Croatian Journal of Education
Vol.16; No.3/2014, pages: 847-861
Preliminary communication
Paper submitted: 19th June 2013
Paper accepted: 5th December 2013

Differences in Habitual Physical Activity of Female Students from Different Faculties

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Abstract

The importance of regular physical activity (PA) in improving and maintaining health has been recognized. Future professions of the female students from the selected faculties are oriented toward preservation of health and passing of such habits to children and adults. The aim of this research was to determine the level of PA of female students from the Faculty of Kinesiology (FK), Faculty of Medicine (FM) and Faculty of Teacher Education (FTE), and the differences in PA between the groups. The sample consisted of 255 female students, 78 FK, 84 FTE and 93 FM students. Habitual PA was determined by the Baecke questionnaire. Central and dispersion parameters were calculated as well as the Kolmogorov-Smirnov test. Statistically significant differences in habitual PA between female students from FK, FM and FTE were established through the univariate analysis of variance (ANOVA). FK students conduct everyday physical activities while FTE and FM students tend to lead a more sedentary lifestyle. The study indicates the students' need for a more frequently organized PA that would influence their understanding of the importance of PA. It will affect the relation of future physicians, teachers and professors towards children and adults in the sense of more frequent recommendations and implementations of PA.

Key words*: Baecke questionnaire; health; students; studies.*

Introduction

In accordance with the civilization progress in the information age we live in, the need for a systematically organized physical activity increases as people are becoming more sedentary in their everyday life. The consequences of a sedentary lifestyle can be very harmful to human health in the form of the appearance of various diseases.

Conclusive scientific evidence suggests that many diseases or precursors of diseases are more common in people who are rarely or not at all engaged in physical activity than in regularly physically active individuals (Vuori, 2004). In recent decades, the number of diseases or conditions is continuously increasing being encouraged by physical inactivity, i.e. hypokinesia (Booth et al., 2002), such as diabetes, overweight and obesity, metabolic syndrome, hypertension, coronary heart disease, asthma, etc. Many scientific, health and medical organizations around the world have formally acknowledged the importance of regular physical activity as a means of improving and maintaining health (Blair et al., 1996).

This research examined one part of the student population. Students are the future carriers of any developed society and they should be given attention when it comes to the preservation of health and optimal lifestyle. Three groups of female students were selected, from the Faculty of Kinesiology, Faculty of Teacher Education and Faculty of Medicine, University of Zagreb, to determine their habitual physical activity. Apart from the research on students of both genders (Gošnik et al., 2002; Fučkar Reichel et al., 2008; Matković et al., 2010) there is research on habitual physical activity in young women within the overall Croatian population of all age groups (Mišigoj-Duraković et al., 2001; Heimer et al., 2004). The future professions of female students from selected faculties are closely related to human health. Faculties as responsible institutions are in charge, among other things, of improving the quality of life. The chosen faculties, within the University, have a special role as presenters of a healthy lifestyle, health prevention, an optimal lifestyle and passing of such habits to children and adults. Future professors of kinesiology are directed towards the promotion of a healthy lifestyle, prevention of disease and physical activity as a lifestyle. While studying (and usually before enrolment to the faculty) students are engaged in a systematic physical activity and therefore differ from the majority of University students. A decrease of physical abilities and an increasing number of obese school children is becoming more evident and is presenting a global problem (Hardman, 2008). This increases the importance of teachers and educators in the society, who must transfer onto the youngest the awareness of the need for physical activity as an integral part of the living culture. As children's leisure time is more sedentary, physical education classes in schools are the only contact that an increased number of pupils get with organized physical activities. Physicians have a huge potential for efficient promotion of physical activity because of their credibility, so they can participate in counseling and recommendations. Some authors indicate that personal habits of physicians (including their habits of conducting physical activity) are consistent and significant predictors of their counseling habits about the preventive physical exercise, as they can strongly motivate patients through their own example to accept healthy habits (Frank et al., 2000; Frank, Breyan, & Elon, 2000; Wells et al., 1984; Wells et al., 1986).

The aim of this research was to determine the level of habitual physical activity of female students from the Faculty of Kinesiology, Faculty of Medicine and Faculty

of Teacher Education, University of Zagreb, and the differences in physical activity between groups of female students.

