HOW DO EMOTIONAL, COGNITIVE AND SOCIAL HEALTH RESOURCES RELATE TO HEALTH BEHAVIOUR? THE CASE OF LITHUANIA

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Abstract. *Introduction*. In most research studies, health is analysed from the unidimensional perspective, e.g. medical studies are usually based on the biomedical model, which posits that health is an absence of illness, and that illness is caused by abnormality within the body. In this model, mental phenomena are not important, an individual has no or little responsibility on one's health, and the treatment of a disease in most cases is passive (Wade, Halligan, 2004). The WHO (1948) definition of health suggests that health is not only the absence of illness, but also a good subjective and social state, i.e. health is a multidimensional, biopsychosocial construct. Therefore, alongside the analysis of the biological aspects of health, there is also a need to study the relationship between psychosocial aspects (resources) of health and health behaviour. The *aim* of the study is to explore the links between different emotional (feelings of depression, sadness, anxiety, happiness), cognitive (beliefs that other people are helpful, supportive, trustful) and social (religiousness, meeting with friends, participation in social activities, possibilities to discuss private, intimate questions) health resources and their relation to health behaviour (eating fruits, vegetables, smoking status, number of cigarettes, alcohol use frequency, amount of alcohol consumed on workdays and weekends, physical activity) in a representative sample of Lithuanian males and females. *Research methods and participants*. Single-item questions generated by experts from the European Social Survey round 7 were used to assess the emotional, cognitive and social health resources and health behaviour. The research sample (n=1865) was drawn from the general population in Lithuania (40.2 percent of males and 59.8 percent of females). The mean age of participants was 49.59 (SD=18.29). The youngest participant was 15 years old and the oldest one was 92. Participants were interviewed in 2014. The data was analyzed using Pearson's correlation coefficient ρ. Statistical significance was set at p> .05. *Results*. In Lithuanian males, more frequent participation in social activities is connected to more

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frequent alcohol use and a greater amount of consumed alcohol, but it has no corre-lation with smoking or the number of cigarettes smoked. In Lithuanian females, more frequent participation in social activities is related to more frequent alcohol use and more frequent smoking, but it is not connected to the number of cigarettes smoked or the amount of consumed alcohol. The results of this study confirm that social environment might affect individual health behaviour not only positively, but also negatively. ***Discussion***. It is evident that the levels of emotional and cognitive health among Lithuanian males and females are lower than in non-postsoviet (Scandinavian, Western Europe) countries (Smitas, Gustaniene, 2017). This data suggests that health behaviour may be negatively affected not only by personal (emotional and cogni-tive) health, but also by social aspects of health. There is a common misconception that more frequent participation in social activities positively affects a person's health (Novek, Menec, Tran, Bell, 2013), however, our evidence suggests the opposite, i. e. in the case of men, more frequent participation in social activities results in more fre-quent alcohol use,while in the case of women, it results in more frequent cigarette smoking. ***Conclusions.*** More frequent participation in social activities by Lithuanian males is connected to more frequent alcohol use and more frequent smoking in Lithu-anian females. Lower levels of emotional and cognitive health were also related to less favourable health behaviour. Further studies are needed to explore the links between social and behavioural health-related variables.

Keywords: emotional, cognitive, social health resources, health behaviour, Lithuania, European Social Survey.

INTRODUCTION

Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO Constitution, 1948). This definition of health suggests that health is not only the ab-sence of illness, but also a good subjective and social state, i.e. health is a multidimensional – a biopsychosocial – construct.

In most research studies health is analysed from a unidimensional perspective, e.g. medical studies are usually based on the biomedical model, which posits that health is an absence of illness, and that illness is caused by abnormality within the body. Mental phenomena are not important, an individual has no or little responsibility on one's health, and the treatment of a disease in most cases is passive (Wade, Halligan, 2004).

However, other researchers claim that the biomedical model of health is not comprehensive enough and this can be observed in the increasing morbidity rates – despite the advances of treatment methods and modern technologies, the prevalence of various diseases has been

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on the rise and, according to the World Health Organization's forecast, mortality rates will increase globally by 2030 (Mathers, 2008). Some authors suggest that only holistic (biopsychosocial) perspective to the understanding of health can reduce mortality (Von Kanel, 2008).

