



RECREATIONAL-HEALTH USE OF SAUNAS BY 19-20-YEAR OLD POLISH UNIVERSITY STUDENTS

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ABSTRACT

Background: Little research providing reliable information on the popularity of sauna among university students has been found in Polish and foreign literature. **Aim:** the aim of the research conducted at the University of Warmia&Mazury in Olsztyn was to establish the level of awareness of the benefits of sauna and its popularity among the 1st year students. In addition, the influence of sauna on students' emotional and physical well-being was also examined. **Materials and methods:** Total of 1100 students (550 females and 550 males) between 19-20 years old who filled in an anonymous questionnaire took part in the research. **Results:** Results revealed that although students enjoyed using sauna, more than 60% of women and men had never attended sauna before, and the highest percentage have used sauna only twice or three times in their life. Few women and men visited sauna studios in sports clubs, due to their considerable physical inactivity. First year students have very little awareness of the rules of using sauna, contraindications against its use and recommendations on its practice. It was observed that sauna bathing exerted a highly relaxing and calming influence on the vast majority of students. **Conclusions:** It was observed that despite a relatively low popularity of sauna among university undergraduates, which was mainly caused by a low awareness of the benefits of sauna on health, the participants confirmed a highly positive influence of sauna bathing on their both physical and emotional well-being. Therefore, sauna treatment may significantly contribute to improving mental health of university students, and for this reason should be promoted and included in the curriculum of physical education.

Keywords: Sauna treatment, 1st year students, Habits, Awareness, Popularity, Influence.

1. INTRODUCTION

The origins of sauna date back to the ancient times, in particular to a popular custom of taking alternating hot and cold baths in special Roman steam baths. Over a long period of time the use of sauna has been prevalent in many Scandinavian countries (see e.g. (Smith and Puczkó, 2009), although it should be noted that in the recent decades it has become a popular form of wellness in many countries of Central Europe (Kukkonen-Harjula and Kauppinen, 2006) and the United States (Valtakari, 1988).

Without a doubt this type of treatment is particularly noticeable among the Finns, including children and young Scandinavians taking sauna baths for health purposes at least once a week. Out of 5.2 million people living in Finland almost 2 million use saunas regularly. It is also in Finland, in Heinola, a town situated 87 kilometers near Helsinki, where the World championships in the longest exposure to sauna is held every year, receiving great publicity all over the world (Reilly, 2010).

Use of the sauna in sport has grown significantly since the Olympic Games in 1936, during which the Finnish athletes demanded sauna in the Olympic villages a wellness studio (Ott, 1948). That was a turning point from which the sauna has become quite commonly used in the training plans of many sports disciplines (Żuchowicz *et al.*, 1999; Blatteau *et al.*, 2008; Tyka *et al.*, 2008). Among the main reasons why sportsmen use sauna are the following benefits: cleansing of body, refreshing the mind, recovering more rapidly and relaxing (Rehuen, 1988).

1.1. The Influence of Sauna on the Human Body

In the last century, most studies related to the use of sauna were carried out in Germany and Finland (Kukkonen-Harjula and Kauppinen, 2006). In Finland, e.g. Jokinen (1989), Kauppinen (1989 a, b, c), Vähä-Eskeli (1991), and Vanakoski (1996) have focused on sauna in their doctoral theses, while Kauppinen (1997), Hannuksela and Ellahham (2001), Kukkonen-Harjula and Kauppinen (2006) have written especially on health effects and cons of sauna. (Kukkonen-Harjula, 2007)

The influence of sauna on human body is primarily based on activating thermoregulatory mechanisms, which in turn cause reactive changes in the whole system. All transformation depends on whether the body is under the influence of heating (heating phase) or cooling (cooling phase). During the heating phase, under the influence of thermal stress of cardiovascular system, blood vessels dilate, blood flow and cardiac pulse increases, which in turn leads to heavy perspiration. Heart rate can exceed twice the original level, and its cardiac output increases by 70% compared to the rest output, and a total peripheral resistance of the vessels decreases by about 40%. Apart from this, diastolic blood pressure and mean arterial pressure increases without significant changes in relation to systolic blood pressure (Kauppinen and Vuori, 1986; Eisalo and Luurila, 1988; Kukkonen-Harjula *et al.*, 1989; Kauppinen, 1989 a, b, c; Kukkonen-Harjula and Kauppinen, 2006) The intensity of the heart and conduction system depends only on the temperature in the sauna. The temperature of the skin fluctuates between 40 °C during the heating phase to 33 °C in the cooling phase following immersion in cold water. As a result of intensive body sweat, the body can lose 0.5

– 1.0 liter of body fluid that needs to be replenished while taking sauna bathing and afterwards (Ahonen and Nousiainen, 1988).

