval and Consent to Participate

Institutional Board of the Faculty of Medicine of Vilnius University has given approval to conduct this study.

Anonymous questionnaires were distributed to inmates in their living rooms. The objectives of the survey were clarified to the imprisoned women; participation was voluntary, as denoted by the non-negligible non-response rate.

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