

The COVID-19 Pandemic in Retrospect

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Abstract – This study investigates the behavioral and educational adaptations of young adults during the COVID-19 pandemic, with a focus on university students in Slovakia. Through a detailed questionnaire survey of 36 respondents aged 21–24, we analyzed their health concerns, physical activity levels, dietary habits, and preferences for educational resources. Our findings reveal a split preference between online and in-person learning, with electronic learning materials and teacher-prepared resources being dominating. The results also highlight the significant reduction in physical activity during the pandemic, which was partly compensated by leisure activities.

Keywords – COVID-19 Pandemic, University Students, Electronic Study Materials, Questionnaire Survey.

I. INTRODUCTION

The COVID-19 pandemic had a significant impact on social behaviour and society as a whole, particularly in 2020 and 2021. Perhaps the most striking consequence was the increase in mortality rates. The following figure illustrates the causes of death and the contribution of COVID-19 infections to total mortality. It is clear that COVID-19 had a significant impact on mortality rates in 2021 [1].

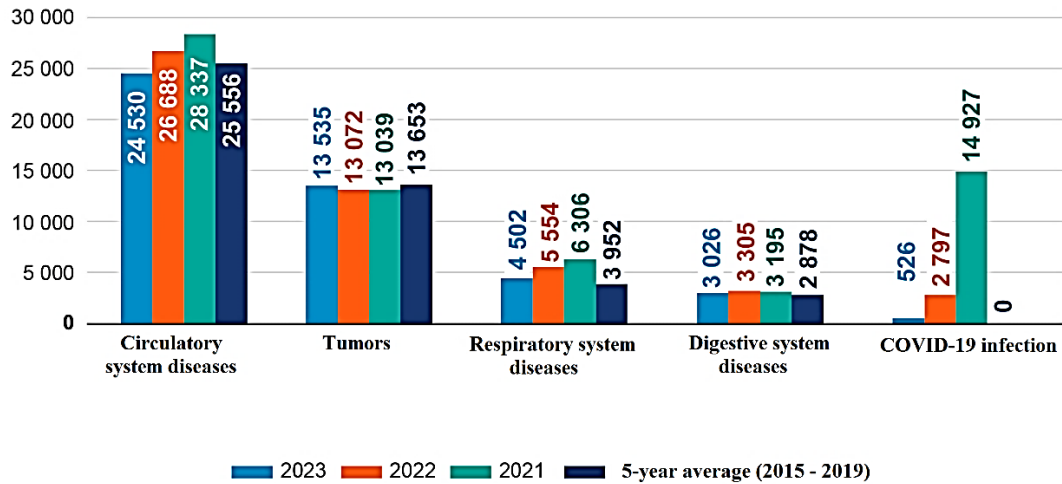


Fig. 1 The most common causes of death in the Slovak Republic [1]

On 6 January 2021, the Slovak commercial television channel TV JOJ announced the shocking news: Slovakia was the second country with the highest mortality rate during the COVID-19 pandemic [2]. It can be said that the pandemic caught the modern world largely unprepared. The first case in Slovakia was identified on 6 March 2020. On 7 March 2020, a positive test result confirmed the "patient zero", the first carrier of the disease in the country [3].

From that moment on, the COVID-19 period brought significant changes in people's attitudes, which influenced their behavior. This change in behavioral reflected in statistical indicators, both during and shortly after the pandemic period, especially as strict measures were gradually lifted. One notable outcome was an increase in sexually transmitted diseases (STDs), such as HIV, gonorrhea, and syphilis. The following charts illustrate the trends in reported cases of STDs in Slovakia [4].

