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Impact of the COVID-19 Pandemic on Health Behaviors Students of the Calisia University in Kalisz

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Abstract

The onset and rapid spread of the SARS-CoV-2 coronavirus in 2019 was the reason why WHO announced a number of restrictions related to population movement, gathering, limiting access to cultural, recreational, and sports facilities. Most schools and universities moved to a hybrid or fully remote mode of teaching. Studies show that regulations aimed at reducing the spread of SARS-CoV-2, including home isolation, negatively affected students' mental state, motivation to work and study. The purpose of this study is to assess the health behaviors of Calisia University students during the COVID-19 pandemic.

Methods: *A questionnaire comprising 16 questions was developed. The questionnaire was introduced into the Survey Monkey electronic survey system with a note explaining the purpose of the study. On June 22, 2022, a link to the questionnaire was e-mailed to all students (n=1,425) of the Calisia University. A reminder was sent to the students two weeks later.*

Results: *On the basis of our study, it was found that the COVID-19 pandemic had a significant impact on the students of the Calisia University. Some of the students suffered from the disease, which consequently affected their physical condition. During the pandemic, no significant increase in anti-health behaviors, such as smoking cigarettes or drinking excessive amounts of alcohol, was observed in the students. For most of the respondents, the COVID-19 pandemic had a significant impact on their mental state. In addition, the pandemic had an adverse effect on the economic situation of the surveyed students.*

Conclusions: *No significant increase in anti-health behavior was observed in students during the pandemic. Respondents claimed that the COVID-19 pandemic had a significant impact on their mental state and definitely worsened their economic situation.*

Key words: *Covid-19 pandemic, students, health behaviors*

Introduction

The onset and rapid spread of the SARS-CoV-2 coronavirus in 2019 was the reason why WHO announced a number of restrictions concerning population movement, gathering, limiting access to cultural, recreational, and sports facilities. Most schools and universities moved to a hybrid or fully remote mode of teaching. Studies show that the regulations aimed at reducing the spread of SARS-CoV-2 including home isolation, negatively affected students' mental state, motivation to work and study [1]. An increase in stress and anxiety due to the COVID-19 pandemic was observed in about 60% of respondents from France, Spain, and Poland [2–4]. In a multicenter study conducted in Germany it was found that for 40–60% of students at the time reported the level of psychological stress, as well as feelings of loneliness and anxiety about the future increased [5–7]. According to the results of an online survey of Turkish students, 38% of respondents were anxious about the pandemic situation [8]. Similarly, a quarter of students coming from China were afraid of the situation associated with the SARS-CoV-2 outbreak [9]. It has also been proven in the literature that perceptions of the pandemic situation are gender-dependent. Female students show greater vulnerability to stress and increased mental health symptoms [5, 10, 11].

Psychological and emotional stresses such as anxiety, depression, boredom, and loneliness, resulting from the situation, may lead to changes in some lifestyle elements among students, including alcohol consumption or smoking [12–15]. The legality and availability of alcohol and tobacco appear to play an important role in the unusual situation of seclusion. Therefore, some adolescents resorted to nicotine or alcohol as a way to cope with the psychological discomfort and negative feelings associated with the COVID-19 situation [12–16]. However, taking stimulants during pandemic-induced social isolation is a multifaceted problem. It can intentionally violate by restricting movement and meeting with peers, engaging in risky consumption alone, increasing substance use with family members, and finally using social networks to consume stimulants with peers

simultaneously [15, 17, 18]. The observed changes in smoking and alcohol consumption during the SARS-CoV-2 pandemic also show the influence of parental control and the role of socialization on the likelihood of engaging in risky behavior. This fact is raised in some studies, which showed that seclusion forced adolescents to spend time mostly with their parents rather than with peers, which may have increased parental supervision and interfered with the adolescents' access to substances, leading to lower consumption [13, 15, 17, 19, 20].

The aim of the study

The purpose of this study is to assess the health behaviors of Calcasieu University students during the COVID-19 pandemic.

