EVALUATION OF HEALTHY LIFESTYLE HABITS AND WELLNESS OF UNIVERSITY STUDENTS IN A CROSS-SECTION OF FOUR ACADEMIC YEARS

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Abstract. *Statistics on healthy lifestyle habits of Latvian population indicate that the number of adults who engage in sufficient physical activity is decreasing, and also for university students the succession of minimum physical activity is not fully ensured. Latvian National Development and Sports Policy Guidelines (Latvijas Vēstnesis, 2022), as well as other binding health policy documents contain references towards the need to support the healthy lifestyle and wellness of university students, especially highlighting the insufficient level of physical activity and emotional wellness among Latvian population, including students. The problem issue exists in the long-term spectrum, and for various reasons it is only partially possible to implement in universities the measures stated in policy documents. The aim of the study: to analyse students' healthy lifestyle habits and wellness dynamics over four years of studies, assessing the dynamics of healthy lifestyle habits and wellness level depending on the year of study, students' age and the study programme. In each academic year, the first- and second-year students were involved in the survey, a total of N=455 respondents. Research methodology: a tailored survey (Robbins, et.al., 2011), students' self-assessment of healthy lifestyle habits and levels of physical, emotional, mental, intellectual and job wellness, 86 questions in total. The results of the study indicate a decreasing tendency for the indicators of physical activity and emotional wellness, and statistically significant differences in the indicators of mental and emotional wellness can be observed depending on the age of students. No statistically significant differences were found depending on the study programme.*
Keywords: *healthy lifestyle, physical activity, university students, wellness*

Introduction

The Latvian National Development Plan 2021-2027 (hereinafter, Latvian NDP2021-2027), analysing the implementation of the National Development Plan 2013-2017, indicates that "...the lack of comprehensive, effective disease prevention is considered to be one of the most important reasons why the health goals, stated in Latvia's NDP2027, are not getting achieved. Experts point out that effective disease prevention and health promotion is not limited to the development of public health campaigns, but expects the implementation of evidence-based measures in order to reduce the risk factors affecting health by reducing alcohol and tobacco consumption in society, as well as supporting physical activity and healthy eating habits as a priority in those groups of population that are most exposed to the risks of a sedentary lifestyle and unhealthy diet" (Saeima, 2020). This document mentions a number of important statistics with regards to healthy lifestyle habits of the Latvian population: 1) the number of adults with sufficient physical activity (at least 30 minutes of physical activity every day) is decreasing. For example, in 2018, in Latvia, only 9.5% of adults had sufficient physical activity, while in 2010, the percentage of physically active adults was 19,7%; 2) the succession of minimum physical activities is not fully ensured for university students (Saeima, 2020).

Students form a significant part of Latvian population. In the Report on Latvian higher education in 2020 (IZM, 2021) it is stated that in the academic year 2020/21, a total of 76,000 students were studying in higher education institutions and colleges in Latvia, 55% of them studied in bachelor's study programmes. Overall, 58% of students were under 30 years of age, and the proportion of students gradually decreases with the increase of age.