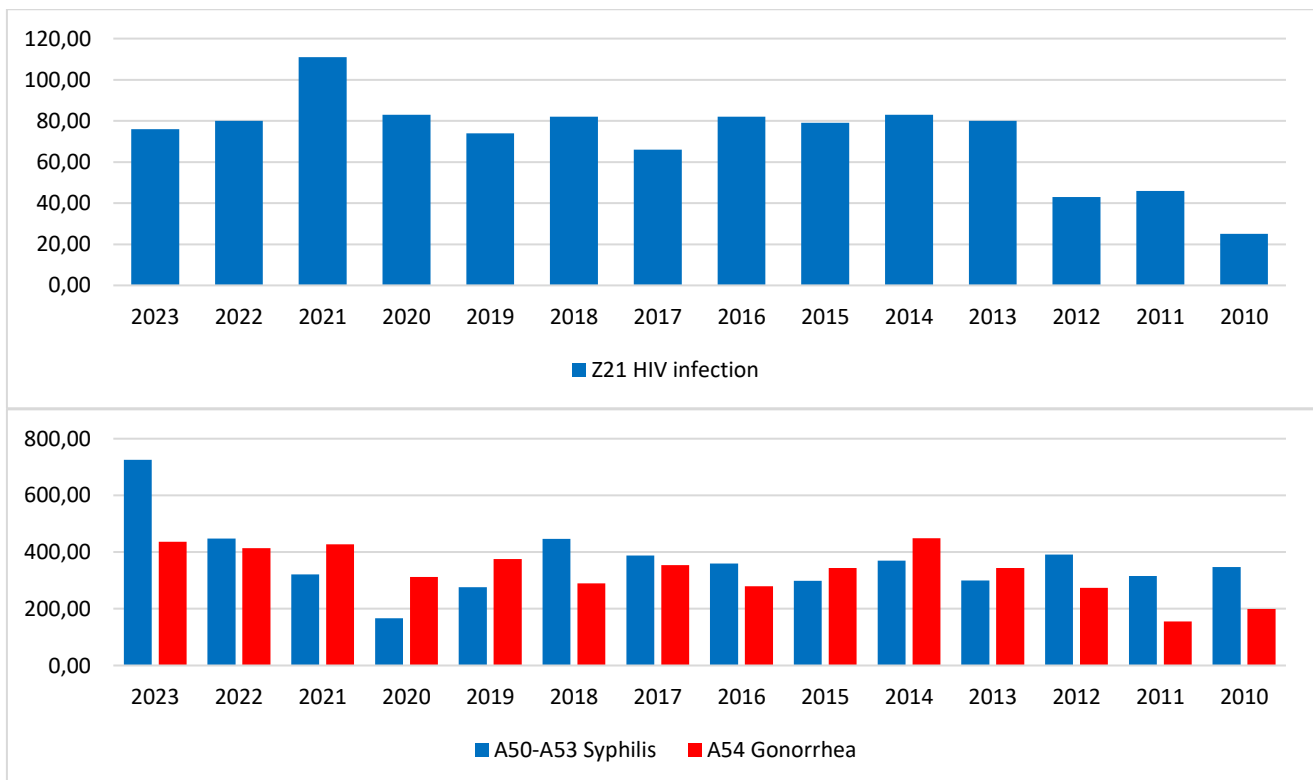


Fig. 2 Trends of selected infections in Slovakia in 2010 - 2023 [4]

Trends clearly show that in 2020, the number of reported cases of gonorrhea and syphilis decreased significantly. HIV infections increased slightly, but remained close to the average of recent years. The situation was very different in 2021, where a clear rise in cases of HIV, syphilis, and gonorrhea was observed. This increase was likely linked to the initial relaxation of safety measures. Compared with trends in previous years, the latter two diseases showed a declining tendency during the period of tighter restrictions [4].

This period is also closely linked to changes in medication use and attitudes towards increase, individual protection against the COVID-19 virus. Our study focuses on the responses of several participants and explore these changes.

II. MATERIALS AND METHOD

In our study, we conducted a questionnaire survey with a sample of 36 respondents. The age range was between 21 and 24 years, with one respondent under the age of 20 and one over the age of 25. In total 21 women and 15 men participated in the survey. Their demographic composition, including their place of residence, is presented in the table no. 1.

Table 1. Relationship between gender and place of residence of respondents

Male	6	Village	17
Female	11		
Male	9	City	19
Female	10		

In our research, we wanted to reflect on the COVID-19 pandemic period several years after it occurred. We focused on understanding how young people, who had recently left high school and were entering their first years of university, remembered this challenging time. We were particularly interested in their perceptions and experiences, as this demographic represents a unique perspective, shaped by the critical life transition they experience during the pandemic.

The aim of our survey was to examine the behavioral habits of respondents during the COVID-19 pandemic. The collected responses are presented in the following section – Results.