High temperatures in the sauna activate many systems of human body such as endocrinal, leading to the secretion of adrenalin (Leppäluoto *et al.*, 1986; Kukkonen-Harjula and Kauppinen, 1988; Jezová *et al.*, 1994; Pilch *et al.*, 2003; Pilch *et al.*, 2007; Pilch *et al.*, 2008), ACTH, cortisol, and prolactin concentration after sauna bath, which could result from the body's acclimatization to high temperature (Pilch *et al.*, 2005). The activation of endocrinal system is intended to produce more water retention in the body and maintain thermal equilibrium. As a result of perspiration, the amount of sodium serum in the body is reduced (Kauppinen, 1989). It was also observed that sauna bathing reduced total cholesterol and concentration of low density lipid, and increased high density lipids (Pilch *et al.*, 2010). Regular exposures to sauna alleviates pain accompanying injuries of muscle-skeletal system and improves mobility of joints in patients suffering from rheumatism (Hannuksela and Ellahham, 2001; Kukkonen-Harjula and Kauppinen, 2006).

Scoon *et al.* (2007) as well as Ernst *et al.* (1986), showed that a 3-week post-exercise sauna bathing produced a worthwhile enhancement of endurance running performance, probably by increasing blood volume. This may be caused by the release of blood from other organs e.g. kidneys, and increased secretion of erythroproteins (Pagel *et al.*, 1988), which in consequence increases endurance capacity of human body by an increase in the peripheral blood causing a more efficient transport of blood to the working muscles (Ridge and Pyke, 1986; Luetkemeier and Thomas, 1994). Additionally, the research carried out on scuba divers showed that a single pre-dive sauna session significantly decreases the number of circulating bubbles after a chamber dive, which may reduce the risk of decompression sickness (Blatteau *et al.*, 2008).

Arguments presented above show clearly that sauna is a popular social phenomenon among the general public of various health and sporting aspirations or social and professional backgrounds. Even though sauna is noticeably growing in popularity in Poland, it should be noted that so far there have been no published studies on the exact popularity of sauna among Poles. Therefore, the issue of examining the popularity of sauna among Polish students and its influence on their physical and emotional well-being can be very interesting and useful in assessing the pro-health attitudes as compared with other nationalities.

The aim of the study was to assess Polish students' knowledge of sauna and frequency of taking sauna bathing. The influence of sauna treatment on mental disposition and their responses after the sauna treatment were also evaluated. The following questions were formulated for this purpose:

1. What is the level of 1st year students' knowledge of sauna treatment and frequency of using saunas in their free time?
2. How does sauna treatment affect the mood of both male and female students?

2. MATERIALS AND METHODS

2.1. Ethics

The research was carried out in compliance with prior consent from the Ethical Committee of UWM, the volunteers willingly agreed to participate in the study, which they confirmed by signing a written statement.

2.2. Participants

The study on the issues of sauna was conducted among the full time 1st year students aged 19-20, in 2012 during obligatory physical education (P.E.) classes. The total number of the 1st year students participating in compulsory P.E. classes were offered to take part voluntarily in wellness activities at the sauna. The program of such activities was developed by the director of the cross-sectional research project “University Promoting Healthy Lifestyle” working at the Department of Physical Education & Sport. The aim of the program was to examine the popularity of sauna among young people beginning their studies. First year students were specifically chosen for the purpose of the project because they are particularly valuable as a research group as it is still possible to shape and alter their attitudes and health habits. Moreover, this research complements regular cross-sectional studies, which have been conducted biannually at the UWM since 2000 (Podstawski, 2006; Podstawski, 2011). The vast majority of students were permanent residents of the Warminsko-Mazurskievoivodeship. It was also assessed whether the number of students (separately for male and female) adopted for the research is sufficient so as to treat the test as a representative of this type of research. The following formula was used for this purpose (1):

$$n = \frac{\mu_{\alpha}^2}{4d^2}, \quad (1)$$

Where:

d – maximum (acceptable) estimation error. μ_{α} – value read from the normal distribution table N(0.1) at the accepted significance level of $1 - \alpha$. for the accepted level of significance $1 - \alpha = 0.95$ ($\mu_{\alpha} = 1.96$) it was assumed that the estimation error does not exceed 5% (Nowak, 2002). The necessary number of participants was established as 485, thus lower than the actual number accounted for in the studies (550). That is why the study group of male and female students can be considered homogenous and representative for the population of 1st year UWM students.

