

STUDENTS PRACTICE AND MOTIVATION FOR PHYSICAL ACTIVITY: INTERNATIONAL COMPARATIVE ANALYSIS

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Keywords: motivation, students, physical activities, project “Villages on Move Network“.

Summary

Motivation is of two types: intrinsic and extrinsic. Intrinsic motivation involves someone being interested in what he/she performs and in the practice process itself. Extrinsic motivation is related to individuals who engage in practice because it is a means to an end, relatively separated from the content and subject of practice.

Aim of article – to compare practice and motivation for physical activity among Finnish, Portuguese, Lithuanian and Belgian students.

The comparative analysis was performed while participating and doing a research in a EU project „Villages on the Move Network“ (2018 – 2651 / 001 – 001). Five institutions from four European countries were involved in the project: South-Eastern Finland University of Applied Sciences (Xamk) and Southern Savo Sports Federation (ESLi) from Finland, University College Limburg – Leuven from Belgium, Kaunas University of Applied Sciences/Kauno kolegija from Lithuania and School of Technology and Management and School of Education and Social Sciences – Polytechnic of Leiria from Portugal.

Methods of the research: for the study a structured questionnaire was composed and circulated by using online survey. 843 students from four EU countries (Finland, Portugal, Lithuania and Belgium) participated in the study.

Results. Most students walk 5.001 to 10.000 steps a day. Finnish and Belgian students take the most steps per day, Portuguese and Lithuanian students take the

least steps per day. The most popular form of physical activity among students are walking, cycling or running. Finnish students, more than students from other countries, practice the following forms of physical activity: bicycle, gym, gymnastics, yoga / Pilates, Nordic walking, ultimate sport. Dancing is more popular among Lithuanian students, swimming – among Belgian and tennis – among Portuguese students. Attitudes towards physical activity motivation were found to be most expressed by Portuguese students. It was found that the greater the motivation for physical activity, the more physically active students are in choosing different forms of physical activity.

Introduction

Growing body of research implicates an interest in the importance of physical activity (PA) and its impact on biomedical and psychological health benefits [3,7]. Researchers from different institutions have come to the consensus that physical inactivity is one of the leading risk factors for global mortality and estimated to cause 6 % of deaths worldwide [5,19]. Regular exercise is described as medicine for a great number of chronic diseases, including – metabolic diseases, obesity or type 2 diabetes, psychiatric diseases (depression, anxiety, stress or schizophrenia), hypertension, osteoarthritis or chronic obstructive pulmonary disease and cancer [14].

Given the value of regular exercise to preventing or combating disease onset and progression, it seems contradictory that epidemiological health reports often reveal inadequate involvement in health-enhancing PA [6], particularly during the transition into adulthood so basically students' population [10,11]. For this reason, a focused effort has been made to understand why some people participate in PA such as exercise and sport with enthusiasm, while others prefer to

maintain a more sedentary lifestyle [8]. In the literature, great variety of aspects has been reported to be influencing factors of higher education students' PA behavior [10,16]. These might be demographics (e.g. gender, age), social factors (support from relatives and friends), environmental factors (e.g. access to facilities, living environment) and psychological factors (e.g. motivation, self-esteem, perceived satisfaction).

While the determinants of participating in PA are very complex, a promising approach is to concentrate a main factor that influences individuals' behavior. Motivation is a theoretical concept used to describe the initiation, direction, intensity, persistency and quality of human behavior across circumstances and environments [12]. It is used to explain the devotion and effort individuals dedicate to particular activities [1]. The two main types of motivation are intrinsic and extrinsic [4]. Intrinsic motivation involves someone being interested in what he/she performs and in the practice process itself. Extrinsic motivation is related to individuals who engage in practice because it is a means to an end, relatively separated from the content and subject of practice [9].

How are individuals motivated to exercise or be physically active? From theoretical point of view, intrinsic motivation to exercise involves the desire to perform a PA for the pleasure one experiences while exercising (i.e. the usefulness to an individual is the exercising in and of itself). Intrinsic motivation towards achievement is a second form, involving the craving to engage in an exercise for the pleasure and fulfilment experienced when accomplishing a hard effort. Lastly, intrinsic motivation to experience stimulus is effective when an individual engages in PA to be stimulated by a variety of forms such as sensory choice, aesthetic choice or emotional sensations [13,17].