Materials and Methods

Questionnaire

A questionnaire comprising 16 questions was developed (Table 1). The first three questions aimed to collect basic characteristics (age, gender, study semester) of the respondents. Questions 4 and 5 investigated the vaccination and infection history of the responding students. Questions 6 to 11 evaluated the impact of the Covid-19 pandemic on general and mental health, as well as on smoking and alcohol consumption. Questions 12 and 13 focused on study progress and students' motivation to study. Questions 14 aimed at evaluating the impact of Covid-19 pandemic on the financial situation of the students. Questions 15 and 16 allowed the students to freely express their positive and negative associations related to the Covid-19 pandemic. For all questions, with the exceptions of questions 1, 3, 15 and 16, the respondents had to choose from a set of predefined answers. In questions 1 and 3 a numeric answer was required, while in questions 15 and 16 free text responses were to be provided. Questionnaire testing showed that providing the answers in the questionnaire took between 3 to 10 minutes.

Survey

The questionnaire was introduced into the Survey Monkey electronic survey system with a note explaining the purpose of the study. On June 22, 2022, the link to the questionnaire was e-mailed to all students (n=1,425) of the Calisia University. A reminder was sent to the students two weeks later. The responses to the questionnaire were stored at SurveyMonkey.com in an encrypted electronic data format. SurveyMonkey does not collect such data as names, e-mail addresses, or IP addresses; therefore, the anonymity of responses was maintained, and the identity of the participants remained unknown even to the investigators. Survey Monkey application generates summary statistics and charts.

Table 1. Survey questions

Number	Question	Answer
Q1	How old are you?	Field for numeric input
Q2	What is your gender?	• Male, • Female, • Other
Q3	What semester are you studying?	Field for numeric input
Q4	Have you been vaccinated against Covid-19?	• Yes, normal vaccination • Yes, normal vaccination and booster shot • No
Q5	Have you become infected by Covid-19?	• No • Yes, once • Yes, more than once
Q6	What impact did the Covid-19 pandemic have on your general health situation?	• I have been ill more often • No change compared to non-pandemic times • I have been ill less often (e.g., less colds, less flus)
Q7	What impact did the Covid-19 pandemic have on your mental health (stress level)?	• I was very stressed • I was stressed • I had a normal level of stress • I was less stressed • I was very much less stressed

Number	Question	Answer
Q8	Do you smoke?	• No • Yes, occasionally • Yes, regularly • Yes, i am a heavy smoker
Q9	Has your smoking increased during the pandemic?	• No • Yes
Q10	Do you consume alcohol?	• No • Yes, occasionally • Yes, regularly
Q11	Has your alcohol consumption increased during the pandemic?	• No • Yes
Q12	What impact did the Covid-19 pandemic have on the progress of your studies?	• I will finish my studies earlier • No impact on the progress of my studies • I will finish my studies later
Q13	What impact did the Covid-19 pandemic have on your motivation to study?	• I am less motivated • No impact on my motivation • I am more motivated
Q14	What impact did the Covid-19 pandemic have on your financial situation?	• Negative Impact • No Impact • Positive Impact
Q15	Please state your top three negative associations with the Covid-19 pandemic	Open text field
Q16	Please state your top three positive associations with the Covid-19 pandemic	Open text field

Results

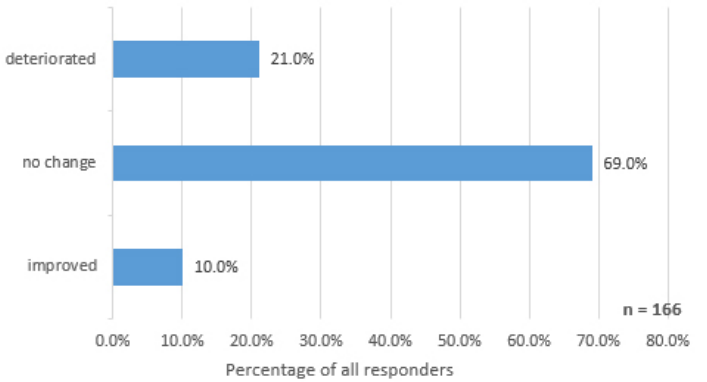
Until the end of July 2022, the answers from a total of 166 students (respondent rate 11.6%) were collected. The characteristics of the responding students have been summarized in Table 2.