Methods

The sample was extracted from the population of female students at the University of Zagreb as a convenient sample equalized by gender and years of age. Three faculties were selected with 255 female students in total. The first group consisted of 78 female students from the Faculty of Kinesiology (FK), the second group of 84 female students from the Faculty of Teacher Education (FTE) and the third group of 93 female students from the Faculty of Medicine (FM). During the research period all subjects were full-time students in the second academic year, from 19 to 23 years old (the average age of the total sample of subjects was 20.46±0.84 years, body height 167.27±5.67 cm, body mass 62.72±9.28 kg). Habitual physical activity of subjects was determined anonymously on the basis of the Baecke questionnaire (Baecke et al., 1982). Before completing the questionnaire, female students were informed about the aim of the research and the way of completing the questionnaire was explained to them. The study was conducted in agreement with all three faculties from the University of Zagreb.

From the obtained responses to this multiple-item questionnaire, indexes load were calculated for particular segments of the subjects' physical activity. The questionnaire consisted of 16 questions, and three indexes can be differentiated: work index, sport index and leisure time index. *Work index (WI)* - eight questions refer to the physical workload. As this research examines only students, the work index was adapted to the *faculty index (FI)*. *Sport index (SI)* - four items determine the physical load during sport activities. Sports are divided into three levels according to their intensity: low, medium and high (Durnin & Passmore, 1967, as cited in Baecke et al., 1982). *Leisure-time index (LTI)* - four items indicate the level of physical activity workload during leisure time, when leisure time spent in sport activities is excluded. The maximum value of each index is 5.0 and represents the highest physical load, while the minimum index value is 1.0 representing minimal physical load.

Statistical analyses were performed by STATISTICA for Windows, version 7.1. The basic statistics parameters were calculated: arithmetic mean, minimal and maximal value, standard deviation, coefficient of asymmetry and coefficient of curvature for each group of female students. Normal distribution of variables was tested by the Kolmogorov-Smirnov test. The univariate analysis of variance (ANOVA) was used to determine statistical significance of differences between groups of subjects.

Results

Presented and interpreted are the results of the descriptive statistical analysis, as well as the partial differences between groups using the univariate analysis of the variance. Shown are the basic statistical parameters and the distribution of variables of obtained indexes by the Baecke questionnaire on habitual physical activity: faculty

index (FI), sport index (SI) and leisure-time index (LTI) of female student groups from the Faculty of Kinesiology, Faculty of Teacher Education and the Faculty of Medicine (Table 1). Arithmetic means of indexes of partial groups are visible in Figure 1.

Table 1.

Central and dispersion parameters of the Baecke questionnaire of female students from the Faculty of Kinesiology, Faculty of Teacher Education and Faculty of Medicine

Indexes	F	N	AM	MIN	MAX	SD	SKEW	KURT
Faculty index (FI)	FK	78	3.59	2.75	4.50	0.31	-0.17	0.58
	FTE	84	2.62	1.63	3.50	0.30	-0.40	1.45
	FM	93	2.46	1.50	3.25	0.35	0.18	0.12
Sport index (SI)	FK	78	3.38	1.75	4.50	0.58	-0.19	-0.28
	FTE	84	2.46	1.50	4.50	0.68	0.82	0.10
	FM	93	2.31	1.25	4.25	0.60	0.70	0.19
Leisure-time index (LTI)	FK	78	3.37	2.00	4.75	0.56	0.02	-0.15
	FTE	84	3.26	1.75	4.75	0.62	0.11	-0.19
	FM	93	3.08	1.50	4.75	0.58	0.14	0.09

Legend: Faculty (F), number of entities (N), arithmetic mean (AM), minimal value (MIN) maximal value (MAX), standard deviation (SD), coefficient of asymmetry (SKEW), coefficient of curvature (KURT), Faculty of Kinesiology (FK), Faculty of Teacher Education (FTE), Faculty of Medicine (FM)

Average body height of female FK students was 168.47±5.69 cm, FTE students 166.06±5.27 cm and FM students 167.36±5.84 cm. Average body mass of female FK students was 62.80±7.32 kg, FTE students 63.93±11.48 kg and FM students 61.55±8.43 kg.

Basic descriptive statistical parameters (Table 1) indicate that female FK students (3.59±0.31) surpass the other two groups of subjects in WI, i.e. FI, while there is no noticeable difference in arithmetic means between the FTE (2.62±0,3) and the FM group (2.46±0.35), where FTE students consider themselves more active at the faculty. Similar results are in SI, where the FK group has the highest results (3.38±0.58), followed by FTE (2.46±0.68) and FM students (2.31±0.6). Central parameters of LTI refer to the smallest differences between the groups of subjects, in the following order: FK (3.37±0.56), FTE (3.26±0.62) and FM (3.08±0.58) female students. The distributions of results are not statistically significantly different from the normal distribution.

