Evaluation of the Quality of Life of University Students in Prague After the Annual Covid–19 Restrictions

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ABSTRACT

Background: The COVID 19 disease brings about a variety of restrictions that affect the quality of life. For Czech students across all tiers of the educational system, the 2020/2021 academic year was very challenging as they basically spent all of it in a distance learning mode. In addition, the restrictions put in place by the Czech government did not allow for the value of health to be upheld in all of its components. Objective: The objective of this study was to look into the views on the quality of life in a group of 381 Prague university students who had gone through distance learning. As part of the study, we divided the set along faculty and year-of-study lines. Methods: As a research tool, we used the Czech version of the World Health Organisation's WHOQLBREF Quality of Life Questionnaire. Within the descriptive statistical analysis we worked with the basic quantities of central tendency and variability. For the purposes of inferential statistical analysis, we used Cronbach's alpha (to determine the set consistency), correlation to determine domain dependencies, and ANOVA to test statistical hypotheses. Results: The set was content with the overall quality of life, with Faculty of Physical Education and Sport students and second- and third-year students coming on top as the most satisfied once the set had been divided. The lowest values were reported in the physical health domain, which is inconsistent with the findings of other research conducted on this topic; on the contrary, the highest values were shown for the set in the environmental health domain; this is in line with foreign research. In our set, we found statistically significant variations in the metal health and social health and environmental domains once the set was divided along the faculty, and year-of-study lines, respectively. There are statistically significant differences between the individual sets. Conclusions: Based on a comparison with foreign research, we recommend a deeper investigation into this issue since the perception of the quality of life in secondary and tertiary students is a key factor in the development of society.

INTRODUCTION

Countries currently apply a variety of measures to prevent the spread of COVID 19. In the Czech Republic, the restrictions put in place were relatively tight and, more importantly, they were kept for a long time.

Zhang (2012) conducted a research on medical students in China. The Chinese medics' perception of the quality of life differed significantly in mental and social health. The lowest average score was found in third-year students in mental and social health. Clinical medicine students were found to have the most positive perceptions of the quality of life. The noted factors influencing perceptions of the quality of life included gender, interest in the field of study, hometown location and physical activity (Zhang, 2012).

Many authors have dealt with the impact of quality of life on mental health of individuals. Oztasan (2016) highlights the ties between a deteriorating mental health and low quality of life. Similar results were obtained by Walker (2016) and Moura (2016), who established a correlation between those variables (Moura, 2016; Oztasan, 2016; Walker, 2016;).

Pagin (2015) compared the quality of life as perceived by medical students and the general public. In his research, medical students showed worse mental well-being and social ties than members of the general public. The research demonstrated gender was a huge factor: female students rated the quality of their lives worse than their male counterparts, especially as regards the physical and mental component. This is supported by Walcott (2018), who points to the importance of physiological indices such as rest and sleep, which, according to his study, contribute to a higher quality of life (Pagin, 2015; Walcott, 2018).

The aim of the study is to assess the quality of life of students at a time of restrictions against COVID-19 disease. The World Health Organisation's WHOQL-BREF quality of life questionnaire was used as a research tool, a version of which has been translated into a number of languages and standardised in many countries (Serbia, Germany, China, the Netherlands, Turkey, Saudi Arabia, Argentina, Brazil, USA, Czech Republic, etc.). In the Czech Republic, several versions of the questionnaire have been created and standardised. In our research, we followed Rogalewicz's recommendation (2017) and used Dragomerická's translation of the questionnaire (Rogalewicz, 2017).

Papršteinová, a researcher who studies the lifestyle of university students in the Czech Republic, chose the EHIS (European Health Interview Survey) questionnaire for her research. Non-medical health care students show significantly higher levels of physical activity than their colleagues from technical schools. Also, the group comprised of non-medical health care students was more active in the fitness department and showed optimal BMI values. As already well known, physical activity leads to a loss of fat reserves without causing a loss of muscle mass. Physical activity has a positive effect on metabolism and may negate risk factors in the development of cardiovascular diseases. No statistically relevant differences were observed for risky behaviour such as smoking and alcohol and drug use. Statistically, stronger social ties were reliably demonstrated with respect to non-medical health care students compared to technical students (Fox, 2007; Papršteinová, 2018).