The survey was completely anonymous and with the consent of the respondents.

III. RESULTS

Our first point of interest was to investigate whether the respondents had noticed any health complications during the COVID-19 pandemic. The responses were broadly in line with our expectations. The majority of respondents reported no health issues, but a significant proportion – 36% observed some complications. This situation is illustrated in the following chart.

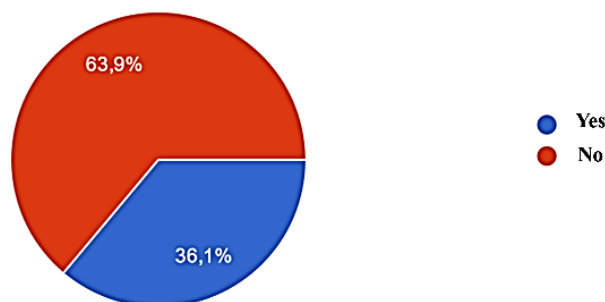


Fig. 3 Occurrence of health complications

The results of our research fall into the broader categories. The first category focuses on basic questions about dietary supplements, perceived fear of potential infection, physical inactivity, and related issues. The second category examines study materials, particularly their format, such as electronic versus printed materials.

Within the first category, we asked the following questions:

- Have you included foods or supplements containing carotenoids, vitamins A, E, C, B2, selenium and zinc in your diet to improve vision and reduce eye strain during online classes or long hours at the computer?
- On a scale of 1 to 10, how afraid are you currently of COVID-19 virus infection and its progression and complications?
- Have you noticed an increased in calories in your diet during home-based online education or pandemic measures (curfews, etc.) compared to the period before the COVID outbreak?
- Have you noticed less physical activity during home-based online education or pandemic measures (curfews, etc.) compared to the period before the COVID outbreak?
- Have you noticed any of the following in your online home education or in your anti-epidemic measures (curfews, isolation, restrictions on outside activities, etc.)? (multiple answers are possible)
- How did you most often use your free time outside of online learning?

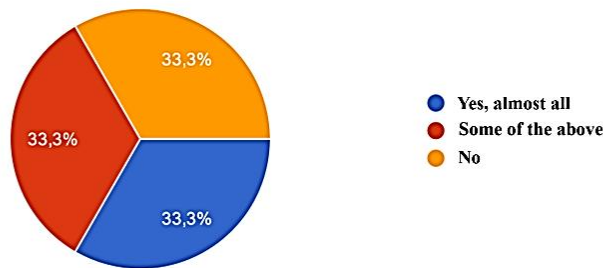


Fig. 4 Answer the question: Have you included foods or supplements containing carotenoids, vitamins A, E, C, B2, selenium and zinc in your diet to improve vision and reduce eye strain during online classes or long hours at the computer?

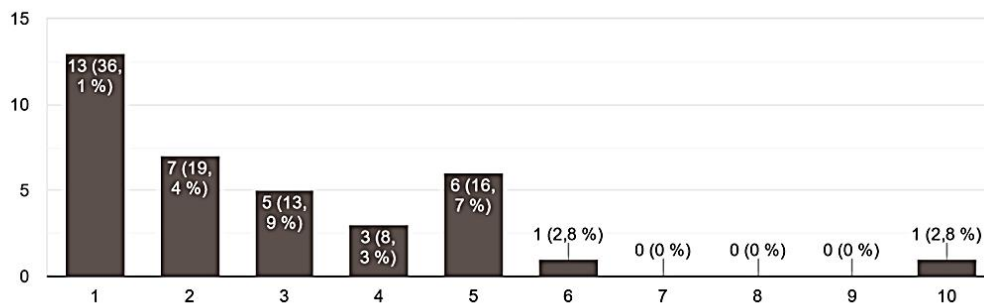


Fig. 5 Answer the question: On a scale of 1 to 10, how afraid are you currently of COVID-19 virus infection and its progression and complications?