Still, the links between different modalities of health have not been explored in a comprehensive manner. For example, it is believed that participation in social activities (aspect of social health) is beneficial to various aspects of physical health, such as lower risk to develop dementia, lower mortality in a 12-year period (Novek, Menec, Tran, Bell, 2013). However, these results are based on older adults, but not on general population.

According to the social cognitive theory (Bandura, 2004) health is closely related to cognitive and social resources. Some data shows that trusting other people has links to better health, while social isolation relates negatively to health (d'Hombres, Rocco, Suhrcke, Mckee, 2010). However, this data was gathered in countries such as Belarus, Ukraine, Armenia, Kirgizia, Georgia, and it is possible that in more democratic countries there will be a significant difference in these relationships in comparison to the co-called post-soviet countries. Furthermore, this study treats the concept of health as subjectively perceived general health, rather than objective health or health related behaviour; as a result, it remains unclear how exactly social resources relate to certain types of health. The authors also suggest that in countries with low health status (life expectancy) it could be useful to look for the ways to improve the situation by stepping over the boundaries of traditional health (d'Hombres, Rocco, Suhrcke, Mckee, 2010).

The life expectancy of Lithuanians is the third-last among European Union countries (United Nations, 2007). It is also known that, for example, alcohol use is a major public health threat in post-soviet countries, and the mechanisms thatcontribute to that phenomena are not clear (Grigoriev, Jasilionis, Stumbrys, Stankuniene, Shkolnikov, 2017).

Health risk behaviour is understood as a form of behaviour which negatively affects a person's health and which can be changed (Centers of Disease Control and Prevention, 2017). Lack of physical activity, tobacco use, excessive alcohol use and poor nutrition are major factors that cause illness, suffering and premature death (Centers of Disease Control and Prevention, 2017). Physical activity can be defined as bodily movement which enhances health (Office of Disease Prevention

and Health Promotion, 2008). Smoking can be defined as the practice of burning tobacco and inhaling the smoke. Poor nutrition can be defined as insufficient, over-sufficient or poorly balanced diet, and alcohol use can be defined as ingestion of drinks that contain alcohol.

Research on health-related behaviour (such as fruit and vegetable consumption) is fragmented and rare, but even these rare studies show that about 90 per cent of Lithuanian males and females should consume more fruits and vegetables (Petkeviciene, Kriaucioniene, 2005); the study also suggests that only half of the boys and onefifth of the girls are sufficiently physically active (Zaborskis, Raskilas, 2011). These studies did not examine possible predictors of these behaviours, but it is also known that in most cases advice to do or not do something without a deeper knowledge on the specific phenomena is usually ineffective with adults.

Health behaviours also interrelate with each other – e. g. it is widely accepted that people under the influence of alcohol are more likely to smoke, and recent studies suggest that nicotine suppresses aversive, sleep-promoting effect of alcohol; this effect explains why people under the influence of alcohol are also more likely to smoke (Sharma, Lodhi, Sahota, Thakkar, 2015). Other studies also reveal possible links between exercising and fruit and vegetable consumption; however, this data was based on older adults of Mexican nationality (Doubuva, Garcia, Castaneda, Cuevas, 2016).

Thus, the aim of the study is to explore how the relationship between different emotional (feelings of depression, sadness, anxiety, happiness), cognitive (attitudes towards other people being helpful, supportive, reliable) and social (religiousness, meeting with friends, participation in social activities, possibilities to discuss private, intimate questions) health resources relate to health behaviour (eating of fruits, vegetables, smoking status, number of cigarettes smoked, frequency of alcohol consumption, amount of alcohol consumed on workdays and weekends, physical activity) in a representative sample of Lithuanian males and females.