MATERIALS AND METHODS

Participants

The set consists of year one to five students from three schools of Charles University: Faculty of Science (FoS), Faculty of Education (FoE) and Faculty of Physical Education and Sport (FoPES) and one faculty of the University of Life Sciences (UoLS) (Faculty of Economics and Management). This composition ensures set diversity. We published the questionnaire on various websites and social networks, so every student could participate in the research. Using this method, after correction, we eventually arrived at the set of n = 381. Participation in the survey was voluntary; each participant was presented with the Helsinki Declaration and had the opportunity to refuse to participate. The interviewees were guaranteed anonymity.

Table 1 shows the size and age of the set divided according to each of the criteria. As can be seen, when the set is divided along the faculty affiliation line, the resultant sets are not exactly identical in terms of their size. The Faculty of Education is the most represented and the Faculty of Physical Education and Sport is the least represented. A more suitable approach seems to be the one where the students are divided along the year-of-study lines. Here, the differences in group sizes are no longer so marked.

Table 1. Size and age of specific sub-sets

	Size	Age	Average	Deviation	Modus	Median	Variation range
Whole set	381		22.1	2.25	21	22	19–27
Gender							
Male	57		22.6	2.17	22	22	19–26
Female	324		21.95	1.9	20	22	19–27
Faculties							
FPES	25		22.24	1.7	21	22	19–27
FE	174		22.5	2.04	24	23	19–27
FS	141		21.55	1.67	21	21	19–27
FEM	41		21.4	2.13	20	20	19–26
Year of study							
Year 1	101		20.5	1.7	20	20	19–27
Year 2	84		21.5	1.77	21	21	20–27
Year 3	89		22.2	1.35	22	22	21–27
Year 4	66		23.3	1.002	23	23	22–26
Year 5	41		24.5	1.08	25	24	23–27

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Research tool

An abbreviated version of the WHOQL-BREF quality of life questionnaire was chosen as a research tool. Several translations of the questionnaire WHOQL–BREF and WHOQL 100 have

been presented in the Czech Republic; on the recommendation of Rogalewicz 2017 we used the one prepared by Dragomerická. This translation corresponds more closely to the Czech language.

The guidelines for completing the questionnaire stated that students should assess the current situation influenced by restrictions against the spread of COVID- 19.

The first two questions determine overall satisfaction with the quality of life and health, the rest of the questionnaire is divided into four domains: physical health, mental health, social health and environmental health. The answers are on a scale of 1-5. In the scoring manual, the scales are transformed into a net score.

Statistical analysis

We used the following descriptive and inferential statistics methodology for the purposes of a statistical data analysis. The quantities of central tendency and degree of variability were used to describe the set. As regards the inferential statistics methodology, we used correlation to determine the dependence between specific domains in the whole set. Cronbach's alpha and ANOVA were used in assessing the internal consistency of the set and evaluating the hypotheses. Before running the variance analysis itself, we used graphical methods to determine whether or not this represented the normal data distribution.

RESULTS

Table 2 shows the average scores per specific items for the entire set and individual groups. In this table, we will focus mainly on Q1 and Q2. They are stand-alone items assessing the overall quality of life and satisfaction with health. The other items were combined into domains according to the manual used to evaluate the questionnaire. The whole set perceives the overall quality of their lives as very good and the same applies to overall health. If the division along the school affiliation lines is followed, the Faculty of Physical Education and Sport students showed the highest level of satisfaction with their lives and their health conditions. The regular physical activity they undergo as part of their study may be a factor in this. If the set is divided along the year-of-study lines, the fifth-year students report the highest quality-of-life satisfaction levels across schools, while the second and third-year students are the most satisfied with their health. The final year students' satisfaction with the quality of their lives may be owing to the individual students gradually emerging as full-fledged members of society.

