



A Century's Experience for a Healthy Future

# COVID-19 PANDEMIC IN SLOVENIA

Results of a panel online survey on the impact of the pandemic on life (SI-PANDA), 26<sup>th</sup> iteration

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## INTRODUCTION

The COVID-19 pandemic has had a significant impact on all areas of human life, both in Slovenia and around the world. It has been three years since the first SARS-CoV-2 infection occurred in Slovenia on 4 March 2020. Since then, Slovenia has experienced several epidemic waves, affecting the entire country and all its inhabitants in one way or another. This time has been important for researching the impact and consequences of the pandemic on the individual and society as well as on the health system. The severity and the scope of the COVID-19 pandemic and the introduction of measures to prevent and limit the transmission of the infection have had a profound impact on the daily lives of all people in 2020 and 2021, including those not directly affected by the virus. The uncertain and long-lasting period of health and social crisis has led to a gradual exhaustion of compensatory mechanisms in humans, and thus to a lower success rate of measures to prevent the spread of SARS-CoV-2 infection among the population.

In order to better understand people's behaviour in the context of a crisis situation, both in terms of adherence to recommended measures such as vaccination against COVID-19, use of a mask, keeping safety distance, etc., as well as to gain insight into changes in their lifestyle, physical and mental health, we have already launched the SI-PANDA survey on 4 December 2020, which studies the impact of the COVID-19 pandemic on the lives of Slovenians. After 19 iterations of the survey in 2020 and 2021 (the last iteration was carried out from 7–10 December 2021), a third set of 7 surveys was carried out, starting in September 2022 and concluding in March 2023.

The new set of SI-PANDA research was primarily aimed at determining how often people have been exposed to SARS-CoV-2 from the start of the pandemic to the present day, and to study the consequences of recovering from SARS-CoV-2 infection (post-COVID syndrome or long COVID). We were also interested in people's attitudes towards vaccination and the reasons for their reluctance to get vaccinated.

External circumstances have changed in the meantime. The SARS-CoV-2 virus has become our constant companion, as they call it our "new normal". We have very quickly forgotten the period of the large number of people infected, seriously ill and dying as a result of COVID-19. We no longer want to remember the constraints and measures taken to deal with the pandemic, which severely interfered with our daily lives. Most people who become infected with SARS-CoV-2 today, when Omicron is the predominant variant, are likely to have mild to moderate respiratory illness and will recover without special treatment. COVID-19 is treated in the same way as other respiratory infections in relation to the epidemiological situation as regards the implementation of measures from 1 April 2023. Due to the favourable epidemiological situation and the reduced pressure of SARS-CoV-2 infected patients on hospitals, the daily reporting of the number of occupied beds for SARS-CoV-2 infected patients has been terminated on 31 March 2023.

The only current recommendations and guidance that remain are the guidance for visitors to nursing homes and other social care facilities, and the proposals and guidelines for mediumand long-term sustainable preparedness and response to SARS-CoV-2 infections in Slovenia. This is the final report, the report after the 26<sup>th</sup> SI-PANDA survey iteration. Since 4 December 2020, we have been presenting the results of the survey to experts and decision-makers, as well as to the media and the general public. This also implements the WHO recommendation<sup>1</sup> that countries should regularly conduct qualitative and quantitative population surveys, which should be the basis for further action. It is undoubtedly an important and special period in our history, and with the SI-PANDA survey and the reports we published after each iteration, we wanted to shed light on how this period was lived and experienced by the people of Slovenia. The Latin proverb says "Littera scripta manet", what is written remains. The SI-PANDA research team has also followed this Latin saying in order to preserve at least some of the lessons and experiences of the COVID-19 pandemic for future generations.

<sup>&</sup>lt;sup>1</sup> https://apps.who.int/iris/bitstream/handle/10665/335820/WHO-EURO-2020-1160-40906-55390-eng.pdf.

## **METHODOLOGICAL NOTES**

The research in the form of an online survey is being conducted in twenty-six iterations starting on 4 December 2020. The first set of the survey (up to and including the 12<sup>th</sup> iteration) was conducted by the Mediana Institute for Market and Media Research on behalf of the National Institute of Public Health (NIJZ) while the second and third sets are being conducted by Valicon. The first twelve iterations were conducted once every two weeks and the second part, including the 19<sup>th</sup> iteration, once a month. The third set of survey, which is being carried out after a ninemonth break, will also be carried out once a month. The data are analysed at the NIJZ.