Table 2. Characteristics of responding students

Characteristic	Number of responses (% of respondents)
Age	
• <20	4 (2.4%)
• 20–29	126 (75.9%)
• 30–39	14 (8.4%)
• 40–49	13 (7.8%)
• ≥50	8 (4.8%)
• no answer	1 (0.6%)
Gender	
• female	115 (69.3%)
• male	51 (30.7%)
Study semester	
• 1–3	71 (42.8%)
• 3–4	68 (41.0%)
• 5–6	16 (9.6%)
• >6	7 (4.2%)
• no answer	4 (2.4%)
Vaccination status	
• no vaccination	56 (33.7%)
• basic vaccination	52 (31.3%)
• basic + booster vaccination	57 (34.3%)
• no answer	1 (0.6%)
Covid-19 infection	
• no	96 (57.8%)
• yes, once	53 (31.9%)
• yes, more than once	17 (10.2%)

As far as changes to the respondents' general health situation is concerned, 69% of them stated that there was no change at all (Figure 1). Slightly above one fifth (21%) declared there was a deterioration of their general health, while 10% claimed that their general health situation improved during the Covid-19 pandemic.

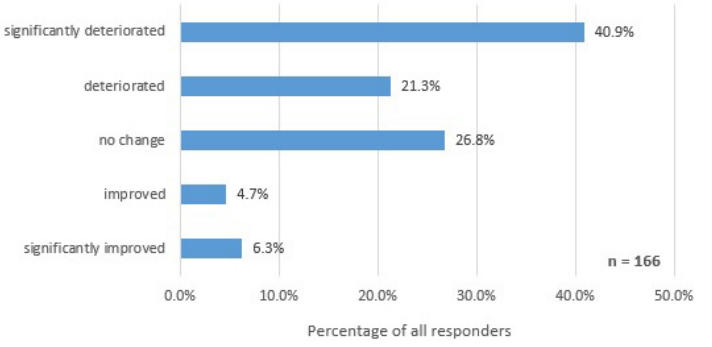
Figure 1. Impact of Covid-19 pandemic on general health



Source: Own elaboration.

When asked about changes of their mental health, nearly two thirds (62.2%) of the respondents declared that it either deteriorated (21.3%) or significantly deteriorated (40.9%) (Figure 2). Only 11% of the respondents perceived an improvement of their mental health status (4.7% claimed that it improved, and 6.3% that it significantly improved).

Figure 2. Impact of Covid-19 pandemic on mental health/stress level

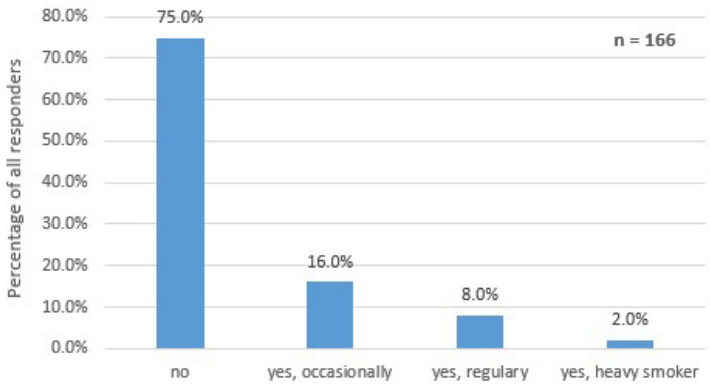


Source: Own elaboration.

When evaluating their smoking behavior, 75% of the respondents stated that they do not smoke, 16% claimed they are occasional smokers, 8% smoke

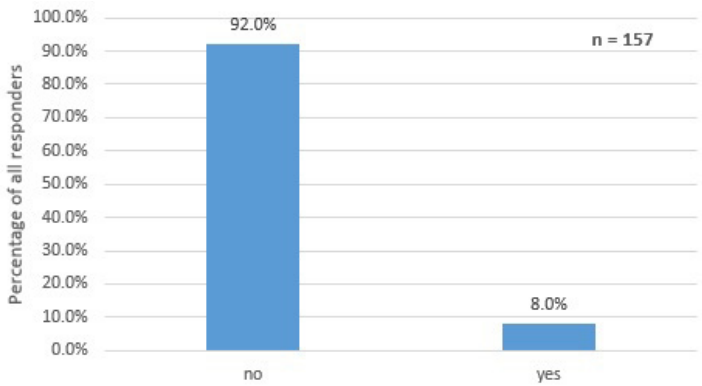
regularly, and 2% of them are heavy smokers (Figure 3a). The significant majority of respondents (92%) declared that the Covid-19 pandemic had not resulted in the increase of their consumption of smoking products (Figure 3b). However, nine respondents (5.4%) skipped answering this question.