Table 2. Average scores for individual WHOQL-BREF items

	Item	All	UoLS	FoPES	FoE	FoS	Year 1	Year 2	Year 3	Year 4	Year 5
Q1	Overall quality of life	3.9	3.8	4.1	3.9	3.8	3.9	4.0	3.8	3.8	4.2
Q2	Satisfaction with health	3.6	3.5	3.9	3.6	3.6	3.6	3.7	3.7	3.4	3.9
Q3	Pain and feelings of discomfort	4.1	3.8	4.5	4.1	4.1	4.2	4.2	4.1	4.0	4.3
Q4	Dependence on medical care	4.2	4.2	4.2	4.2	4.2	4.3	4.0	4.2	4.2	4.3
Q5	Joy of life	3.9	3.7	4.2	3.9	3.8	3.8	3.8	3.9	3.8	4.1
Q6	Meaning of life	3.8	3.4	4.4	4.0	3.6	3.7	3.8	3.7	3.9	4.2
Q7	Concentration	3.0	2.8	3.3	3.1	3.0	3.0	3.1	2.9	3.1	3.4
Q8	Personal safety	4.0	3.7	4.2	3.9	4.0	3.9	4.1	4.0	3.9	4.0
Q9	Environment	3.9	3.8	4.1	3.9	3.9	3.9	4.0	3.9	3.9	4.0
Q10	Vigour and fatigue	3.4	3.3	4.0	3.4	3.4	3.3	3.4	3.5	3.5	3.4
Q11	Acceptance of physical appearance	3.6	3.5	4.0	3.5	3.7	3.5	3.6	3.7	3.5	4.0
Q12	Financial situation	3.7	3.4	3.8	3.7	3.8	3.7	3.9	3.6	3.5	4.0
Q13	Access to information	4.3	4.0	4.4	4.4	4.4	4.2	4.5	4.3	4.3	4.5
Q14	Hobbies	3.3	3.2	3.3	3.3	3.3	3.2	3.4	3.2	3.0	3.5
Q15	Agility	4.2	4.1	4.4	4.2	4.1	4.2	4.2	4.2	3.9	4.4
Q16	Sleep	3.6	3.7	3.9	3.6	3.6	3.6	3.6	3.5	3.6	3.9
Q17	Everyday activities	4.0	3.4	3.8	3.4	3.3	3.4	3.4	3.4	3.3	3.5
Q18	Work performance	3.4	3.6	3.8	3.5	3.2	3.4	3.5	3.3	3.4	3.6
Q19	Self-satisfaction	3.3	3.1	3.5	3.4	3.2	3.2	3.3	3.3	3.4	3.4
Q20	Personal relationships	3.6	3.6	4.1	3.6	3.5	3.6	3.7	3.8	3.4	3.4
Q21	Sexual life	3.4	3.5	4.0	3.3	3.4	3.3	3.4	3.6	3.2	3.2
Q22	Support of friends	4.2	4.3	4.5	4.0	4.0	4.1	4.1	3.9	3.9	4.1
Q23	Environment at the place of residence	3.9	3.9	4.1	3.9	3.8	3.8	2.9	3.9	4.0	4.0
Q24	Availability of health care	4.1	4.1	4.3	4.1	4.2	4.0	4.2	4.1	3.9	4.6
Q25	Transport	3.7	3.8	3.9	3.7	3.7	3.6	3.8	3.7	3.6	4.1
Q26	Negative feelings	3.3	3.4	2.9	3.3	3.4	3.3	3.5	3.2	3.3	3.4

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Table 3 shows correlations between results per domains for the full set. As can be seen, environmental health correlates most strongly with mental health; the second strongest dependence was observed between environmental health and overall satisfaction, and the third strongest link was identified between overall satisfaction and mental health. As part of the evaluation of the set, we also determined internal consistency using the Cronbach's alpha coefficient (0.763).