Alternatively, extrinsic motivation refers to engaging in an activity for reasons such as external impacts or rewards. Individuals then experience little autonomy or challenge. For example, a student who participate in PA because of the pressures from the teacher or parents is considered extrinsically motivated. Researchers have identified that extrinsic intentions are critical during the initial steps of PA implementation, whereas intrinsic intentions are key for the maintenance of PA programs [13,18].

After conducting a study about participation in PA and motivation in different age adult population from five European countries (Lithuania, Latvia, Estonia, Denmark, and Finland) investigators have found that the most common internal motives for being physically active among respondents were health related outcomes and the feeling of enjoyment [15]. It is also worth mentioning that being a good example for their family, proving that they were physically capable

and had good physical appearance were the most popular answers considered to be an external motivational cause in concern about PA. Contradictory to what could be expected, least common extrinsic motive in regards PA was media. No differences between males and females were found regarding motivation to participate in PA [15].

Research on participation motivation proposes that there are systematic differences between motivations related to age. It was found that different motives for participation in PA were important for young adults and middle-aged adults and these findings revealed that older participants took part in PA because of more external reasons compared to younger participants [13].

It is reasonable to expect that older adults would show more concern for health issues in making their participation in PA choices since old age increases the deterioration of physical health. However, the motivation to exercise in younger adults, especially in student population, still remains unclear since they are not so much aware of their health. To our knowledge, there are no studies that examined motivation for participation in PA and whether the PA recommendations and guidelines are met among higher education students in different countries in Europe. We are also interested in investigating the intracultural aspects of (un)willingness of young people to participate in PA.

Aim of article – to compare practice and motivation for PA among Finnish, Portuguese, Lithuanian and Belgian students.

Material and methods

Article was written while participating and doing a research in a project "Villages on the Move Network" (2018 – 2651 / 001 – 001). Five institutions from four European countries were involved in the project: South-Eastern Finland University of Applied Sciences (Xamk) and Southern Savo Sports Federation (ESLi) from Finland, University College Limburg – Leuven from Belgium, Kaunas University of Applied Sciences/Kauno kolegija from Lithuania and School of Technology and Management and School of Education and Social Sciences - Polytechnic of Leiria from Portugal.

Methods of the research: for the study a structured questionnaire was composed and circulated by using online survey <https://apklausa.lt>.

The questionnaire consisted of questions aimed to assess quantitative and qualitative indicators of students' PA and attitudes towards PA: a) the number of steps students normally walk per day; b) hours of students' moderate physical activities during seven days; c) hours of students' vigorous physical activities during seven days; d) types of students' PA during 6 month; e) indications depended to internal and

external motivation to be physically active.

Data were processed using the SPSS software (Statistical Package for Social Sciences, version 21.0). Methods used for statistical analysis: descriptive statistics, Cronbach’s Alpha, T-test, Anova test, Chi-Square Test, correlation.

Participants. 843 students from four EU countries (Finland, Portugal, Lithuania and Belgium) participated in the study. Research was conducted from June, 2019 to October, 2019.

The average age of the students in the study was 24.5 years, the youngest was 17 years old and the oldest was of 56 years old (Table 1). The majority of students were under 30 (even 80.3 %).

The proportion of students per countries in the study was not even. Finnish students were particularly active in the

Table 1. Socio-demographic characteristics of respondents (n = 843)

Socio-demographic data	Number	%
Age		
Until 30 year	677	80.3
31–40 year	97	11.5
41–50 year	56	6.6
51 year	13	1.5
Country		
Finland	382	45.3
Portugal	185	21.9
Lithuania	174	20.6
Belgium	102	12.1
Gender		
Female	573	68.0
Male	270	32.0

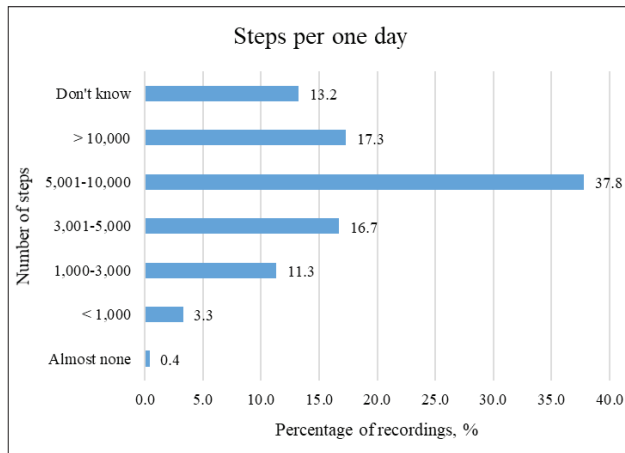


Fig. 1. Number of steps students usually walk per day (n = 843)

study, accounting for 45.3 % of all participants. 68.0 % of study participants were women and 32.0 % - men.