Figure 3a. Smoking behavior



Source: Own elaboration.

Figure 3b. Increase of smoking due to Covid-19 pandemic

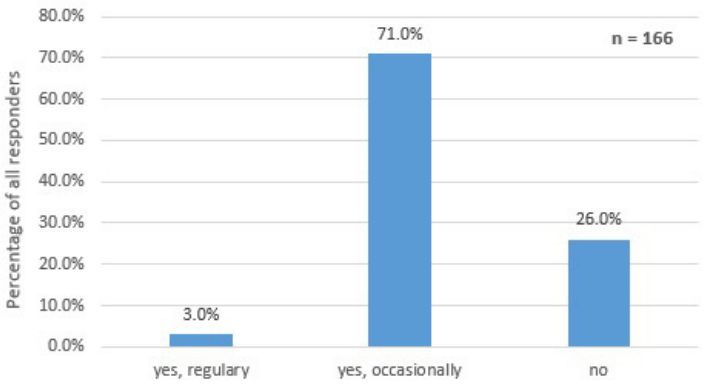


Source: Own elaboration.

26% of the respondents declared that they do not consume alcohol at all, while 71% claimed that they occasionally drink alcohol. 3% of the

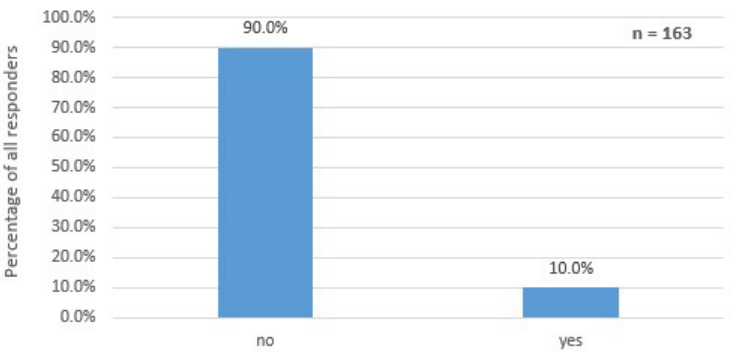
respondents consider themselves regular alcohol drinkers (Figure 4a). 90% of the respondents declared that the Covid-19 pandemic had not increased their consumption of alcohol (Figure 4b). Three respondents (1.8%) provided no answer this question.

Figure 4a. Drinking behavior



Source: Own elaboration.

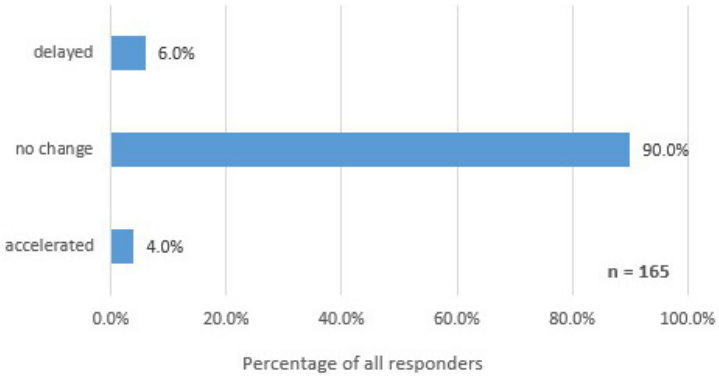
Figure 4b. Impact of Covid-19 pandemic on drinking



Source: Own elaboration.

When asked about the impact of the Covid-19 pandemic on their study progress, 90% of the respondents expect no change (Figure 5). 6% of them believe that the pandemic will delay their studies, while 4% expect an acceleration.