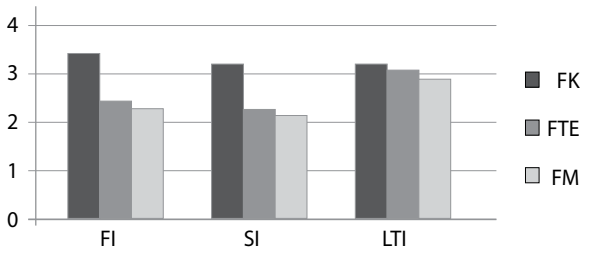

Figure 1. Arithmetic means of faculty index (FI), sport index (SI) and leisure-time index (LTI) of female students from the Faculty of Kinesiology (FK), Faculty of Teacher Education (FTE) and Faculty of Medicine (FM)

The univariate analysis of variance (ANOVA) determined partial differences between groups of subjects in indexes (Table 2). ANOVA showed statistically significant differences in all three indexes: faculty index (F=299.54; p=0.00), sport index (F=70.94; p=0.00) and leisure-time index (F=5.44; p=0.01), where the greatest difference was in FI, then in SI, and smallest difference was recorded in LTI.

Table 2.

Results of the univariate analysis of variance (ANOVA) of the Baecke questionnaire for female students from the Faculty of Kinesiology, Faculty of Teacher Education and Faculty of Medicine, level of significance p<0.05

Baecke questionnaire indexes	F	p	Effect size η^2 (Eta squared)	% of the change in DV that can be accounted to IV
Faculty index (FI)	299.54	0.00	0.704	70.4 (very large)
Sport index (SI)	70.94	0.00	0.360	36.0 (large to very large)
Leisure-time index (LTI)	5.44	0.01	0.041	4.1 (small to medium)

Legend: F-test, p-level of significance, DV-dependent variable, IV-independent variable

Discussion

The overview of results of all three indexes shows that the most active female students are from FK, which is understandable considering the faculty which they have chosen, and where they are involved in systematic physical activities on a daily basis, as well as due to their engagement in sport before faculty enrollment, and thereby the creation of the attitude toward physical activity as an optimal lifestyle in leisure time as well. Similarity in the obtained index values between FTE and FM students is noticed, while both groups are visibly less active than the FK group. FTE and FM students do not consider themselves overly physically loaded during classes (faculty index) where students of these faculties have lectures mostly in a sitting position. Similar results have been observed by Matković et al. (2010) among female and male students from the Faculty of Medicine. Female students from FTE are somewhat more active than those from FM, which could be explained by the larger number of teaching subjects in the field of kinesiology education at the Faculty of Teacher Education.

The amount of obligations that studying brings, time spent in the sedentary position in order to fulfill the same obligations and free time dedicated to studying certainly affect prioritization in the students' everyday life. In order to add regular physical activity to these priorities it is necessary that faculties, as educational institutions, promote great importance of physical activity in maintaining health, particularly when those are the faculties whose fundamental task is the wellbeing of children and adults.

When compared to the female students of the first three years of study at the Faculty of Medicine (Matković et al., 2010), only second year female FM students consider themselves to be more burdened at the faculty, while the sport index and the index of physical activity in leisure time are almost the same. The sport index showed very similar differences between groups as the work index. Thus, female FK students are most engaged in various sport-recreational activities. Some research of

student population from the University of Zagreb registered significant decrease of engagement in sport after enrolling college (Gošnik et al., 2002; Fučkar Reichel et al., 2008; Matković et al., 2010). Also, some authors indicate that male students are more active than female students (Buntić, 2006; Fučkar Reichel et al., 2008). These are additional reasons why faculties have to encourage regularity of systematic physical activity.

Research studies of habitual physical activity of the Croatian population indicate 81% of inactive women (Heimer et al., 2004), 85 % of inactive young women (Mišigoj-Duraković et al., 2001) as well as a less active group between 15 and 24 years of age (Jurakić, Pedišić, & Andrijašević, 2009), and under 30 years of age in women (Mišigoj-Duraković et al., 2001). Compared to the population of women in Croatia under 35 years of age (Mišigoj-Duraković et al., 2000) female FK students showed significantly higher values in all three indexes. FTE students are slightly more active than the general population where the smallest difference is determined in the work/faculty index. Index values of FM students are closest to the general population, where students show higher activity in leisure time, as well as in sport, but have a lower work index than average population in Croatia. As it is actually a faculty index, lower results can be linked with a demanding workload of the curriculum at this faculty which requires a large amount of time dedicated to studying, mostly in the sedentary position.