Table 3. Correlation between results in specific domains for the full set

	Overall satisfaction	Overall health	Physical health	Mental health	Social health	Environmental health
Overall satisfaction						
Overall health	0.5267					
Physical health	0.3293	0.2968				
Mental health	0.5683	0.4774	0.3994			
Social health	0.4574	0.4508	0.3377	0.5533		
Environmental health	0.5748	0.4986	0.4931	0.6298	0.5410	

Table 4 shows the results for individual domains. To provide a clearer picture, we present the individual results in Charts 1 and 2. Chart 1 shows the results per domains for the set divided along the faculty lines. Chart 2 shows the results for the set divided along the year-of-study lines. The lowest and highest average values were found for physical health and environmental health, respectively; this applies to both our sets. The trends were very similar here. Dissatisfaction with physical health may be related to neglected exercise during the last year due to the restrictions put in place to curb the spread of COVID 19.

For the purposes of inferential statistics, we used the variance analysis calculation. Based on the boxplot evaluation, we can state that the data in each of the domains showed normal distribution.

Table 4. Results per domains

	Physical health		Mental health		Social health		Environmental health	
	Average	Deviation	Average	Deviation	Average	Deviation	Average	Deviation
All Faculties	13.17	1.65	13.98	2.33	13.72	3.88	15.63	2.47
FoE	13.11	1.67	14.16	2.21	13.67	3.74	15.57	2.5
FoS	13.16	1.69	13.65	1.44	13.54	4.01	15.72	2.36
FoPES	13.36	1.52	15.2	2.00	15.48	3.85	16.44	2.71
FEM	13.32	1.43	13.54	2.32	13.48	3.74	15.08	2.36
Year of study								
Year 1	13.15	1.65	14.04	2.56	13.43	4.04	15.31	2.64
Year 2	13.34	1.56	13.82	2.15	13.86	3.07	15.98	2.29
Year 3	12.97	1.74	13.85	2.31	14.37	3.68	15.51	2.41
Year 4	12.93	1.60	14.01	2.09	13.27	3.65	15.31	2.29
Year 5	13.63	1.54	14.36	2.43	13.48	4.35	16.51	2.44

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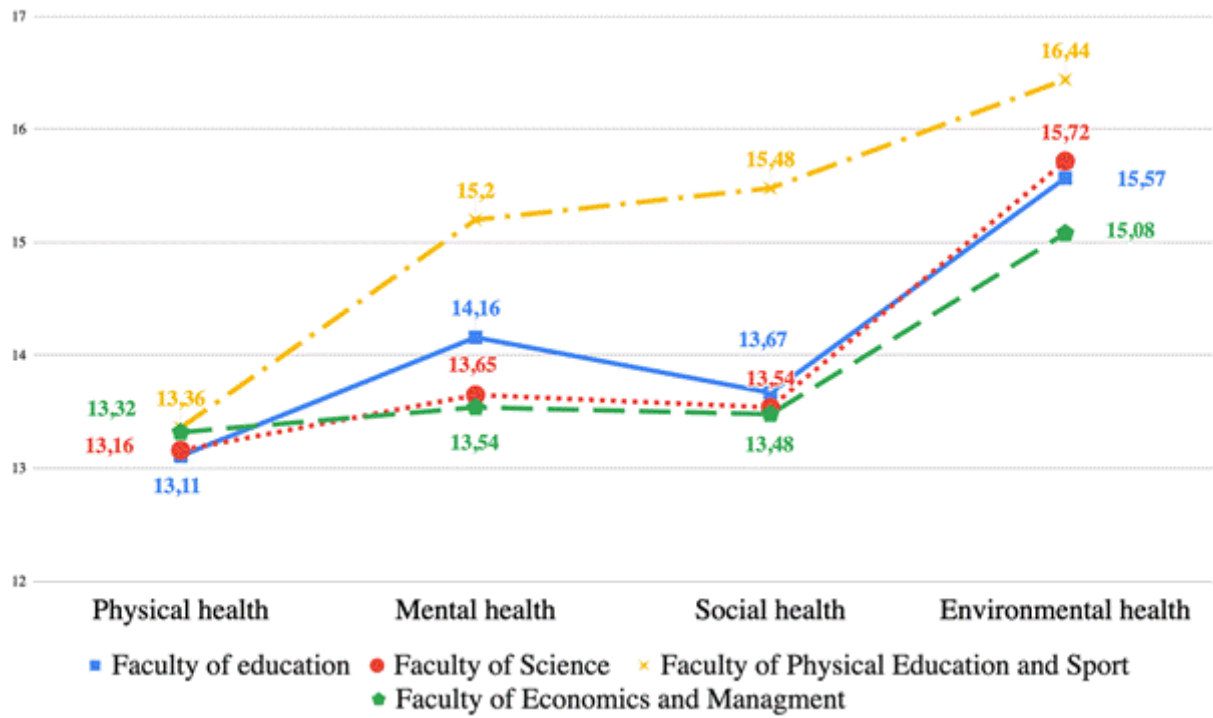Faculty of Economics and Management (FEM)