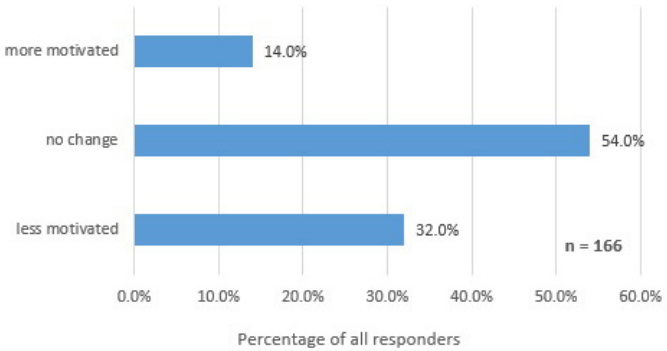
Figure 5. Impact of Covid-19 pandemic on study progress



Source: Own elaboration.

The motivation to study improved in 14 out of all the respondents, and it became reduced in 32% of them (Figure 6). Slightly more than half (54%) of the respondents (54%) declare that their motivation to study had not been changed by the pandemic.

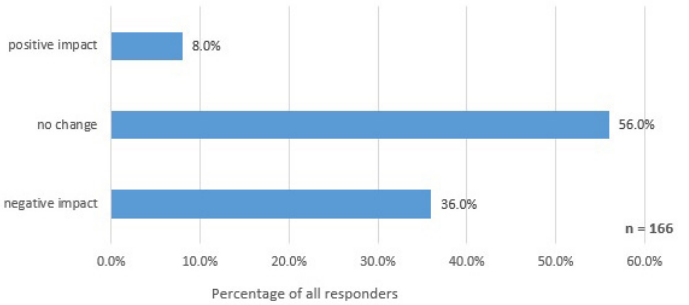
Figure 6. Impact of Covid-19 pandemic on motivation to study



Source: Own elaboration.

36% of all the respondents claim that the Covid-19 pandemic has resulted in a deterioration of their financial situation, while only 8% claim that their financial situation has improved (Figure 7).

Figure 7. Impact of Covid-19 pandemic on financial situation of students.



Source: Own elaboration.

Answers to the question on what students hated the most about the Covid-19 pandemic were used to create a word cloud (Figure 8). The top 10 words most frequently occurring in the answers were: 'isolation,' 'people,' 'mask,''lack,''fear,''stress,''restrictions,''possibilities,''loneliness.' and 'lockdown'.

Figure 8. Negative associations with the Covid-19 pandemic



Source: Own elaboration.

Answers to the question on what students loved the most about the Covid-19 pandemic were also used to create a word cloud (Figure 9). The top 10 words most frequently occurring in the answers were: 'time,' 'home,' 'family,' 'people,' 'distance learning,' 'remote learning,' 'remote class,' 'possibility,' 'free time,' and 'remote work'.

Figure 9. Positive associations with the Covid-19 pandemic



Source: Own elaboration.

Discussion

The self-studies undertaken can help evaluate interventions and develop prevention programs to improve the health behavior of adolescents. Knowledge of how the SARS-CoV-2 pandemic has affected smoking and drinking patterns provides public authorities with useful data to adjust prevention and health promotion efforts to better target the needs of young people [21–24].

Open-access studies and results of the research on COVID-19 can be found everywhere, and they address not only the infection itself, but also the impact on society and interpersonal relationships. Isolation has had

a huge impact on the psyche of the society [25–28]. Uncertainty, stress, restrictions on social contact, isolation, fear for one's own health and the health of those closest to one's loved ones, and even thoughts of loss of income are all very traumatic experiences. Relationships with others are very important for all people, as they help better cope with stress, prevent depression and other mental disorders [29–32]. Having friends, family and spending time with each other makes people feel happier and healthier. Being at peace with their self, when they do not have to pretend to be someone else, someone they are not, they can form lasting and healthy relationships with others, which is good for mental health. The pandemic has cut these relationships loose, and introduced physical and mental distance. Even when relationships with other people are maintained, they are often limited to 'likes' on social media, which are used to create an idealized self-image. This in no way streamlines building relationships, growing close to each other, or getting support, and it neither increases people's willingness to help others. The way of functioning has also changed, as society mostly started to – and still continues to – work remotely, and life has mostly moved to the Internet. Moreover, it will stay that way, as it is not only the younger generation that is addicted to cell phones or computers, and contact through social networks is proving more convenient than meeting in the real world. People have also distanced themselves from those around them by greeting each other without shaking hands or talking at a distance [33–36]. A total of 166 students of the Calisia University participated in the survey. The survey comprised 16 questions and it could be filled out online, using the Survey Monkey survey system, where the purpose of the survey was also explained. The largest number of respondents were people between 20 to 29 years old (126 people – 75.9%). The majority were women (115 people – 69.3%). Importantly, 53 respondents (31.9%) had been infected with the virus once, and 17 respondents (10.2%) had struggled with the virus more than once.