Since 2003, the Latvian Sports Policy Guidelines (Latvijas Vēstnesis, 2004) emphasize support for health promoting activities for higher education students, respectively, the 1st and 2nd year students should be provided with regular health promoting physical activities, but it has not been implemented for last 20 years. Latvian Sports Policy Guidelines 2020-2027 (Latvijas Vēstnesis, 2022) has a paragraph 3.3 that requires "to financially support the implementation of sports classes for all full-time 1st and 2nd year students with or without awarding credit points or with an assessment (pass or fail)". The implementation of the provided guidelines would help a wide range of students to practice regular physical activities; also, this would be especially important for students of Teacher education study programmes, as the programmes and the Latvian Teacher Profession Standard (Valsts izglītības satura centrs, 2020), paragraph 5.4, states the teacher's health competencies – to take care of one's physical, intellectual and emotional health. However, as proven by 20 years of practice, the Latvian Sports Policy Guidelines are not being implemented in universities or higher education institutions. This is evidenced both by the findings of Latvian NDP2021-2027 and Sports Policy Guidelines (Saeima, 2020; Latvijas Vēstnesis, 2022) and by the recommendations on the promotion of physical activity for the Latvian population, elaborated for health and sports policy implementers by the Ministry of Health of the Republic of Latvia in cooperation with the World Health Organization European Regional Office (VM, 2019). An opinion statement is also issued on the responsibility of the Ministry of Health and Ministry of Education for the planning and coordination of policies for the promotion of physical activity, indicating that in this field there is a lack of leadership, cooperation and coordination between different sectors (education, health, sports, transport, regional development, municipalities, environment, etc.) and institutions at both national and local levels when implementing the basic principle of public health - "health in all policies". The continuous higher education reforms implemented in Latvia and the principles of state funding of higher education (IZM, 2022) also do not contribute to the implementation of neither Latvian NDP2021-2027 (Saeima, 2020), or the Latvian Sports Policy Guidelines (Latvijas Vēstnesis, 2022), which are aimed at changing the habits of society, striving for a higher quality of life and towards a more knowledgeable society, smarter entrepreneurship and greater sense of responsibility for the quality of Latvian environment, which develops a foundation that is formed by a high-quality, efficient and developed education system that provides lifelong education for supporting the growth of every citizen of Latvia and for the purposeful use of the knowledge acquired (Saeima, 2020).

As international research studies show, university students need support for adequate physical activities and maintaining a healthy lifestyle as it all has a direct impact on health condition (Henshaw& Archibald, 2013; Tafireyi & Grace, 2022), self-efficacy (Zhang & Zhang, 2022), and quality of life of students (Abrantes, et al., 2022). In addition, studies indicate that there is a positive correlation between students' physical fitness and academic achievements (Elmagd et al., 2015; Kljajević, et al., 2021; Redondo-Flórez, Ramos-Campo & Clemente-Suárez, 2022; Gejalakshmi & Swaminathan, 2022, Hammoudi, Halat, 2023).

The Latvian situation and research studies confirm the need to support students' possibilities to engage in daily physical activities directly in the university environment, as some of the reasons for insufficient physical activity for students are lack of time, lack of motivation, and lack of accessible infrastructure (Silva, et al., 2022), as short-term

interventions and campaigns do not have the desired long-term outcome (Wood, & Neal, 2016).

Our study was conducted from September, 2018, and the respondents involved in the study are mostly students from the programme 'Teacher' (preschool, primary, sports and dance, and music teacher specializations), while students from other programmes represent such specialties as social worker, management sciences – tourism, business management, etc. The research method used in this study is a customized survey method (Robbins, et.al., 2011), each year involving different respondents - mostly 1st and 2nd year students, so it is not possible to track the individual dynamics of student's growth, but the general tendency of students towards developing a healthy lifestyle and wellness during their studies at the university can be determined. The aim of this study is to analyse students' healthy lifestyle habits and wellness dynamics from academic year 2018/2019 to 2021/2022.

Methodology

Concepts used in this study: 1) Healthy lifestyle (hereinafter, HLs) is a lifestyle that ensures an excellent physical and mental condition. Excellent condition means an abundance of energy, self-confidence, good mood, an exercised body, luck and success. It can be obtained by maintaining a good mood, nurturing one's body, observing the daily routine, healthy eating, abandoning habits harmful to health and frequently performing physical exercises (Rubana, 1998, Lawrence, et al., 2020); 2) Habit is an automated human activity that is strengthened through systematic exercising as part of experience accumulation process and through unifying the knowledge acquisition and practice (Špona, 2006; Gardner & Lally, 2018);   3) Wellness is the ability of a person to implement one's best potential (Robbins, Powers, and Burgess, 2011), defining it as individual's integrated and dynamic level of functioning, oriented towards the responsibility of the individual to achieve his or her maximum potential, and includes not only preventive health behaviour, but also a change in thinking and attitudes.