Students represented various fields of study such as health sciences (28.9 %), sport management (26.6 %), human sciences (16.4 %), teacher training (13.9 %), engineering (13.0 %) and languages / art (1.2 %).

The study participants represented the institutions involved in "Villages on Move Network" project.

Results

The study showed that more than 1 / 3 of students (37.8 %) walk between 5.001 and 10.000 steps a day. 17.3 % of students walk more than 10,000 steps a day. However, 13.2 % of students could not say how many steps they take per day because they did not know (Fig. 1).

Comparing by age group it was found that students in the 41 – 50 age group had the highest number of steps per day, while students under the age of 30 had the lowest number of steps (p = 0.003). No statistically significant differences

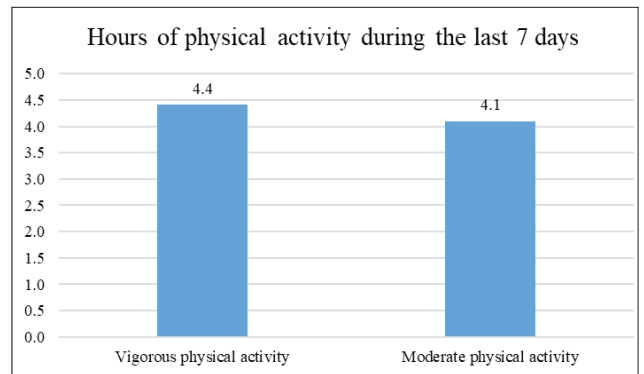


Fig. 2. Duration of vigorous and moderate physical activity among students during the last 7 days (n = 843)

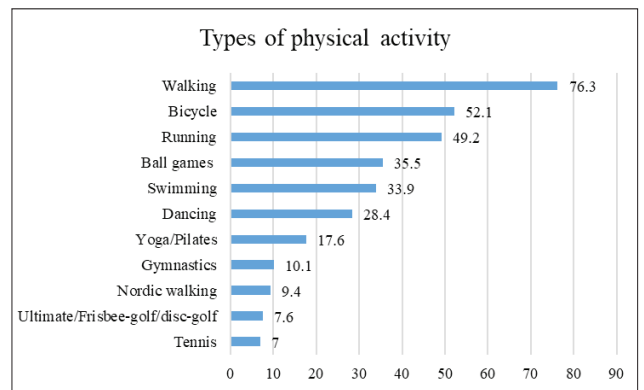


Fig. 3. Type of physical activities that students participated in 6 month period (n = 843)

were found suggesting that age is significant for vigorous or moderate PA ($p \geq 0.05$).

The multiple group comparison Test (Anova) found statistically significant differences between students in different countries and walking steps per day ($p \leq 0.05$). Finnish and Belgian students take the most steps per day, Portuguese and Lithuanian students take the least steps ($p = 0.000$). Comparisons by gender show that men walk more steps than women (Student's test, $p = 0.001$), and also men spend

more hours per week in vigorous ($p = 0.000$) and moderate ($p = 0.000$) PA.

No statistically significant differences were obtained suggesting that students in different study programs would take different number of steps per day ($p \geq 0.05$).

Students were asked to indicate how many hours they did vigorous (like heavy lifting, aerobics or fast bicycling) and moderate (like carrying light loads, cycling at a regular pace or tennis, does not include walking) PA during the last