Dr Amy Dawel of the Australian National University of Canberra conducted the study in which it was found that an increase in the deterioration of people's mental health was associated with disruption of daily mirth and

social and work life, in addition to financial uncertainty. The greatest impact of the pandemic was felt by people who were infected and/or hospitalized, and also the caregivers of these people felt the effects of the pandemic. The most interesting fact, however, is that according to Dr Amy Dawel those who encountered the disease did not complain of a deterioration in their mental health, and there was no negative impact on their well-being. Based on the study, it can be concluded that the COVID-19 pandemic did not result in the increase of the consumption of tobacco products (90%), and that alcohol consumption neither increased (90%) during the pandemic [37, 38]. The preliminary report of the scientific study conducted by Dr Margaret Dragan shows that many people struggle with the symptoms of psychopathology, constant anxiety, lowered mood and chronic feelings of tension. The presence of these symptoms promotes negative thinking. Based on the survey, it can be concluded that motivation to learn during the pandemic did not decrease (54%) [39]. A person's attitudes towards health reveal beliefs and attitudes towards values related to one's own health, but also to the health of others. In the literature on public health, health psychology, sociology and health promotion, studies and research on attitudes toward health are very selective. The most extensive coverage of this topic has been provided by Maciej Demel. He is the founder of Polish health pedagogy, and in his books he has described attitudes towards one's own health and that of others. According to the author, the picture of a holistic and mature attitude to health consists primarily in a rational and emotionally balanced attitude to disease, but also to disability and death, and a sense of responsibility for health and shared responsibility for public health, in addition to a willingness and ability to rush to the aid of others [40]. The attitudes described by the author included the attitudes of, among other things, brutality, onlookers, Samaritans and desensitization, which relate to the health and illnesses of others. The attitudes of people to health and disease presented by M. Demel range from irrationally over-sensitive to reckless, exaggerating their condition. The attitudes of drug addiction, hysteria, hypochondria, carcinophobia, and even terrorism have also been described by the author. The survey shows that the overall health situation of respondents did not change (69%), and only a small

group (21%) declared there was a threat to their overall health, and there were also respondents (10%) whose health situation improved [40]. Personal resources are required to maintain an adequate mental, physical and social condition. Therefore, it is necessary to develop appropriate mechanisms to help adapt to the changing environment. It also turns out to be important to take care of the physical and mental potential that allows the development of human activity. These mechanisms are a kind of expression of balance and harmony of physical, mental and social aspects of a person. Socio-economic factors have the greatest impact on the maintenance of person's well-being in today's world. The factors include: income, social status, education level, social support. Lifestyle, which may or may not be conducive to health, also depends on the above listed factors [41, 42]. However, in order for lifestyle to be conducive, it must be health-promoting in nature. In this regard, it can be said that low levels of education and poverty are the cause of a kind of health inequality. Studies show that people with low socio-health status have poorer health, engage in risky behavior much more often, and have more difficult access to health care institutions and facilities. Also, a significant role is played by social support, which is considered a significant factor in shaping positive health behavior and counteracting the pathogenic impact of potential stressors [43, 44].

Conclusion

Based on the study, it can be indisputably concluded that the COVID-19 pandemic had a significant impact on the students of the Calisia University. Some of the students were affected by the disease, which, consequently, impacted their physical condition. No significant increase in anti-health behavior was observed in students during the pandemic. Respondents claimed that the COVID-19 pandemic had a significant influence on their mental state and definitely worsened their economic conditions.

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