MATERIALS AND METHODS

The data from the European Social Survey, ESS, (www.european-socialsurvey.org) round 7 was used to assess links between emotional,

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cognitive and social health resources and health behaviour. The European Social Survey (ESS) is an academically driven cross-national survey conducted every two years across Europe since 2001. The survey measures the attitudes, beliefs and behaviour patterns of diverse populations in more than 20 nations. ESS has been monitoring social change in Europe since 2002. The data is freely available on the website and can be used for non-commercial purposes. The data and documentation can be accessed by a round (year), theme or by country. The data is available for download and online analysis. The ESS questionnaire consists of a collection of questions which can be classified into two main parts – a core section and a rotating section. The core section (also referred to as the 'core module') focuses on a range of different themes that are largely the same in each round. The rotating section (also known as 'rotating modules') covers specific themes, which are sometimes repeated in later rounds of the ESS. Survey questions have been created by experts; every module includes theoretical background as well as the argumentation for the need of research. According to the survey requirements, sampling must be representative for people aged 15 and over, strict random probability methods must be used at every stage, and substitution of non-respondents is not permitted at any stage.

PARTICIPANTS

Research sample was drawn from the general population of Lithuania and consists of 1865 participants, 750 (40.2 %) of whom were males and 1115 (59.8 %) were females. The mean age of the participants was 49.59 (SD=18.29). The youngest participant was 15 years old and the oldest one was 92. Participants were interviewed in 2014.

Instruments

The dataset is compiled from questions that measure the following aspects (resources) of health:

a) **Emotional**:

depression – "In the past week, how much time did you spend feeling depressed?",

sadness – "In the past week, how much time did you spend feeling sad?",

anxiety – "In the past week, how much time did you spend feeling anxious?",

happiness – "In the past week, how much time did you spend being happy?", where 1 means that the subject felt that way none or almost none of the time, and 4 - all or almost all of the time;

b) **Cognitive**:

opinion that people can be *trusted* – "Most people can be trusted, or is it true you can't be too careful when dealing with people?",

opinion that people can be *helpful* – "Most of the time people try to be helpful, or are they mostly looking out for themselves?"

opinion that people can be *supportive* – "Most people would try to take advantage of you if they got the chance, or would they try to be fair?", where 0 means that a person thinks that most people would try to take advantage of them, you cannot be too careful, and 10 means the opposite;

c) **Social**:

religiousness – "Regardless of whether you belong to a particular religion, how religious would you say you are?",

social meetings – "How often do you meet socially with friends, relatives or work colleagues?",

participation in social activities – "Compared to other people of your age, how often would you say you take part in social activities?",

possibilities to discuss private, intimate questions – "How many people, if any, are there with whom you can discuss intimate and personal matters?".

Health behaviour was measured by such questions as:

fruit eating – "How often do you eat fruit, excluding drinking juice?",

vegetable eating – "How often do you eat vegetables or salad, excluding potatoes?",

smoking status – "Which of the descriptions on this card best describes your smoking behaviour?", *number of cigarettes* – "How many cigarettes do you smoke on a typical day?",

frequency of alcohol consumption – "In the last 12 months, that is since [MONTH, YEAR], how often have you had a drink containing alcohol?

This could be wine, beer, cider, spirits or other drinks containing alcohol.",

amount of alcohol on workdays – "Grams of alcohol consumed, last time drinking on a weekday, Monday to Thursday",

grams of alcohol on weekends – "Grams of alcohol consumed, last time drinking on a weekend, Friday to Sunday",

physical activity – "On how many of the last 7 days did you walk quickly, do sports or other physical activity for 30 minutes or longer? " (European social survey; 2015; ESS, 2014).

PROCEDURE AND DATA ANALYSIS

For data analysis, IMB SPSS Statistics version 20.0 software package was used. Outliers were removed before data analysis. The relationship between the variables' data was analyzed using Pearson's correlation coefficient ρ. Statistical significance was set at p> .05.

RESULTS

Statistically significant correlations between health behaviour and cognitive, social and emotional resources of health in Lithuanian males are presented in Table 1.

Analysis of the data showed that cognitive resources were related to higher consumption of fruit and vegetables, more favourable smoking status, lower frequency of alcohol use, lower quantities of alcohol and cigarettes (in drinkers and smokers). Participation in social activities was connected to more frequent alcohol use, greater amount of consumed alcohol, higher physical activity and less frequent consumption of fruits and vegetables. Religiousness had a link with favourable smoking status, alcohol use frequency, and lower number of cigarettes (in smokers). Notably, resources of negative emotional health were related to lower consumption of fruits and vegetables. Feelings of sadness and depression were connected to lower physical activity, depression was also associated with more frequent use of alcohol and cigarettes, and with higher amount of alcohol and greater number of cigarettes. Conversely, higher scores on happiness were related to higher consumption of fruit

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and vegetables, higher physical activity, more favourable smoking and alcohol use status, lower number of cigarettes and alcohol (in users).