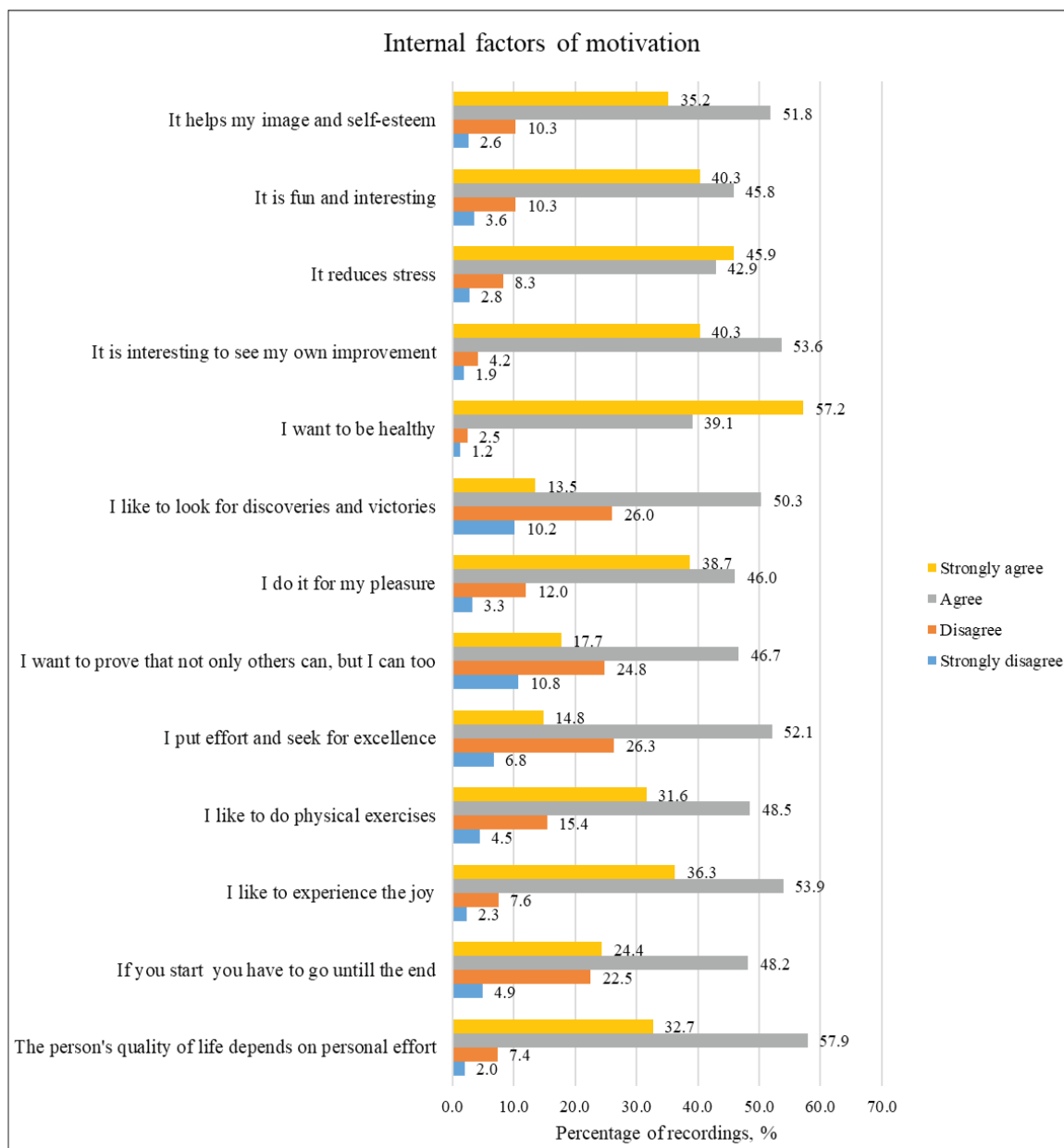


Fig. 4. Internal factors of students' motivation for physical activity (n = 843)

7 days. The average of vigorous physical activities amounts to 4.4 hours per week (min 0, max 48 hours), moderate – 4.1 hours per week (min 0, max 76 hours).

Statistically significant differences were found between the type of PA and students living in different countries (Anova test, $p \leq 0.05$).

A study on students PA from 4 countries showed that the most popular form of PA among students is walking (76.3 %). One in two students reported cycling (52.1 %) or running (49.2 %) as a form of PA in the last semester. Ball games, as volleyball, soccer, basketball, Frisbee-golf / disc-golf, were practiced by over 1 / 3 students (35.5 %). Slightly fewer students practice swimming (33.9 %) and dancing (28.4 %). Other less popular forms of PA are yoga / Pilates (17.6 %), gymnastics (10.1 %), and Nordic walking (9.4 %).

Multiple group comparison Test (Anova) found statistically significant differences suggesting that ball games (volleyball, soccer, basketball, Frisbee-golf) and running are more popular among younger students – those under 40 ($p = 0.000$). Cycling is more popular among students over 51 years old ($p = 0.015$). The largest number of students attending dance is in the age group up to 30, and dancing is not popular for students over 51 years old ($p = 0.035$). Yoga / Pilates is most popular in the 30 – 40 age group ($p = 0.018$). Nordic walking is mainly practiced by students over the age of 41 ($p = 0.000$). No statistically significant differences were found suggesting that swimming, tennis, ultimate sport or walking are more popular in any age group ($p \geq 0.05$).