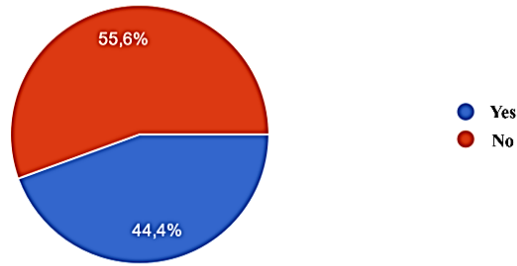


Fig. 6 Answer the question: Have you noticed an increased in calories in your diet during home-based online education or pandemic measures (curfews, etc.) compared to the period before the COVID outbreak?

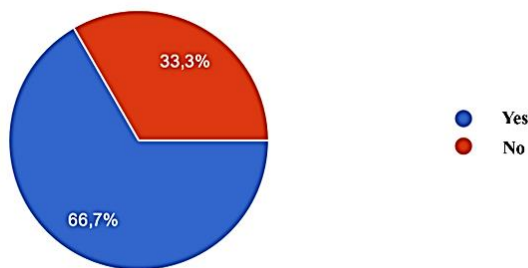


Fig. 7 Answer the question: Have you noticed less physical activity during home-based online education or pandemic measures (curfews, etc.) compared to the period before the COVID outbreak?

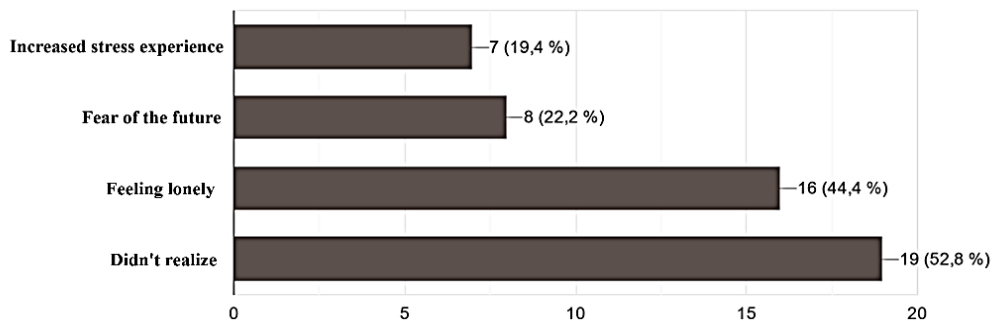


Fig. 8 Answers to the question: Have you noticed any of the following in your online home education or in your anti-epidemic measures (curfews, isolation, restrictions on outside activities, etc.)? (multiple answers are possible) (since respondents had the opportunity to choose multiple answers, the results are reported proportionally)

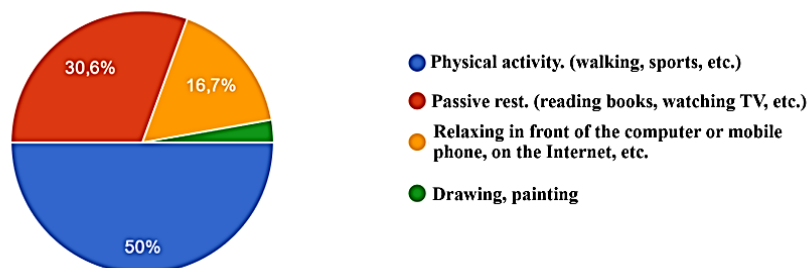


Fig. 8 Answers to the question: How did you most often use your free time outside of online learning?

In the second category of questions, we focused on the following:

- During the online education period, to what extent did you use printed and electronic resources for learning and exam preparation?
- What printed sources did you use (1-most often, 2-often, 3-usually, 4-rarely, 5-least often)?
- What electronic sources did you use (1-most often, 2-often, 3-usually, 4-rarely, 5-least often)?
- What kind of education do you prefer?

The respondents' answers to these questions are presented in the following section:

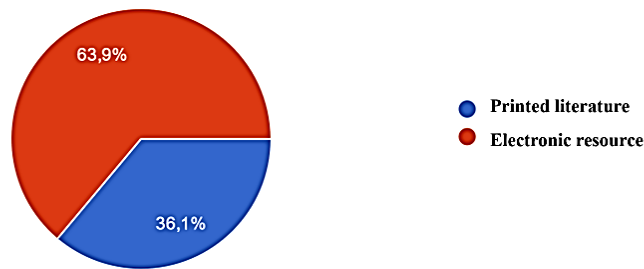


Fig. 9 Answers to the question: During the online education period, to what extent did you use printed and electronic resources for learning and exam preparation?