Research tools: Customized survey (Robbins, et.al., 2011) on healthy lifestyle habits and wellness levels, 86 questions in total (Cronbach's Alpha 0.923). 27 questions describe students' healthy lifestyle habits, Physical wellness is characterized by 10 questions, Intellectual wellness – 10 questions; Emotional wellness – 9 questions; Social wellness – 10 questions; Mental wellness – 10 questions; Job wellness – 10 questions. The questionnaire uses a 4-point scale: 1) almost always = 4 points; 2) sometimes/occasionally = 2 points; 3) very rarely = 1 point.

The study was conducted in the period from academic year 2018/2019 to 2021/2022. Research participants were students of Liepaja University, aged 18-56, 445 participants in total, of which 398 are women and 47 men. Academic year 2018/2019 - 80 students; 2019/2020 – 89 students; 2020/2021– 81 students; 2021/2022 – 195 students (see Table 1).

Table 1 ***Distribution of study participants by age and academic year***

Age	Sample	2018/2019	2019/2020	2020/2021	2021/2022
Under 25	227	50	43	33	101
26-35 years	133	27	31	28	47
36 + years	85	3	15	20	47

Respondents of this study - students of the programme 'Teacher' (Preschool, Primary school and Sports and dance teacher) and other study programmes (social worker, management sciences – tourism, business management, etc.) of Liepaja University (see Table

2). All were introduced to the ethical and personal data protection conditions. The first- and second-year students were involved in the survey each year, which means a different student group each academic year.

Table 2 **Distribution of study participants by specialization and academic year**

Study programme	Sample	2018/2019	2019/2020	2020/2021	2021/2022
Preschool teacher	212	22	33	58	99
Primary school teacher	62	20	30	-	12
Sports and dance teacher	46	21	14	11	-
Other specialization	125	17	12	12	84

The SPSS tool has been used for statistical processing of data. The result of the Cronbach alpha (α= ,923) indicates good internal coherence, but the result of the Kolmogorov-Smirnov test (p<,05) indicates the need to use non-parametric tests in inferential statistics: Kruskal-Wallis test for detecting differences and Kolmogorov-Smirnov-Kendall correlation test for detecting interrelations. This study analysed students' healthy lifestyle habits and wellness in 2018/2019 - 2021/2022, in cross-section of four academic years, evaluating the healthy lifestyle and the wellness level dynamics depending on the year of studies, age of students and study programme.

Results

The evaluation of the criterion *HLs habits* shows statistically significant differences (p=.015) depending on the year in which the survey was conducted: self-assessment was lower in 2019 (Mean Rank 195.21), then an increase is observed in 2020 (Mean Rank 205.06) and 2021 (Mean Rank 252.81), but in 2022 – a decrease (Mean Rank 230.21) compared to 2021 (see Table 3). Assessing other criteria (age of students and study programme), no statistically significant differences were found assessing criterion *HLs habits* of students.

Table 3 **Healthy lifestyle and wellness Mean rankings depending on the year of studies**

Criterion	Mean				
		2019	2020	2021	2022
Healthy Lifestyle Habits	2.20	2.16	2.17	2.26	2.22
Physical wellness	2.24	2.17	2.23	2.30	2.25
Intellectual wellness	2.29	2.23	2.27	2.32	2.25
Emotional wellness	2.36	2.33	2.34	2.43	2.35
Social wellness	2.33	2.31	2.29	2.38	2.33
Mental wellness	2.29	2.19	2.27	2.38	2.30
Job wellness	2.42	2.39	2.40	2.51	2.39

When evaluating the average scores, it should be noted that the lowest average scores are in the criteria characterizing most significant *HLs habits* aspects – 'physical activity' (Mean=1.7) and 'nutritional habits' (Mean=2.2). Between the indicators characterizing 'physical activity habits', one of the lowest scores is in the criterion 'I do strength exercises to develop muscle strength and endurance' (see Table 4), which means strengthening the student's muscle corset, stabilizing posture and ensuring normal daily functioning.