Comparison by country revealed some differences between PA forms and countries (Anova test, $p \leq 0.05$). Finnish students, more than students from other countries, practice the following forms of PA: bicycle ($p = 0.000$), gym ($p = 0.001$), gymnastics ($p = 0.000$), yoga / Pilates ($p = 0.000$), Nordic walking ($p = 0.000$), ultimate sport ($p = 0.000$). Dancing ($p = 0.033$) is the most popular among Lithuanian students, swimming ($p = 0.000$) – among Belgian and tennis ($p = 0.026$) – among Portuguese students.

Two-group comparison test (Student's t-test) revealed relationships between PA forms and student gender ($p \leq 0.05$). Ball games ($p = 0.000$), tennis ($p = 0.018$), ultimate sport ($p = 0.000$) are more popular among men. Bicycles ($p = 0.044$), dancing ($p = 0.000$), yoga / Pilates ($p = 0.000$), Nordic walking ($p = 0.022$) and walking ($p = 0.000$) are more popular among women.

Multiple group comparison test Anova allowed to identify statistically significant differences

between PA forms and study programs. Dancing is more popular among students studying languages, health and human sciences ($p = 0.034$).

Ball games are more likely to be practiced by students attending teacher training and sports management ($p = 0.034$), and gymnastics are preferred by students studying in teacher training program ($p = 0.038$). Among students studying languages, yoga / Pilates and Nordic walking are more popular ($p = 0.010$). Swimming is more popular among future educators ($p = 0.000$). Tennis and ultimate sport are more popular among students studying sport management ($p = 0.000$).

Motivation for PA is thought to be a combination of the drive within us to achieve our aims. With this in mind, motivation has the following two forms – intrinsic (internal) motivation and extrinsic (external) motivation. We asked students to indicate which factors are most important to them for engaging in PA (Fig. 4 and Fig. 5). Statistical significance of Cronbach's Alpha was high and reached 0.890.

The students' intrinsic motivation (mean = 3.1) factors for PA are more important to them than external ones (mean = 2.6) (the difference is statistically significant, $\chi^2 = 0,000$).

Students indicated that they strongly agree and agree with the following PA motivational statements: „I want to be healthy“ (96.3 %), „It is interesting to see my own improvement“ (93.9 %), „It reduces stress“ (88.2 %) „It helps my image and self-esteem“ (87.0 %), „It is fun and interesting“ (86.1 %), „I do it for my pleasure“ (84.7 %).

Analysis of students' external factors of motivation for PA revealed that they would like to pass a good example to their family (73.7 %) or friends (62.2 %). It is also most important for them to notice them physically fit (65.3 %).

No statistically significant differences were found sug-

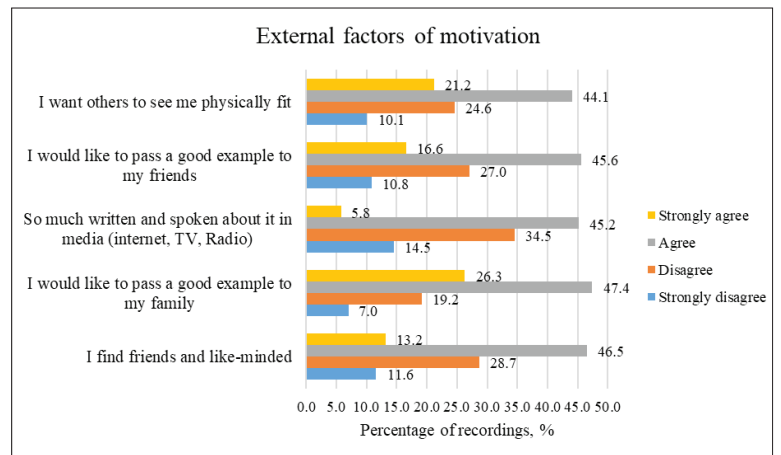


Fig. 5. External factors of students' motivation for physical activity (n = 843)

gesting that students' attitudes toward motivational factors differ by gender ($p \geq 0.05$).

Motivation factors are more important for Portuguese students ($p = 0.001$). Analysis by study programs shows that students studying sports and wellbeing, as well as future educators, express stronger approval of external motivation factors for PA than students studying engineering and human sciences ($p = 0.042$).

No statistically significant differences were found suggesting that students' age determine their attitudes toward PA motivation ($p \geq 0.05$).