Restrictions of the demonstrated study detect two factors. The first one is the unequal choice of samples between faculties (response at FK 90 %, FTE 80 % and FM 70 %). The aforementioned could have resulted in a bias in the sense that only those female FM students who are more athletic than the faculty average took part in the questionnaire and have thereby decreased the difference between the faculties, or on the other hand, those female students who are less athletic could have taken part in the questionnaire, but this is less likely due to the type of the study, and have thereby increased the actual difference. However, when the spread degrees among faculties are compared it is noticeable that they are comparable, which might suggest against the bias with regards to the subjects' choice, as in that case that group would be more compact. The other study restriction is the fact that the subjective evaluation of physical activity is compared by means of a questionnaire, which is not a completely reliable measure and it is possible that the results are influenced by different perception of one's own physical activity. The effect size obtained from ANOVA demonstrates that this is also not the case although the aforementioned should also be verified by some objective methods of measurement. Subjective methods of self-evaluation of physical activities by means of various questionnaires might lead to underestimation or overestimation of the subjects' physical activity due to the perception of physical activities of the subjects themselves (Sorić, 2010). Some populations, such as sedentary or obese individuals, sometimes overestimate the level of their usual physical activity (Lichtman et al., 1992; Archer & Blair, 2011). Also, the precision of the questionnaire is

smaller when compared to the objective methods, especially with children and elderly people (Vanhees et al., 2005). However, when compared to three most frequently used questionnaires, the Baecke questionnaire demonstrates the biggest connection to the level of physical activity estimated with accelerometry (Philippaertes et al., 1999).

Conclusions

Descriptive parameters indicate differences in the level of habitual physical activity of female students, and the univariate analysis of variance established statistically significant differences between the groups of students in their habitual physical activity. Female FK students are at the highest level of physical activity. FTE students are somewhat more active than the FM group. In accordance with the results and the aim, it can be concluded that there are significant differences in habitual physical activities between female students from the Faculty of Kinesiology, Faculty of Teacher Education and Faculty of Medicine. FK students conduct everyday systematic physical activities while FTE and FM students practice a more sedentary lifestyle.

Selected studies are closely related to humans and their health so for future professionals from the selected studies it is important to know the benefits of physical activity on human health. The research indicates the need of student population for more organized physical exercise in order to more thoroughly impact on their lifestyle and the awareness about the importance of physical activity. Such an approach would affect the relation of future physicians, teachers and professors toward children and adults in the sense of more frequent recommendations, and implementations of physical activity. The obtained information emphasizes a high level need for conducting systematic physical exercise through education.

Because of the complexity of the study program at certain faculties, which results in spending most of the time in the sedentary position, it is important to educate young people in physical education classes at faculties about the need for physical exercise with the purpose of implementing a healthy lifestyle and the prevention of various health problems.

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Razlike u uobičajenoj tjelesnoj aktivnosti studentica različitih studija

Sažetak

Priznata je važnost redovite tjelesne aktivnosti u poboljšanju i održanju zdravlja. Buduća zanimanja studentica odabranih studija usmjerena su prema očuvanju zdravlja i prenošenju takvih navika na djecu i odrasle. Cilj ovog istraživanja bio je utvrditi razinu tjelesne aktivnosti studentica Kineziološkog (KIF), Medicinskog (MEF) i Učiteljskog fakulteta (UF) Sveučilišta u Zagrebu i razlike u tjelesnoj aktivnosti između tih skupina. Uzorak ispitanika činilo je 255 studentica, od toga 78 studentica KIF, 84 UF i 93 studentice MEF. Uobičajena tjelesna aktivnost određena je Baeckeovim upitnikom. Izračunati su centralni i disperzivni parametri i Kolmogorov-Smirnovljev test. Univarijatnom analizom varijance (ANOVA) utvrđene su statistički značajne razlike u uobičajenoj tjelesnoj aktivnosti između studentica KIF, UF i MEF. Studentice KIF provode svakodnevne tjelesne aktivnosti, a studentice UF i MEF naginju više sedentarnom načinu života. Istraživanje ukazuje na potrebu studenata za što opsežnijim organiziranim tjelesnim vježbanjem, kako bi se utjecalo na njihov pojam o važnosti tjelesne aktivnosti. Takav će pristup utjecati i na odnos budućih liječnika, učitelja i profesora prema djeci i odraslima u smislu češćih preporuka i provođenja tjelesne aktivnosti.