Figure. 1 Results per domain for the set divided along the faculty lines
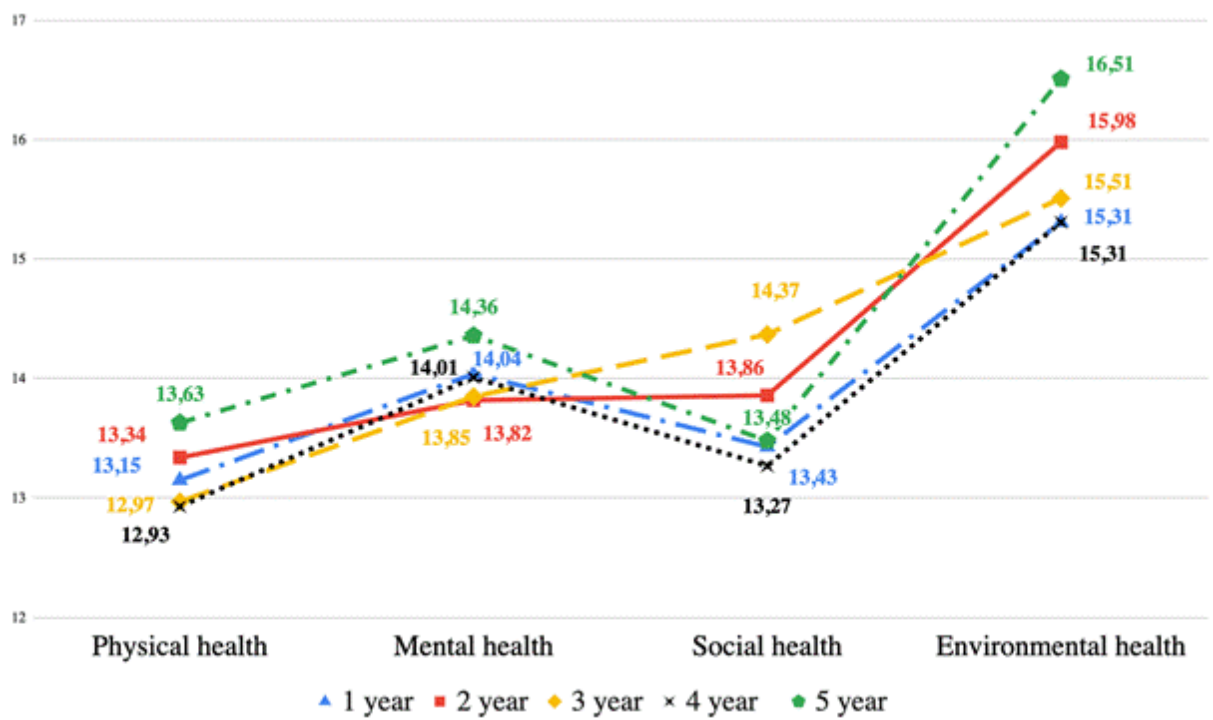

Figure 2. Results per domain for the set divided along the year-of-study lines

For ANOVA results, see Table 5. We compared the calculated values with the table values. There was no difference between the sets in the null hypothesis. If the value we calculated was higher than the table value, the null hypothesis was rejected and, therefore, a statistically significant variance existed.