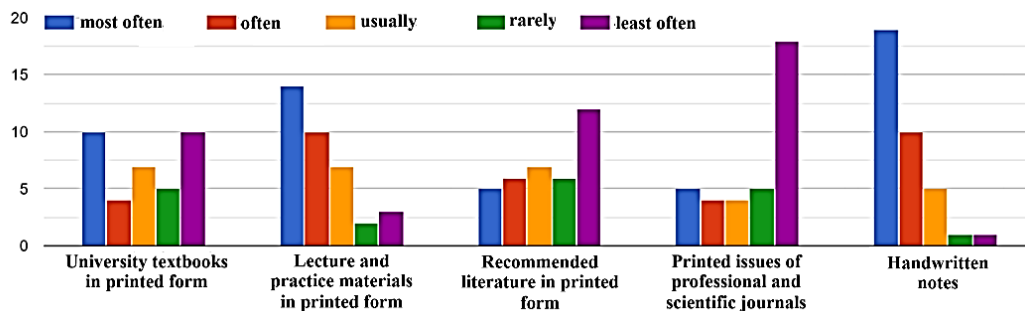


Fig. 10 Answers to the question: What printed sources did you use (1-most often, 2-often, 3-usually, 4-rarely, 5-least often)?

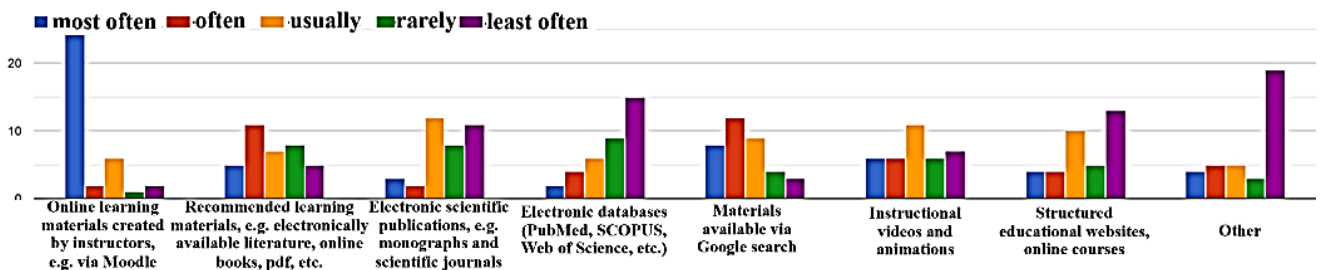


Fig. 11 Answers to the question: What electronic sources did you use (1-most often, 2-often, 3-usually, 4-rarely, 5-least often)?

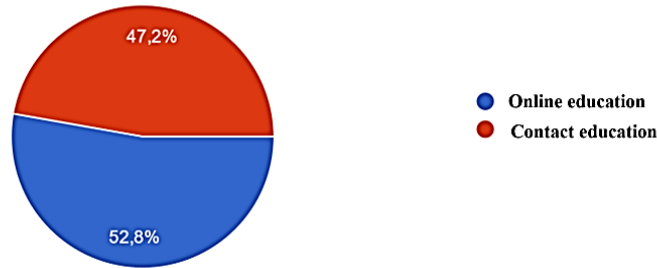


Fig. 12 Answers to the question: What kind of education do you prefer?

IV. DISCUSSION

In previous years, research on similar topics has been conducted at J. Selye University, highlighting the institution's continued interest in understanding the impact of COVID-19 on education and student experience. For example, Tóthová Tarová et al. (2021) investigated the knowledge of COVID-19 among biology and non-biology university students at the Faculty of Education, shedding light on students' awareness during the pandemic [5]. Building on this work, Szencziová et al. (2022) investigated the introduction and effectiveness of online education at the J. Selye University during the first wave of the pandemic, highlighting the challenges and opportunities in implementing digital education [6]. More recently, Szencziová et al. (2023) investigated the impact of modern online teaching techniques on students in higher education during the second wave of the pandemic, further contributing to the understanding of digital pedagogy in a rapidly evolving educational landscape [7].

These studies provide a solid foundation for understanding the challenges and opportunities presented by the pandemic in the context of higher education at our university.