Ključne riječi: *Baeckeov upitnik; fakulteti; studenti; zdravlje.*

Uvod

U skladu sa sve većim napretkom civilizacije u informatičkom dobu u kojem živimo, raste i potreba za sustavno organiziranom tjelesnom aktivnošću, jer se ljudi sve manje kreću. Posljedice sedentarnog načina života mogu biti vrlo štetne za čovjekovo zdravlje u obliku pojave raznih bolesti. Čvrsti znanstveni dokazi pokazuju da su mnoge bolesti ili prekursori bolesti češći u osoba koje se rijetko ili uopće ne bave tjelesnom aktivnošću nego kod redovito fizički aktivnih osoba (Vuori, 2004). Posljednjih desetljeća kontinuirano raste broj bolesti ili stanja koje potiče tjelesna neaktivnost, odnosno hipokinezija (Booth i sur., 2002), kao što su dijabetes, prekomjerna težina i pretilost, metabolički sindrom, hipertenzija, koronarne bolesti, astma itd. Mnoge

znanstvene, zdravstvene i medicinske organizacije diljem svijeta formalno su priznale važnost redovite tjelesne aktivnosti kao sredstva za poboljšanje i održanje zdravlja (Blair i sur., 1996).

U ovom istraživanju proučavan je dio studentske populacije. Studenti su budući nositelji svakog razvijenog društva i mora im se posvetiti pažnja kada je riječ o očuvanju zdravlja i optimalnom načinu života. Izabrane su tri skupine studentica Kineziološkog, Učiteljskog i Medicinskog fakulteta Sveučilišta u Zagrebu te je ispitana njihova uobičajena tjelesna aktivnost. Osim na studentima oba spola (Gošnik i sur., 2002; Fučkar Reichel i sur., 2008; Matković i sur., 2010) susrećemo se istraživanja o uobičajenoj tjelesnoj aktivnosti i na mladim ženama u okviru ukupne hrvatske populacije svih dobnih skupina (Mišigoj-Duraković i sur., 2001; Heimer i sur., 2004). Buduća zanimanja studentica odabranih studija tijesno su vezana uz zdravlje čovjeka. Fakulteti kao odgovorne ustanove zaduženi su, između ostaloga, i za poboljšanje kvalitete života, a posebnu ulogu na Sveučilištu imaju izabrani fakulteti kao promicatelji zdravog načina života, preventive za zdravlje, optimalnog životnog stila i prenošenja takvih navika na djecu i odrasle. Budući profesori kineziologije usmjereni su prema promociji zdravog načina života, prevenciji od bolesti i kretanju kao životnom stilu. Još na studiju (najčešće i prije studiranja) provode sustavnu tjelesnu aktivnost čime se razlikuju od većine studenata Sveučilišta. Sve uočljivije opadanje tjelesnih sposobnosti i porast broja pretile školske djece globalni je problem (Hardman, 2008). Time se povećava značaj učitelja i odgajatelja u društvu, koji moraju prenijeti najmlađima svijest o potrebi tjelesne aktivnosti kao sastavnog dijela kulture življenja. Djeca svoje slobodno vrijeme sve više provode sjedeći, pa je nastava Tjelesne i zdravstvene kulture u školama jedini kontakt s organiziranim tjelesnim aktivnostima za sve veći broj učenika. Liječnici imaju golem potencijal za učinkovito promicanje tjelesne aktivnosti zbog svoje vjerodostojnosti, pa mogu sudjelovati u savjetovanju i preporukama. Neki autori navode da su osobne navike liječnika (uključujući i njihove navike provođenja tjelesne aktivnosti) konzistentni i značajni prediktori njihovih navika savjetovanja pacijenata o preventivnom vježbanju i da svojim primjerom snažno motiviraju pacijente na prihvaćanje zdravih navika (Frank i sur., 2000; Frank, Breyan i Elon, 2000; Wells i sur., 1984; Wells i sur., 1986).

Cilj ovog istraživanja bio je utvrditi razinu uobičajene tjelesne aktivnosti studentica Kineziološkog, Medicinskog i Učiteljskog fakulteta Sveučilišta u Zagrebu i razlike u tjelesnoj aktivnosti između tih skupina studentica.