2.3. Self-administered Questionnaire

Anonymous questionnaire consisted of 22 questions (including 15 close-ended and 9 open-ended questions). Open ended questions provided the students with an opportunity to express themselves fully and freely. The questions raised in a questionnaire related to the issues of the popularity of sauna and the frequency of its use among Polish students; personal feelings and impressions connected with sauna bathing; their willingness to participate in specifically designed classes of physical education, which in their program would include regular use of the sauna. The questions in the last part of the survey included information on the participants’ gender and age.

2.4. Statistics

The analysis of results used descriptive statistics and statistical calculations were performed with using the Statistica PL v. 10 software package.

3. RESULTS

Tables from 1 to 5 show the responses concerning the popularity of sauna among UWM students.

Table-1.The use of sauna by the UWM students before and during their studies

Factor	Men		Women	
	N = 550	%	N = 550	%
Using sauna before studies				
Yes	211	38.36	219	39.82
No	339	61.64	331	60.18
Place of using sauna before studies	N = 211	%	216	%
Swimmingpool	115	54.50	122	56.48
SPA centre	16	7.58	29	13.43
Private sauna athome	0	0.00	2	0.93
Fitness club	22	10.43	17	7.87
Hotel	34	16.11	28	12.96
Sports club	3	1.42	3	1.39
Tourist resort	12	5.69	7	3.24
School	9	4.27	8	3.70
Frequency of sauna bathing	N = 211	%	N = 218	%
1 -2 times in life	112	53.08	92	42.20
3 - 20 times in life	41	19.43	30	13.76
1 - 2 times a week	17	8.06	10	4.59
1 - 2 times a month	23	10.90	19	8.72
1 – 4 times a year	18	8.53	67	30.73
Using sauna atuniversity	N=550	%	N=550	%
Yes	98	17.82	167	30.36
No	452	82.18	383	69.64

Explanations: N – number of respondents, % - percentage

Of all the surveyed, a similar percentage of men and women admitted to using the sauna before the studies (38.36%, and 39.82% respectively). Among them the highest percentage of respondents used the sauna at the swimming pool (men – 54.50%, and women – 56.48%). Over 16% of men and more than 12% of women took sauna bathing in hotels and much fewer men (7.58%) and more women (13.43%) in centers of SPA. Few people used their own sauna at home (men – 0%, and women – 0.93%) and sports clubs and schools (men: 1.42% and 4.27%, women: 1.39% and 3.70%, respectively). Among the students (men and women) the highest percentage have used the sauna ones or twice in their life (53.08%, and 42.20% respectively). Much fewer participants have used sauna three up to twenty times in their life (men – 19.43%, women – 13.76%). Over 30% of female participants have used sauna once up to four times a week. Only 17.82% of men and 30.36% of women visited sauna studios during their studies (Tab. 1).

Table-2. Evaluation and impression of sauna experience by the students

Factor	Men		Women	
Rating of the experience after the sauna treatment				
Scale	N = 211	%	N = 264	%
1 – veryweak	1	0.47	0	0
2	2	0.95	0	0
3	4	1.90	1	0.38
4	3	1.42	2	0.76
5	11	5.21	19	7.20
6	11	5.21	26	9.85
7	25	11.85	48	18.18
8	53	25.12	70	26.52
9	47	22.27	52	19.70
10 – verywell	54	25.59	46	17.42
Feeling of discomfort				
Rating	N = 211	%	N = 288	%
Yes	50	23.70	43	14.93%
No	161	76.30	245	85.07%
Reasons for discomfort				
Reasons	N = 48	%	N =45	%
Presence of opposite sex	6	12.50	9	20.00
Toomanypeople	17	35.42	21	46.67
Too high temperature	25	52.08	15	33.33
Rating of experience the following day				
Scale	N =211	%	N =289	%
1 – veryweak	3	1.42	1	0.35
2	4	1.89	1	0.35
3	9	4.26	7	2.42
4	9	4.26	11	3.81
5	17	8.05	19	6.57
6	15	7.10	25	8.65
7	27	12.79	54	18.69
8	49	23.22	80	27.68
9	46	21.80	58	20.07
10 – verywell	32	15.16	33	11.42
Symptoms of mood				
Mood	N = 208	%	N = 156	%
I felt refreshed and invigorated	190	91.35	125	80.13
I felt tired, exhausted and sleepy	18	8.65	31	19.87