Table 4 Students' Physical Activity Habits

Criterion *Healthy Lifestyle Habits* indicators/ **Physical activity habits**	Mean				
	Altogether	2019	2020	2021	2022
I engage in active physical activity	1.87	2.19	1.96	1.98	1.82
I do strength exercises to develop muscle strength and endurance	1.81	1.89	1/69	1.79	1.51
I do flexibility development exercises to develop muscle flexibility	1.63	1.63	1.63	1.73	1.58

In section 'dietary habits', one of the lowest scores is for characterizing the consumption of food in relation to the restriction of total fat, cholesterol, saturated fat and fatty acids, the restriction of consumption of whole grain and calcium-containing products as well as salt and sugar in the daily diet (see Table 5).

*Table 5 **Nutritional habits of students***

Criterion *Healthy Lifestyle Habits* indicators/ **Dietary habits**	Mean				
	Altogether	2019	2020	2021	2022
I maintain a healthy weight by avoiding overweight and underweight	2.44	2.33	2.47	2.42	2.47
Every day I eat a variety of foods, including enough fruit and/ or vegetables (at least 400g per day)	2.30	2.23	2.19	2.36	2.35
I limit the amount of total fat, cholesterol, saturated fat and fatty acids in my diet	1.94	1.91	1.83	2.04	1.97
I limit the amount of salt and sugar in my diet	2.17	2.09	2.15	2.28	2.17
I make a conscious effort to incorporate whole grain and dairy/ calcium products on a daily basis	2.06	2.13	1.92	2.16	2.06

In turn, higher indicators are observed in the following criteria characterizing *HLs habits*: 1) 'Alcohol and drug use habits" (Mean=2.7); 2) 'Safety compliance and disease prevention habits' (Mean=3.13); 'Socialization and stress management habits' (Mean=2.5).

In the *Students' Wellness* criteria, the lowest scores are in the section 'Physical wellness' (Mean=2.24), slightly higher result is in the criteria 'Intellectual wellness' and 'Spiritual wellness' (Mean=2.29), 'Social wellness' (Mean=2.33), but the highest scores are in the criteria characterising 'Emotional wellness' (Mean=2.36) and 'Job wellness' (Mean=2.42) (see Table 3).

Similar to *HLs* criteria, some significant individual wellness criteria have low scores, such as the Physical wellness indicator, but the lowest scores have 'I actively engage in physical activities (e.g. jogging, vigorous walking, swimming, cycling) for 20-60 minutes at least four times a week' (Mean=1.96), as well as the Emotional wellness indicator "I am able to cope with stress and tension" (Mean=2.2).

In some wellness indicators, statistically significant differences were found depending on the age of respondents: 1) for the entire sample of respondents in the assessment of the criterion *Mental* wellness (p=.010): as the age increases, the criterion score increases – the lowest is under 25 years of age (Mean Rank 206.14), followed by respondents aged 26-35 years (Mean Rank 233.13), the highest self-assessment is for respondents aged 36 and over (Mean Rank 252.18). This trend is also confirmed by Kendall's correlation results (r=.116, p=.002). If looking separately by each year, then the differences appear in year 2022 (p=.036): the tendency is the same - the lowest score is in the age under 25 years (Mean Rank 88.07), followed by respondents aged 26-35 (Mean Rank 106.48), the highest self-assessment is for respondents aged 36 and over (Mean Rank 110.86). Kendall correlation results (r=.144, p=.012). In other years, there were no statistically significant differences; 2) In the responses

gathered in 2020, statistically significant differences were found in the assessment of *Emotional Wellness* criterion (p= .026): the lowest self-assessment is for respondents aged 36 and more (Mean Rank 32.67), the highest – for respondents under 25 years of age (Mean Rank 52.00). Only in this year there is a correlation (r=.234, p = .007) between the age of the respondents and the score of the criterion Emotional Wellness. In other cases, this was not found.