Metode

Uzorak ispitanika izvučen je iz populacije studentica Sveučilišta u Zagrebu i predstavlja prigodni uzorak osoba izjednačenih po spolu i godinama života. Izabrana su tri fakulteta i sveukupno 255 studentica. Prvu skupinu čini 78 studentica Kineziološkog fakulteta (KIF), drugu skupinu 84 studentice Učiteljskog fakulteta (UF) i treću skupinu 93 studentice Medicinskog fakulteta (MEF). U vrijeme ispitivanja sve

ispitanice redovito su bile upisane na drugu godinu studija, u dobi od 19 do 23 godine (dob ukupnog uzorka ispitanica 20,46±0,84 godine; tjelesna visina 167,27±5,67 cm; tjelesna masa 62,72±9,28 kg). Uobičajena tjelesna aktivnost ispitanica određena je anonimno primjenom Baeckeova upitnika (Baecke i sur., 1982). Prije ispunjavanja upitnika studenticama je objašnjen cilj rada i način ispunjavanja upitnika. Istraživanje je provedeno u dogovoru sa sva tri fakulteta Sveučilišta u Zagrebu.

Iz dobivenih odgovora na višeitemski anketni upitnik izračunati su indeksi opterećenja za pojedine elemente tjelesne aktivnosti ispitanica. Upitnik je sastavljen od 16 pitanja. U njemu razlikujemo tri indeksa: indeks rada, indeks sporta i indeks slobodnog vremena. *Indeks rada (IF)* – osam pitanja odnose se na provjeru tjelesnog opterećenje na radu. Kako se u ovom istraživanju ispituju isključivo studentice, indeks rada je prilagođen u indeks fakulteta. *Indeks sporta (IS)* – četiri pitanja provjeravaju opterećenje tijekom sportskih aktivnosti. Sportovi su podijeljeni u tri razine prema intenzitetu: niski, srednji i visoki (Durnin i Passmore, 1967, prema Baecke i sur., 1982). *Indeks slobodnog vremena (ISV)* – četiri pitanja pokazuju razinu opterećenja tjelesne aktivnosti tijekom slobodnog vremena kada se isključi slobodno vrijeme provedeno u sportskim aktivnostima. Maksimalna vrijednost svakog pojedinog indeksa iznosi 5,0 i predstavlja najveće opterećenje, dok minimalna vrijednost indeksa iznosi 1,0 i predstavlja najmanje opterećenje.

Podaci su obrađeni u programskom paketu STATISTICA for Windows, ver. 7.1. Izračunati su centralni i disperzivni parametri: aritmetička sredina, minimalni i maksimalni rezultat, standardna devijacija, Skewness i Kurtosis posebno za svaku grupu studentica. Normalitet distribucije rezultata provjeren je i Kolmogorov-Smirnovljevim testom. Za utvrđivanje statističke značajnosti razlika između skupina ispitanica koristila se univarijatna analiza varijance (ANOVA).

Rezultati

Prikazani su i interpretirani rezultati deskriptivne statističke analize i parcijalne razlike između skupina primjenom univarijatne analize varijance. Prikazani su osnovni statistički parametri i distribucije varijabli indeksa dobivenih iz Baeckeova upitnika o uobičajenoj tjelesnoj aktivnosti: indeksa fakulteta (IF), indeksa sporta (IS) i indeksa slobodnog vremena (ISV) skupina studentica Kineziološkog, Učiteljskog i Medicinskog fakulteta (tablica 1). Rezultati aritmetičkih sredina indeksa pojedinih skupina vidljivi su u grafičkom prikazu (Slika 1).

Tablica 1.

Prosječna tjelesna visina studentica Kineziološkog fakulteta (KIF) iznosila je 168,47±5,69 cm, studentica Učiteljskog fakulteta (UF) 166,06±5,27 cm i studentica Medicinskog fakulteta (MEF) 167,36±5,84 cm. Prosječna tjelesna masa studentica KIF bila je 62,80±7,32 kg, studentica UF 63,93±11,48 kg, a studentica MEF 61,55±8,43 kg.

Osnovni deskriptivni statistički parametri (tablica 1) pokazuju da studentice KIF (3,59±0,31) nadmašuju ostale dvije skupine ispitanica u radnom indeksu, odnosno

indeksu fakulteta (IF), dok između skupina studentica UF (2,62±0,3) i MEF (2,46±0,35) nema toliko vidljive razlike u aritmetičkim sredinama, pri čemu studentice UF smatraju da su aktivnije na fakultetu. Slični su i rezultati indeksa sporta (IS), pa skupina studentica KIF ponovno ima najviše rezultate (3,38±0,58), slijede studentice UF (2,46±0,68), zatim MEF (2,31±0,6). Centralni parametri indeksa slobodnog vremena (ISV) najmanje razlikuju skupine ispitanica. Skupina studentica KIF najvišeg je rezultata (3,37±0,56), nešto manjeg ispitanice UF (3,26±0,62), a najnižeg studentice MEF (3,08±0,58). Distribucije rezultata statistički značajno ne odstupaju od normalne distribucije.