Explanations: N – number of respondents, % - percentage

Table 2 presents the students' feedback on staying in the sauna, which was rated on a scale from one to ten points. Of all the 211 people using the sauna, men rated the experience of staying in the sauna a little higher than women. The mean rate of men was 8.11 (median 8) and women 7.90 (median 8). The difference was statistically significant (Mann–Whitney U test, $Z=-1.85$, $p=0.018$). Marginal share of men and not a single woman rated the experience of staying in the sauna 1-2. The vast majority of men and women felt no discomfort during their stay in the sauna (76.30, and 85.07% respectively). Out of 23.70% men and 14.93% women declaring discomfort, the examined indicated three basic causes: too high temperature, too high number of participants and the presence of the opposite sex. When assessing their mood the following day, the distribution of ratings of

both sexes was similar (Mann–Whitney U test, $Z=-.212$, $p=0.832$). The mean rate of men was 7.41 (median 8) and women 7.55 (median 8). The difference between men and women was not statistically significant (Mann–Whitney U test, $Z=-0.21$ $p=0.832$). The participants who granted the assessment from the upper scale indicated that they felt refreshed and invigorated (men – 91.35%, and women – 80.13%). Almost 9% of male and 20% of female felt fatigue, exhaustion, and sleepiness the following day. Maybe for that reason, men rates were statistically significantly (Mann–Whitney U test, $Z=-3.37$ $p=0.001$) and women almost statistically significantly (Mann–Whitney U test, $Z=-1.93$ $p=0.054$) lower in the following day than immediately after the sauna experience.

Table-3.Reasons for taking or not taking sauna bathing

Factor	Men		Women	
	(N = 339)	%	(N = 331)	%
Negative reasons				
Unprepared	27	7.96	22	6.64
Lack of interest	71	20.94	82	24.77
No offer	88	25.95	81	24.47
Health contraindications	86	25.36	72	21.75
Absence	67	19.76	74	22.35
Positive reasons	(N = 211)	%	(N = 219)	%
Included in P.E. classes	67	31.75	59	26.94
For weightloss	38	18.00	31	14.15
For free	24	11.37	6	2.73
Out of curiosity	46	21.80	4	1.82
For relaxation	19	9.00	64	29.22
For variety	17	8.05	55	25.11

Explanations: N – number of respondents, % - percentage

Among the reasons which most significantly determined unpopularity of sauna among students male students mentioned: no alternative of this type of classes as P.E. (25.95%), health contraindications (25.36%), lack of interest (20.94%), and the absence at the P.E. classes (19.76%). Women showed similar reasons (24.47%, 21.75%, 24.77%, and 22.35% respectively). The main reasons for men to participate in the sauna treatment were: the opportunity of using sauna during P.E. classes (31.75%), curiosity (21.80%), and weight loss (18%) whereas women indicated relaxation (29.22%), including sauna treatment in the P.E. classes (26.94%) and attractiveness (25.11%) (Tab. 3).

Table-4.Students’ opinions on the basic rule for the use of sauna and its influence on the human body, contraindications against its use

Factor	Men		Women	
	N = 550	%	N = 550	%
I know the rules of sauna use				
Yes	171	31.09	348	63.27
No	379	68.91	202	36.73
Familiar with rules	N=239*	%	N =480*	%
You have to be healthy, you must not be mildly or acutely ill while using sauna	45	18.83	40	8.33
Do not forget to remove your watch and jewellery	51	21.34	86	17.92

Before the bath you should take a shower and dry the body thoroughly	9	3.77	17	3.54
Stay in sauna no longer than 10-15 minutes	59	24.69	118	24.58
You mustn't be under the use of alcohol	3	1.26	5	1.04
You should drink extensively before the sauna	4	1.67	10	2.08
You should spread the towel under the whole body in the sauna	11	4.60	72	15.00
You should cool the body after the sauna by taking a cold shower	57	23.85	132	27.50
The influence of sauna on human body	N =652*	%	N =798*	%
Detoxication of the body	179	27.45	193	24.19
Cleansing the skin	42	6.44	90	11.28
Activates blood circulation	60	9.20	71	8.90
Accelerates fat burning	22	3.37	59	7.39
Relaxes muscles and nerves	110	16.87	63	7.89
Expand the blood vessels (blushing of the skin)	14	2.15	38	4.76
Enhances resistance to infection	30	4.60	54	6.77
Increases perspiration	76	11.66	77	9.65
I don't know	119	18.25	153	19.17
I know contraindications	N=550	%	N =550	%
Yes	160	29.09	361	65.64
No	390	70.91	189	34.36
Contraindications which I know	N=194*	%	N = 341*	%
Cardiopulmonary failure	52	26.80	52	15.25
Myocardial disease	65	33.51	107	31.38
Hypertension	61	31.44	76	22.29
Capillary skin	7	3.61	56	16.42
Varicose veins	3	1.55	14	4.11
A history of meningitis	4	2.06	13	3.81
Diabetes	2	1.03	23	6.74