Links between health behaviour and cognitive, social and emotional resources of health in Lithuanian females are presented in Table 2.

Table 1. *Links between health behaviour and cognitive, social and emotional resources of health in Lithuanian males (N=750, ESS data)*

Health resources	Health behaviour							
	Fruit consumption	Vegetable consumption	Physical activity	Smoking status	Frequency of alcohol use	Number of cigarettes (only in smokers)	Amount of alcohol on workdays (only in drinkers)	Amount of alcohol on weekends (only in drinkers)
Cognitive								
Reliability of others	-0,183***	-0,144***		0,106**	0,131***	-0,187***	-0,168***	-0,083*
Supportiveness of others	-0,155***	-0,170***		0,141**	0,133***	-0,136*	-0,202***	-0,13***
Helpfulness of others	-0,172***	-0,127***		0,15***	0,189***	-0,218***	-0,189***	-0,102**
Social								
Religiousness				0,105**	0,088*	-0,13**		
Meeting with friends	-0,189***	-0,173***	0,203***		-0,099**			
Possibilities to discuss	-0,222***	-0,195***	0,235***					
Participation in social activities	-0,211***	-0,225***	0,15***		-0,148***		0,095*	0,105*
Emotional								
Depression	0,211***	0,198***	-0,094*	-0,105**	-0,1**	0,276***	0,184***	0,088*
Sadness	0,159***	0,209***				0,191***		
Loneliness	0,156***	0,219***	-0,118**			0,115*	0,13**	0,086*
Happiness	-0,291***	-0,172***	0,141***	0,135***	0,138***	-0,173***	-0,14***	

*= p<.05 ** = p <.01 ***= p<.001

Table 2. *Links between health behaviour and cognitive, social and emotional resources of health in Lithuanian females (N=1115, ESS data)*

Health resources	Health behaviour							
	Fruit consumption	*Vegetable consumption*	*Physical activity*	*Smoking status*	*Frequency of alcohol use*	*Number of cigarettes*	*Amount of alcohol on workdays*	*Amount of alcohol on weekends*
Cognitive								
Trustfulness of others	-0,165***	-0,166***						
Supportiveness of others	-0,075*	-0,098**				-0,189*		
Helpfulness of others		-0,072*						
Social								
Religiousness			-0,108***	0,208***	0,129***			-0,085*
Meeting with friends	-0,199***	-0,163***	0,146***	-0,112***	-0,131***			
Possibilities to discuss	-0,208***	-0,193***	0,202***	-0,115***	-0,163***		0,129***	
Participation in social activities	-0,217***	-0,157***	0,171***	-0,15***	-0,203***			0,09*
Emotional								
Depression	0,233***	0,194***	-0,071*		0,074*		0,083*	
Sadness	0,148***	0,156***					0,114**	
Loneliness	0,211***	0,16***	-0,68*		0,087*		0,117**	
Happiness	-0,265***	-0,182***	0,164***					

*= p<.05 ** = p <.01 ***= p<.001

Analysis of the results (see Table 2) showed that, in females, the opinions that people could be trusted, were helpful and supportive were related to higher frequency of vegetable consumption. Opinions that

people could be trusted and that people were supportive were also tied to higher frequency of fruit consumption. The belief that people are supportive also had a connection to smaller quantities of smoked cigarettes (in smokers).

Higher scores on religiousness were related to lower physical activity, alcohol use frequency, more favourable smoking status, and lower amount of consumed alcohol on weekends (in drinkers). Greater possibilities to discuss private, intimate questions and more frequent meetings with friends and participation in social activities were related to higher rate of fruit and vegetable consumption, higher physical activity, more frequent alcohol use, and less favourable smoking status. Also, possibilities to discuss and participation in social activities were related to higher amount of alcohol on workdays and weekends, respectively. Resources of negative emotional health (feeling of depression, loneliness, sadness) were found to have a link with less frequent fruit and vegetable consumption; feelings of depression and loneliness were related to lower physical activity and lower alcohol use frequency; however, all three of these resources had a correlation with higher amount of alcohol on workdays (in drinkers). Higher degree of happiness was linked to more frequent fruit and vegetable consumption and higher physical activity.