Slika 1.

Univarijatnom analizom varijance (ANOVA) utvrđene su parcijalne razlike između skupina ispitanica u indeksima (tablica 2). ANOVA je pokazala statistički značajne razlike u sva tri indeksa: indeksu fakulteta ($F = 299,54$; $p = 0,00$), indeksu sporta ($F = 70,94$; $p = 0,00$) i indeksu slobodnog vremena ($F = 5,44$; $p = 0,01$), pri čemu su najveće razlike kod indeksa fakulteta, zatim kod indeksa sporta, a najmanje su razlike utvrđene kod indeksa slobodnog vremena.

Tablica 2.

Rasprava

Pregledom rezultata sva tri indeksa vidljivo je da su studentice KIF najaktivnije, što je razumljivo s obzirom na studij za koji su se opredijelile, a na kojem su svakodnevno uključene u sustavne tjelesne aktivnosti, kao i s obzirom na njihovu angažiranost u sportu i prije upisa na fakultet, pa time i oblikovanje stava prema tjelesnoj aktivnosti kao optimalnom životnom stilu i u slobodnom vremenu. Zamijećena je sličnost u dobivenim vrijednostima indeksa između skupina studentica UF i MEF. Obje su skupine vidljivo manje aktivne od skupine studentica KIF. Studentice UF i MEF ne smatraju da su pretjerano tjelesno opterećene tijekom nastave (indeks fakulteta). Studentice tih fakulteta nastavu uglavnom prate u sjedećem položaju. Slične rezultate uočili su Matković i sur. (2010) kod studentica i studenata Medicinskog fakulteta. Studentice UF nešto su aktivnije od studentica MEF, što bi mogao objasniti veći broj predmeta iz područja kineziološke edukacije na Učiteljskom fakultetu.

Količina obaveza koje donosi studiranje, vrijeme provedeno sjedeći kako bi se te obaveze ispunile i slobodno vrijeme posvećeno učenju zacijelo utječu na određivanje prioriteta u studentskoj svakodnevnici. Kako bi se tim prioritetima pridružila i redovita tjelesna aktivnost, potrebno je da i fakulteti, kao odgojno-obrazovne ustanove, između ostalog, naglase i veliku važnost tjelesne aktivnosti kojoj je svrha očuvanje zdravlja, posebno kada govorimo o studijima kojima je osnovna zadaća dobrobit djece i odraslih.

U usporedbi sa studenticama prve tri godine Medicinskog fakulteta (Matković i sur., 2010) studentice isključivo druge godine smatraju da su više opterećene na fakultetu,

a indeks sporta i indeks tjelesne aktivnosti u slobodnom vremenu gotovo su jednaki. Indeks sporta pokazao je vrlo slične razlike među skupinama kao i radni indeks. Tako su studentice KIF najviše angažirane u različitim sportsko-rekreacijskim aktivnostima. Neka istraživanja studentske populacije zagrebačkog Sveučilišta pokazuju značajno smanjenje angažmana u sportu nakon upisa na fakultete (Gošnik i sur., 2002; Fučkar Reichel i sur., 2008; Matković i sur., 2010). Također, neki autori navode da su studenti aktivniji od studentica (Buntić, 2006; Fučkar Reichel i sur., 2008), što su dodatni razlozi da fakulteti aktivnije potiču redovitost sustavne tjelesne aktivnosti.

Istraživanja o uobičajenoj tjelesnoj aktivnosti populacije u Hrvatskoj pokazuju da je 81 % neaktivnih žena (Heimer i sur., 2004), 85 % neaktivnih mladih žena (Mišigoj-Duraković i sur., 2001), kao i da je najmanje aktivna skupina u dobi od 15 do 24 godine (Jurakić, Pedišić i Andrijašević, 2009) i u dobi mlađoj od 30 godina u žena (Mišigoj-Duraković i sur., 2001). U usporedbi s populacijom žena u Hrvatskoj u dobi mlađoj od 35 godina (Mišigoj-Duraković i sur., 2000) studentice KIF pokazuju značajno više vrijednosti u sva tri indeksa. Studentice UF nešto su aktivnije od opće populacije s tim da je najmanja razlika uočena u radnom indeksu, odnosno u opterećenju na fakultetu. U vrijednostima indeksa tjelesne aktivnosti studentice MEF najsličnije su općoj populaciji, ali studentice ipak pokazuju veću aktivnost u slobodnom vremenu, kao i u sportu, ali imaju niži radni indeks od prosječne populacije u Hrvatskoj. Kako je zapravo riječ o indeksu fakulteta, niže rezultate moguće je povezati sa zahtjevnim opterećenjem nastavnog programa tog fakulteta koji zahtijeva veliku količinu vremena posvećenu učenju, najčešće u sedentarnom položaju.