Explanations: N – number of respondents, % - percentage *- the examined persons could give several answers

Table 4 presents the opinions of students about the rules of using sauna, its influence on the human body and contraindications against the use. Out of all surveyed men, almost 69% admitted to having no knowledge of the basic rules of using sauna. As for women, the situation was reverse i.e., more than 63% admitted to being familiar with the rules. Both groups identified the following key rules of using sauna: staying no longer than 10-15 min (men - 24.69%, and women - 24.58%), cooling the body after taking sauna bath (men - 23.85%, and women - 27.50%), and removing their jewelry and watches (men - 21.34%, and women – 17.92%). While describing the impact of sauna on human body the surveyed mentioned mainly: detoxication of human body (men – 27.45%, and women – 24.19%) and increased perspiration (men – 11.66%, and women – 9.65%). In addition, male students also mentioned relaxation of muscles and nerves (16.87%), and women – treatment of skin (11.28%). Nearly a quarter of men and women were completely unfamiliar with the effects of sauna on human body (18.25%, and 19.17% respectively). Over 70% of men (70.91%) and 34% of women (34.36%) admitted to knowing very little about the contraindications against using sauna. The surveyed primarily pointed at cardiorespiratory failure (men – 26.80%, and women –

15.25%), heart diseases (men – 33.51%, and women – 31.38%), and hypertensive disease (men – 31.44%, and women - 22.29%), whereas women pointed to capillary skin (16.42%) (Tab. 4).

Table-5. Need for organizing such classes at university

Factor	Men		women	
Need	(N=549)	%	(N=550)	%
Yes	505	91.99	484	12.00
No	44	8.01	66	88.00
If so why?	(N=562*)		(N = 756*)	
Interesting type of activity	229	40.75	255	33.73
Relaxation	123	21.89	174	23.02
Hardening of the body	43	7.65	32	4.23
Improving physical condition	51	9.07	54	7.14
Skin care	21	3.74	54	7.14
Improving appearance	20	3.56	52	6.88
Cleansing of the body	50	8.90	73	9.66
Treatment of illnesses	14	2.49	26	3.44
Weight loss treatment	10	1.78	33	4.37
I don't know	1	0.18	3	0.40
Why not?	(N=44)		(N = 65)	
No reasons	23	52.27	26	40.00
Infections	21	47.72	39	60.00
Appropriate conditions for the use of sauna at UWM	(N=550)		(N=541)	
No	136	24.73	177	32.84 %
Yes	374	68.00	350	64.94 %
I don't know	40	7.27	14	2.60 %
Would you like to use sauna regularly?	(N=550)		(N=539)	
No	418	76.00	296	54.92
Yes	85	15.45	177	32.84
I don't know	47	8.55	66	12.24

Explanations: N – number of respondents, % - percentage *- the examined persons could give several answers

Table 5 shows the opinions of both male and female students on the necessity for including activities in the sauna in the obligatory P.E. classes. The vast majority of men (91.99%) and women (88.00%) saw the need for the P.E. course in the form of sauna bathing. The use of this type of activity is motivated by the following considerations: the sauna is an interesting form of physical activity (men - 48.75%, and female – 33.73%), relaxes people (men - 21.89%, women – 23.02%), improves physical condition (men – 9.07%, and women – 7.14%), and cleanses the body (men – 8.90%, and women – 9.66%). Those opposed to including sauna in P.E. classes were not able to give any reason (men – 52.27%, and female – 40.00%), or they stated that sauna causes infections (men – 47.72%, and female – 60.00%). The majority of men and women evaluated the sauna studios at the UWM as adequate and comfortable (68.00%, and 64.94% respectively). The majority of the respondents showed no interest in using sauna regularly (men - 76.00%, and women – 54.92%). Over 15% of men and 30 % of women constituted potential sauna-goers. Those undecided accounted respectively for 8.55% and 12.54% (Tab. 5).