V. CONCLUSION

From the results of our questionnaire survey, we found that the majority of respondents preferred online learning. The reasons for this preference may vary. It is likely to be due to the convenience of studying at home, the conducive environment of being at home, or the general feeling of safety from COVID-19 infection. However, the majority share was not overwhelmingly significant, as the second half of respondents expressed a preference for in-person learning. This preference was probably influenced by the lack of social interactions, such as lack of friendships or family ties.

Regarding the use of study materials, students overwhelmingly favoured electronic resources, especially study materials prepared by their teachers. Among printed materials, handwritten notes and printed study materials provided by teachers were the most popular.

From the responses in the first category, we found that students often supplemented their vitamin intake during the COVID-19 pandemic. While most respondents did not report an increase in calorie consumption, there was a consensus that physical activity was significantly reduced. Many respondents compensated for this reduction by engaging in leisure-time physical activity during the pandemic.

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REFERENCES

- [1] Štatistický úrad SR. 2024. Demografia – počet zomretých a príčiny úmrtí v SR za rok 2023. [Online]. Available: <https://slovak.statistics.sk/wps/portal/ext/products/informationmessages/>. [Cit. 12.12.2024].
- [2] Jánošová, B.; Dulaiová, M. 2021. Slovensko má druhú najvyššiu úmrtnosť na ochorenie Covid-19 na svete, TV JOJ. [Online]. Available: <https://www.noviny.sk/koronavirus/579245-slovensko-ma-druhu-najvyssiu-umrtnost-na-ochorenie-covid-19-na-svete>. [Cit. 4 16 2023].
- [3] 2020. „COVID-19: Slovensko pozná pacienta „0““. [Online]. Available: https://www.uvzsr.sk/index.php?option=com_content&view=article&id=4064:covid-19-slovensko-pozna-pacienta-0q&catid=250:koronavirus-2019-ncov&Itemid=153. [Cit. 16 4 2023].
- [4] Štatistický úrad SR - DataCube. 2024. Vybrané prenosné choroby povinne hlásené. [Online]. Available: https://datacube.statistics.sk/#!/view/sk/vbd_sk_win2/zd1824rs/v_zd1824rs_00_00_00_sk/. [Cit. 12.12.2024].
- [5] Tóthová Tarová, E.; Szarka, K.; Szencziová, I.; Mészárosné Darvay, S. Zs.; Fehér, Z.; Jaruska, L.; Nagy, M.; Balázs, P. 2021. Knowledge about COVID-19 among biology and nonbiology university students in the Faculty of Education of J. Selye University in Slovakia. In: ICERI 2021 Proceedings: 14th annual International Conference of Education, Research and Innovation / Gómez, Chova L.; López Martínez, Agustín; Candel Torres, Ignacio. – 1. vyd. – Valencia (Španielsko) : IATED, 2021. – ISBN 978-84-09-34549-6. – ISSN 2340-1095, s. 852-860. DOI:10.21125/iceri.2021.0260.
- [6] Szencziová, I.; Kántor, K.; Mészárosné Darvay, S. Zs.; Tóthová Tarová, E.; Nagy, M.; Fehér, Z.; Balázs, P. 2022. Az online oktatás bevezetése és hatékonysága a Selye János Egyetemen a Covid-19 pandémia első hulláma után. In: AJ Ambrus, D. Borbélyová, & Š. Gubo (Eds.), *13. medzinárodná konferencia Univerzity J. Selyeho - Sekcie pedagogiky a informatiky* (str. 147. <https://doi.org/10.36007/4133,2022,147>
- [7] Szencziová, I.; Tóthová Tarová, E.; Mészárosné Darvay, S. Zs.; Nagy, M.; Balázs, P.; Fehér, Z. 2023. Modern online Teaching Techniques and their Effect on Students in Higher Education During the Second Wave of the Covid-19 Pandemic at J. Selye University in Slovakia. In: INTED2023: Conference Proceedings / Chova, Luis Gómez; González Martínez, Chelo; Lees, Joanna.– 1. vyd. – Barcelona (Španielsko) : IATED, 2023. – (INTED Proceedings, ISSN 2340-1079). – ISBN 978-84-09-49026-4. – ISSN 2340-1079, s. 5801-5807.