It was found that the greater the motivation for PA, the more physically active students are in choosing different forms of PA (Pearson Correlation, $r = 0.202$, $p = 0.000$). This finding is statistically significant.

Conclusions

1. Most students walk 5.001 to 10.000 steps a day. Students, aged between 41 – 50 years, take the most steps a day, and students under the age of 30 take the least steps a day. Finnish and Belgian students take the most steps per day, Portuguese and Lithuanian students take the least steps per day. Gender comparison shows that men take more steps than women.

2. The most popular forms of PA among students are walking, cycling or running. Ball games (volleyball, soccer, basketball, Frisbee-golf) and running are more popular among younger students – those under the age of 40.

3. Biking is more popular among students over the age of 51. The majority of students attending dance are under the age of 30. Dancing is least popular for students over 51 years. Yoga / Pilates are the most popular in the 30 – 40 years age group. Nordic walking is mainly practiced by students over the age of 41. Finnish students, more than students from other countries, practice the following forms of PA: bicycle, gym, gymnastics, yoga / Pilates, Nordic walking, ultimate sport. Dancing is more popular among Lithuanian students, swimming – among Belgian, and tennis – among Portuguese students. Ball games, tennis, ultimate sport are more popular among men. Bicycle, dancing, yoga / Pilates, Nordic walking and walking are more popular among women. Dancing is more popular among students studying languages, health and human sciences. Ball games are more likely to be practiced by teacher training and sports management students, gymnastics – students from teacher training study programs. Swimming is more popular among future educators. Tennis and ultimate sport are more popular among students who study sport management.

4. Students' attitude toward intrinsic motivation for physical activity is stronger than towards extrinsic motiva-

tion. The greater the motivation for PA, the more physically active students are.

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**STUDENTŲ MOTYVACIJA IR FIZINIO AKTYVUMO
 RAIŠKA: TARPTAUTINĖ LYGINAMOJI ANALIZĖ
 V. Piščalkienė, L. Žlibinaitė, L. Navickienė, J. Amoroso,
 P. Simões, E. Kahkonen, L. Pöyry, M. Mattila, P. Muraus,
 E. Cans, S. Delen**

Raktažodžiai: motyvacija, studentai, fizinė veikla, projektas „Villages on Move Network“.

Santrauka

Motyvaciją fizinei veiklai gali lemti vidiniai ir išoriniai motyvaciniai veiksniai. Vidiniai - tai tokie veiksniai, kurie formuojasi pačioje asmenybėje arba jos elgesyje. Išorinės motyvacijos pagrindą sudaro dalykai, lemiami aplinkos.

Straipsnio tikslas – palyginti Suomijos, Portugalijos, Lietuvos ir Belgijos studentų fizinio aktyvumo raišką ir motyvaciją šiai veiklai.

Tyrimas buvo vykdomas dalyvaujant ES remiamame projekte „Villages on the Move Network“ (2018 - 2651 / 001 – 001). Projekte dalyvavo penkios institucijos iš Europos šalių: South-Eastern Finland University of Applied Sciences (Xamk) and Southern Savo Sports Federation (ESLi) from Finland, University College Limburg – Leuven from Belgium, Kaunas University of Applied Sciences from Lithuania and Superior School of Technology and Management of Leiria - Polytechnic Institute of Leiria from Portugal.

Tyrimo metodai: pusiau struktūruota apklausa. Tyrime dalyvavę studentai atstovavo projekto „Villages on Move Network“ institucijoms.

Rezultatai. Daugiausia studentų per dieną nueina nuo 5001 iki 10000 žingsnių. Daugiausia žingsnių per dieną nueina Suomijos, Belgijos studentai, mažiausiai Portugalijos ir Lietuvos studentai. Populiariausia fizinio aktyvumo forma tarp studentų yra vaikščiojimas, važiavimas dviračiu ir bėgimas. Suomijos studentai, daugiau nei kitų šalių studentai, praktikuoja šias fizinio aktyvumo formas: važiavimą dviračiu, lankymąsi sporto klube, gimnastiką, jogą/pilates, šiaurietišką ėjimą su lazdomis. Tarp Lietuvos studentų labiau populiarūs šokiai, Belgijos – plaukimas, Portugalijos – tenisas.

Nustatyta, kad studentams svarbesni vidiniai motyvaciniai veiksniai fizinei veiklai nei išoriniai. Nustatyta, kad kuo didesnė motyvacija fizinei veiklai, tuo studentai fiziškai aktyvesni.

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