Ograničenja prikazane studije pronalaze se u dva čimbenika. Prvi je neujednačen odabir uzorka među fakultetima (odaziv na KIF 90 %, UF 80 % i na MEF 60 %). Navedeno je moglo dovesti do pristranosti u smislu da su se na MEF na ispitivanje odazvale studentice koje se više bave sportom od prosjeka fakulteta i time umanjiti razliku među fakultetima ili su se mogle javiti one studentice koje se manje bave sportom, što je manje očekivano s obzirom na tip studija. No kada se usporede mjere raspršenja među fakultetima, vidi se da su usporedive, što vjerojatno govori protiv pristranosti pri izboru ispitanica, jer bi u tom slučaju ta skupina bila kompaktnija. Drugo je ograničenje studije što se uspoređuje subjektivna procjena tjelesne aktivnosti korištenjem upitnika, koja nije u potpunosti pouzdana mjera pa je moguće da rezultati budu uvjetovani i različitim doživljajem tjelesne aktivnosti. Veličine učinka dobivene na temelju ANOVA-e pokazuju da to također vjerojatno nije slučaj, iako bi navedeno trebalo provjeriti i nekim objektivnim metodama mjerenja. Subjektivne metode samoprocjene tjelesne aktivnosti putem različitih upitnika mogu dovesti do podcjenjivanja ili precjenjivanja tjelesne aktivnosti ispitanika, zbog percepcije tjelesne aktivnosti samog ispitanika (Sorić, 2010). Neke populacije, kao npr. sedentarne ili pretile osobe, nekad precjenjuju svoju razinu uobičajene tjelesne aktivnosti (Lichtman i sur., 1992; Archer i Blair, 2011). Također, preciznost upitnika manja je u odnosu na objektivne metode, osobito u djece i starijih osoba (Vanhees i sur., 2005). Ipak, pri

usporedbi valjanosti tri učestalo upotrebljavana upitnika, Baeckeov upitnik pokazuje najveću povezanost s razinom tjelesne aktivnosti procijenjene akcelerometrijom (Philippaertes i sur., 1999).

Zaključci

Deskriptivni parametri pokazuju razlike u razini uobičajene tjelesne aktivnosti studentica, a univarijatnom analizom varijance utvrđene su statistički značajne razlike između skupina studentica u njihovoj uobičajenoj tjelesnoj aktivnosti. Studentice KIF na najvišoj su razini tjelesne aktivnosti. Studentice UF nešto su aktivnije od studentica MEF. U skladu s rezultatima i ciljem može se zaključiti da postoje statistički značajne razlike u uobičajenoj tjelesnoj aktivnosti između studentica Kineziološkog fakulteta, Učiteljskog fakulteta i Medicinskog fakulteta. Studentice KIF provode svakodnevne sustavne tjelesne aktivnosti, a studentice UF i MEF prakticiraju više sedentarni način života.

Izabrani studiji tijesno su vezani uz čovjeka i njegovo zdravlje, pa je za buduće stručnjake s odabranih studija važno poznavati pozitivne učinke tjelesne aktivnosti na zdravlje čovjeka. Istraživanje ukazuje na potrebu studentske populacije za što više organiziranog tjelesnog vježbanja, kako bi se što temeljitije utjecalo na njezin životni stil i svijest o važnosti tjelesne aktivnosti. Takav pristup utjecao bi i na odnos budućih liječnika, učitelja i profesora prema djeci i odraslima u smislu češćih preporuka i provođenja tjelesnih aktivnosti. Dobivene informacije upozoravaju na visoku razinu potrebe provođenja sustavnog tjelesnog vježbanja za vrijeme školovanja.

Zbog težine studijskog programa određenih fakulteta, koji rezultira sedentarnim provođenjem većine vremena, važno je u okviru nastave tjelesne i zdravstvene kulture na fakultetima educirati mlade ljude o potrebi tjelesnog vježbanja, s ciljem provođenja zdravog načina života i prevencije raznih zdravstvenih tegoba.