4. DISCUSSION

The studies present an interesting range of opinions and attitudes of 1st year students on the use of sauna. The study also confirmed the need for such research focusing on health aspects with reference to young people at university. Such an opinion results from the respondents' feedback on the use of sauna, which was positive in general, consequently enabling teaching staff to shape pro-health attitudes at the highest level of education.

Although most of the respondents knew where the sauna studios were situated at the campus, none of them attended the places before and during the studies. Since the largest percentage of respondents (men and women) took sauna bathing at swimming pools, it can be assumed that a recently opened water recreational complex with a Finish and steam sauna might become especially attractive for students interested in sauna bathing. The smallest percentage of respondents used the sauna in their houses, which might be explained by the lack of tradition of building saunas in Polish households, and taking sauna bathing at home is rather incidental. This was confirmed by our research, which showed that the vast majority of respondents used sauna once or twice in their life. The exception was a significant percentage (over 30%) of women taking sauna once up to four times a week, which may indicate that female students are more health-conscious in comparison to male students.

No regular use of sauna stems from the Poles' ignorance of its beneficial effects on the human body. The results presented by our research show that 1st year students know very little about the rules of using sauna, contraindications against the use and recommendations on the practice. One of the popular misconceptions concerning using sauna in Poland is that people with heart problems or hypertension should not take sauna bathing under any circumstances whereas the reverse is true i.e. regular and long term use of sauna helps to lower blood pressure in people with cognitive heart failure, improving vascular endothelial function and the left ventricular ejection fraction (Nguynen *et al.*, 2004). Japanese researchers have shown that the use of thermal therapy at 60°C-dry sauna improves ventricular arrhythmias, cardiac arrhythmias and heart rate variability in people with chronic heart failure as well as hemodynamic parameters, endothelial function and clinical symptoms in many patients (Tei *et al.*, 1995; Tei and Tanaka, 1996; Imamura *et al.*, 2001; Kihara *et al.*, 2002; Kihara *et al.*, 2004).

Curiously, very few men and women used the sauna at the sports clubs, which may be surprising as virtually every sport club in Poland is equipped with facilities such as sauna. This negative phenomenon results from a very low level of physical activity of the surveyed students, the vast majority of which are classified as physically inactive (Choszcz *et al.*, 2012). Low level of physical activity among Polish students was confirmed by a cross-sectional study on students' health, conducted at the UWM since 2000 (Podstawski, 2006; Podstawski, 2011) as well as among the students of Polish medical schools (Lisicki, 2006).

The vast majority of men and women who took sauna bathing rated both the experience and the mood the following day as very positive (the highest scores on the scale from one to ten). A low percentage of students felt uncomfortable at sauna, which could be due to the fact that the surveyed used the sauna during P.E. classes at UWM for the first time in their life and they might not have been used to high temperatures. Some people preferred to stay in the sauna in a smaller group and

not with the opposite sex. Such feelings can be explained by rare use of sauna bathing in the public places due to some kind of conservatism and traditionalism of Poles. Peoples using public sauna have to wear a swim suit and have a towel, and taking sauna bathing in the nude is a very rare phenomenon in Poland. Our research has also shown that a certain percentage of people feel tired and sleepy after the sauna, which may indicate that the sauna bath does not affect all equally.

The vast majority of respondents described the influence of sauna as relaxing and as a result they felt refreshed and calmed. That is why sauna treatment can contribute significantly to improving their mental health, which is of great importance for young people during their studies. As it was indicated in numerous studies, college time is a very stressful period, which requires making many difficult decisions in life. The stress is particularly intensified during exams sessions (Bayram and Bilgel, 2008), and is responsible for a significant increase in depression and other forms of psychopathology among students (Twenge *et al.*, 2010).

The studies are also an interesting reference material for the observation of a similar type carried out among students studying in other countries. Not a single study on the use of sauna by university students has been found in foreign literature, therefore such a study would be undoubtedly an interesting insight into the influence of socio-cultural background on the pro-health attitude.

5. CONCLUSIONS

The study showed a relatively low level of interest in using sauna among university students. The vast majority of students attended sauna only one or twice in their life, which probably resulted from their poor knowledge about the beneficial effects of sauna on human body, false information against its possible use for health purposes. Since the vast majority of students described the sauna experience as relaxing and calming, it must be assumed that sauna treatment can contribute significantly to improving students' physical and emotional well-being. Research on the sauna treatment among students might provide a great deal of interesting information, and for this reason sauna should be promoted and included in P.E. classes at the university.

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