DISCUSSION

The study results revealed that cognitive, social and emotional resources of health had contrasting links to health behaviour in Lithuanian male and female residents. Previous studies (Smitas, Gustainiene, 2017) showed that Lithuanian males and females' levels of emotional and cognitive health were lower than that of the countries without soviet experience (i.e. Scandinavian, Western European countries). This study confirmed that social, emotional, and cognitive health resources were related to health behaviour. It is apparent that less favourable health behaviour negatively affects health. The study also showed that lower levels of emotional and cognitive health were related to less favourable health behaviour as well. Significantly, these resources were more pronounced in the male subsample. Evidently, according to the data of the United Nations, compared to other males in the European Union, the life expectancy of Lithuanian men is higher only than that of the Latvians

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and Estonians (United Nations, 2007). A possible explanation could be that, as levels of emotional and cognitive health resources are lower in Lithuanian population, this results in less favourable health behaviour which, subsequently, causes premature death. The data from other countries also suggests that social trust has a positive connection to subjective health in general (d'Hombres, Rocco, Suhrcke, Mckee, 2010), and it is possible to claim that currently social trust is related not only to subjectively perceived health, but also to a more robust indicator of health: health related behaviour.

The most surprising association was between social resources of health and alcohol use – more frequent participation in social activities was linked to more frequent alcohol use and higher quantities of consumed alcohol. While other studies demonstrate that taking part in social activities positively affects physical health (Novek, Menec, Tran, Bell, 2013), evidence from this study suggests some other, possibly cultural, aspects: higher participation is social activities is associated with less favourable health behaviour, i.e. increased alcohol consumption. This may be explained by the fact that alcohol use was highly tolerated in Lithuania for a long time and alcohol use at work or at social gatherings was a common practice. Some authors find that alcohol-related mortality in post-soviet countries is a major public health threat, but determinants of this phenomenon are poorly understood (Grigoriev, Jasilionis, Stumbrys, Stankuniene, Shkolnikov, 2017).

Other evidence suggests that higher participation and low social trust is related to lower subjectively perceived health in the sample of older adults (Numella at al., 2008) and the data from this study possibly demonstrates the link between low social trust and higher participation and higher consumption of alcohol both in frequency and quantity (especially in the sample of males), while other studies show gender differences in trust – the reaction to trust in men is somewhat less intense than in women (Riedl, Hubert, Kenning, 2010). This possibly means that females are more likely to trust others than males. More studies are needed to explore the cultural connection between health resources and health behaviour.

Nevertheless, as a limitation of the present study, it should be noted that resources of physical health, such as blood pressure, heart rate and glucose levels, were not analyzed, because of the lack of data.

However, health behaviours that are closely linked to physical health were analyzed.

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KAIP EMOCINIAI, KOGNITYVINIAI IR SOCIALINIAI SVEIKATOS IŠTEKLIAI SUSIJĘ SU SVEIKATAI NEPALANKIU ELGESIU? LIETUVOS ATVEJIS