Table 5. ANOVA results per domains and sub-sets

Set	Table value	Physical health	Mental health	Social health	Environmental health
Faculties	2.6285	0.4063	**4.4202**	1.9538	0.8249
Year of study	2.3956	0.4682	0.4273	**2.4554**	**3.8639**

We found a statistically significant relationship between the schools in the mental health domain and also in the set divided along the year-of-study lines in the social health and environmental health domains.

DISCUSSION

There are many variables affecting perceptions of quality of life. Family, parents' level of education, demographic indicators and, last but not least, a student's affiliation with the faculty or study programme. We have not investigated these changes as part of our research.

Overall quality of life, the average score of the whole set was 3.9, which is a very good result. After the set was divided, the Faculty of Physical Education and Sport students and second- and third-year students emerged as most satisfied with the overall quality of their lives and the overall quality of their health. Similarly to dental medicine students in Turkey, in this study, it concerned the fourth-year students who were most satisfied with the overall quality of their lives (Burdurlu, 2020). Montenegro students also show a similar perception of the quality of life; according to Jovanovic (2016) most students are satisfied with the quality of their lives and they also look with optimism into the future (Jovanovic, 2016). On the contrary, different results were found with respect to medical students in Saudi Arabia. The students identified unhealthy lifestyles, mental distress, and academic failure as the sources of their dissatisfaction (Malibary, 2019). According to Quang research, students in South Vietnam identified as factors affecting health gender, academic year, ethnicity, frequency of physical activity, financial expenses, scope of Internet use, length of sleep, use of sleeping pills, frequency of social activities, and stimulants' use (Quang, 2020).

Alboliteeh (2020) highlights the relationship between responsibilities and satisfaction with the quality of life. He works with the Grade Point Average (GPA), based on which students in the United States are admitted to schools and apply for scholarships. However, no evidence was found for a link between GPA and views of the quality of life. However, it was shown that students who have no other but study-related responsibilities at home are more likely to be satisfied with the quality of their lives (Alboliteeh, 2020).

Also, our research highlights a statistically significant difference between the schools as regards mental health, and also between the years of study when it comes to social health and environmental

health. Al- Shibani (2019) and Malibars (2019) point to the environmental component of health. With the sets divided along school affiliation and year-of-study lines, the lowest and the highest average scores were reported for physical activity and environmental health. This is similar to the results recorded for dental medicine students in Saudi Arabia, who showed the highest levels of satisfaction in environmental health, while in social and physical health, the results were poor. It was established that students with better grades scored lower averages in mental health (Al-Shibani, 2019, Malibary, 2019).

CONCLUSION

At a time affected by the COVID- 19 pandemic, there are many changes taking place in society that will influence the assessment of quality of life. The aim of our investigation was to assess the quality of life of students at a time of restrictions against COVID-19 disease. As there are not many research investigations on this topic so far, we have to wait for a direct comparison of similar groups. The results indicate that students rate quality of life positively, which is not significantly out of line with pre-pandemic COVID- 19 studies compared.

We believe it is important to monitor perceptions of quality of life with respect to secondary and university students for several reasons. Based on the discovered links between quality of life and its factors, we can adjust the factors and thus potentially allow future generations to view their quality of life more positively and increase their contribution to society. It is also important to monitor the quality of life currently due to the effects of the COVID-19 pandemic so that we can avoid any negative consequences.

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