Statistically significant differences were found depending on the study programme of respondents. For the whole sample of respondents: 1) criterion *Intellectual Wellness* (p= .003): the lowest self-assessment is for the students of Sports and dance teacher programme (Mean Rank 166.98), followed by Pre-school teacher programme students (Mean Rank 221.58), then students from other specializations (Mean Rank 228.46), but the highest self-assessment is for future Primary education teachers (Mean Rank 258.41). In turn, in 2019: 1) criterion *Intellectual wellness* (p=.000): the lowest self-assessment score is for Preschool teacher students (Mean Rank 25.77), followed by Sports and dance teacher students (Mean Rank 33.24) and students from other specializations (Mean Rank 51.97), but the highest self-assessment is for prospective Primary education teachers (Mean Rank 54.58). In 2021, significant differences were found only in the evaluations of the criterion *Intellectual Wellness* (p= .046): the lowest self-assessment is for the students in programs Sports and dance teacher (Mean Rank 25.32), followed by students of other specializations (Mean Rank 39.33), but the highest self-assessment for future Preschool teachers (Mean Rank 44.32). The group of prospective Primary education teachers was not surveyed this year.

In 2022, significant differences were found only in the evaluation of the criterion *Job Wellness* (p=.038): the lowest self-assessment is by students of other specializations (Mean Rank 87.12), followed by prospective primary education teachers (Mean Rank 90.92), but the highest self-assessment for future Preschool teachers (Mean Rank 108.09). The students of Sports and dance teacher programmes were not surveyed this year.

Discussion and conclusions

Analysing the obtained data, it can be concluded that overall, neither healthy lifestyle habits of students have significantly improved over four-year span nor a statistically significant decrease can be observed, however, if each healthy lifestyle criterion is analysed separately, for example, the criterion *Physical activity*, it shows that the average indicators have a tendency to decrease. Similar findings are reflected in the statistics of the Health Promotion and Disease Prevention Plan (Veselības veicināšanas un slimību profilakses plāns 2022, 15), which indicates that Latvian population as a whole has insufficient daily physical activity – only 9.5% of the adult population daily or 4-6 times a week perform 30 minutes of physical activity (up to mild shortness of breath or sweating). Almost half or 49.6% of the population engage in physical activity only a few times a year and 36.3% of the population spend their leisure time in a sedentary way. More than two-thirds of adults (64%) admit that they lack motivation and have no desire to engage in physical activity, which confirms the need to ensure the availability of physical activity in universities, as it is also stated in various Latvian policy documents (Latvijas Vēstnesis, 2004; Saeima, 2020; Veselības veicināšanas un slimību profilakses plāns, 2022).

There are statistically significant differences observed depending on age in the *Mental Wellness* criterion: as age increases, respondents note a higher level of mental wellness, while in the *Emotional Wellness* criteria there is a statistically significant difference only in year 2020: a lower level of wellness is indicated by older respondents, from 36 years and above, but for students under 25 years of age the self-assessment scores higher.

Depending on the study programme in which the students study, there are statistically significant differences only in the criterion of *Intellectual Wellness*, which, however, is a variable indicator depending on the study year, so there is no reason to argue that the students' intellectual wellness could be related to the study programme they have chosen.

It should be noted that none of the parameters shows significantly higher scores than the average, which indicates the need for supporting students both in terms of promoting a healthy lifestyle and also in all wellness criteria.

Similar problems can be observed in related international studies with regards to HLs habits of university students. For example, the study conducted by Assaf et al. (2019) indicates that the students do not follow a certain diet, do not consider their food choices healthy and would like to take more care about their health. This is mostly due to the fact that they don't exercise as much as they would like to, as during the study period students enter into employment relationships and there is no time for them to focus on their health.

An international group of researchers (Müller, El-Ansari & Ansari, 2022), in their study on HLs habits of university students, have found that students have insufficient physical activity and sleep, as well as unhealthy diet, concluding that universities need to plan and evaluate the appropriate motivational strategies for HLs, while other researchers (Tafireyi & Grace, 2022), seeing the rampant problem, call for the worldwide promotion of a unified concept of university health promotion and emphasize the need to spread it to all universities around the globe.

Our study has a limited number of respondents and was conducted within one university, but the observed rigid dynamics of a healthy lifestyle and wellness, and the declining dynamics in the particularly important components of HLs – physical activity and coping with the stress, indicate insufficient support for healthy lifestyle of students, which also influences students' academic achievements, so it is necessary not only to continue research in this field, but also to implement the activities foreseen in the policy documents of Latvia.

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