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Santrauka. *Problema*. Sveikata dažniausiai analizuojama iš vienakryptės perspektyvos, pavyzdžiui, medicinos moksluose vyraujantis biomedicininis tyrimų modelis teigia, kad sveikata yra ligos nebuvimas, o liga yra sukelta tam tikrų organinių pokyčių, kurie pasireiškia žmogaus kūne. Psichikos reiškiniai iš esmės yra nesvarbūs, sergantis asmuo iš esmės nėra atsakingas už savo sveikatą, o ligos gydymas dažniausiai yra pasyvus (Wade, Halligan, 2004). Tačiau, remiantis Pasaulio sveikatos organizacijos duomenimis, sergamumas ir mirtingumas didėja nepaisant gydymo metodų, technologijų pažangos, ir prognozuojama, kad iki 2030 metų mirtingumas toliau didės visame pasaulyje (Mathers, 2008). Manoma, kad tik visapusis požiūris į sveikatą gali sumažinti mirštamumą (Von Kanel, 2008). Tyrimų rezultatai rodo, kad apie 90 proc. Lietuvos vyrų ir moterų turėtų vartoti daugiau vaisių ir daržovių (Petkeviciene, Kriaucioniene, 2005), pusės berniukų ir keturių merginų iš penkių fizinis aktyvumas yra per mažas (Zaborskis, Raskilas, 2011), bet šie tyrimai paprastai apsiriboja siūlymais valgyti daugiau vaisių bei daržovių ir daugiau fiziškai judėti. Šie siūlymai dažniausiai neduoda apčiuopiamo rezultato, jei į juos nėra labiau gilinamasi. Šio tyrimo tikslas – nustatyti Lietuvos vyrų ir moterų reprezentatyvios imties ryšius tarp skirtingų emocinių (prislėgtumo, nerimastingumo, liūdnumo ir laimingumo), kognityvinių (nuostatų, kad kiti žmonės linkę padėti, palaikyti, yra patikimi) ir socialinių (religingumo, susitikimų su draugais, dalyvavimo socialinėje veikloje, galimybės pasikalbėti apie asmeninius, artimus

klausimus) sveikatos išteklių ir sveikatai nepalankaus elgesio (vaisių ir daržovių vartojimo dažnio, rūkymo statuso, surūkomų cigarečių skaičiaus, alkoholio vartojimo dažnio, alkoholio kiekio darbo dienomis ir savaitgaliais, fizinio aktyvumo). **Metodai.** Atliekant tyrimą naudoti Europos socialinio tyrimo duomenys ir ekspertų sukurti klausimai. Tyrimo imtis buvo sudaryta iš Lietuvos bendrosios populiacijos ir apima 1865 tyrimo dalyvių duomenis. Tyrime dalyvavo 750 (40,2 %) vyrų ir 1115 (59,8 %) moterų. Tyrimo dalyvių amžiaus vidurkis – 49,59 (SD =18,29) metų. **Rezultatai.** Tyrimo duomenų analizė parodė, kad tarp Lietuvos vyrų dažnesnis įsitraukimas į socialinę veiklą siejasi su dažnesniu ir gausesniu alkoholio vartojimu, bet nėra susijęs su rūkymu ar surūkomu cigarečių skaičiumi rūkančiųjų imtyje. Tarp Lietuvos moterų dažnesnis įsitraukimas į socialinę veiklą siejasi su dažnesniu alkoholio vartojimu, dažnesniu rūkymu, bet nesusijęs su surūkomų cigarečių skaičiumi ar suvartoto alkoholio kiekiu vartojančiųjų imtyse. Iš tyrimo duomenų matome, kad socialinė aplinka su sveikata susijusį asmens elgesį veikia ne tik teigiamai, bet ir neigiamai. **Diskusija.** Ankstesnių tyrimų rezultatai parodė, kad tarp Lietuvos vyrų ir moterų emociniai bei kognityviniai sveikatos ištekliai yra žemesni, palyginti su Skandinavijos, Vakarų Europos (ne posovietinio bloko) valstybėmis (Smitas, Gustainiene, 2017). Šios analizės rezultatai parodė, kad ne tik asmeniniai (emociniai, kognityviniai) sveikatos ištekliai, bet ir socialiniai sveikatos ištekliai gali neigiama linkme paveikti su sveikata susijusį elgesį. Įprasta manyti, kad dažnesnis įsitraukimas į socialinę veiklą teigiamai veikia asmens sveikatą (Novek, Menec, Tran, Bell, 2013), bet šio tyrimo duomenys rodo priešingai – dažnesnis įsitraukimas į socialines veiklas vyrų imtyje siejasi su dažnesniu alkoholio vartojimu ir su dažnesniu rūkymu moterų imtyje. **Išvados.** Dažnesnis įsitraukimas į socialines veiklas siejasi su dažnesniu alkoholio vartojimu vyrų imtyje, o moterų imtyje – su dažnesniu rūkymu.