Selected panel members are invited to the online survey, which takes place through the online panel. Each iteration of online survey involves a representative sample of about 1,000 adults aged 18 to 74.

At the beginning of research, we used the World Health Organization (WHO)<sup>2</sup> questionnaire as a basis, which we translated and adapted to the situation in our country according to the WHO guidelines. We also used the translated MHI-5 questionnaire to measure individuals' mental health and the 7C questionnaire to determine the willingness to vaccinate. We have also included some questions that have been used in previous surveys carried out by the National Institute of Public Health and questions that members of the research team and colleagues have designed according to current needs.

The data presented in the report are weighted by gender, age groups and statistical region.

The report presents data from the 26<sup>th</sup> iteration of the online survey, that took place from 21 March 2023 to 24 March 2023 on a sample of 1,022 adults aged 18 to 74 years. Some comparisons with previous iterations of the survey are also shown.

### Research carried out so far:

 1st iteration from 4 Dec 2020 to 6 Dec 2020

 2nd iteration from 18 Dec 2020 to 21 Dec 2020

 3rd iteration from 4 Jan 2021 to 5 Jan 2021

 4th iteration from 15 Jan 2021 to 17 Jan 2021

 5th iteration from 29 Jan 2021 to 30 Jan 2021

 6th iteration from 12 Feb 2021 to 15 Feb 2021

 7th iteration from 26 Feb 2021 to 1 Mar 2021

 8th iteration from 12 Mar 2021 to 29 Mar 2021

 9th iteration from 26 Mar 2021 to 29 Mar 2021

 10th iteration from 9 Apr 2021 to 12 Apr 2021

 11th iteration from 7 May 2021 to 9 May 2021

 13th iteration from 8 Jun 2021 to 10 Jun 2021

14<sup>th</sup> iteration from 6 Jul 2021 to 9 Jul 2021 15<sup>th</sup> iteration from 25 Aug 2021 to 28 Aug 2021 16<sup>th</sup> iteration from 21 Sept 2021 to 23 Sept 2021 17<sup>th</sup> iteration from 12 Oct 2021 to 15 Oct 2021 18<sup>th</sup> iteration from 9 Nov 2021 to 12 Nov 2021 19<sup>th</sup> iteration from 7 Dec 2021 to 10 Dec 2021 20<sup>th</sup> iteration from 20 Sept 2022 to 23 Sept 2022 21<sup>st</sup> iteration from 18 Oct 2022 to 21 Oct 2021 22<sup>nd</sup> iteration from 22 Nov 2022 to 25 Nov 2022 23<sup>rd</sup> iteration from 14 Dec 2022 to 17 Dec 2022 24<sup>th</sup> iteration from 24 Jan 2023 to 27 Jan 2023 25<sup>th</sup> iteration from 21 Feb 2023 to 24 Feb 2023 26<sup>th</sup> iteration from 21 Mar 2023 to 24 Mar 2023

<sup>&</sup>lt;sup>2</sup> https://www.euro.who.int/en/health-topics/health-determinants/behavioural-and-cultural-insights-for-health/tools-and-resources/who-tool-forbehavioural-insights-on-covid-19/survey-tool-and-guidance-behavioural-insights-on-covid-19-produced-by-the-who-european-region.

# **KEY FINDINGS OF THE 26<sup>™</sup> ITERATION**

### Supporting current recommendations

In the 26<sup>th</sup> iteration of the survey, the respondents gave the highest levels of support to the recommendation of effective ventilation of enclosed spaces (84.3%) and effective ventilation in educational institutions (83.8%), isolation for persons with confirmed SARS-CoV-2 infection (71.8%), and the use of masks in health care facilities, pharmacies, and homes for the elderly (59.5%). Most support for the current recommendations comes from people in the 65–74 age group. Those vaccinated against COVID-19 are more likely to support all of these recommendations than those who are not vaccinated.

### Compliance with recommendation to contain the spread of SARS-CoV-2 infections

With the aim of preventing the transmission of the SARS-CoV-2 virus, individuals have predominantly adhered to the recommendation of proper coughing and sneezing hygiene (83.1%) in the past seven days, ventilation of indoor spaces several times a day (82.8%), and avoiding visits to the elderly when experiencing respiratory infection symptoms (81.0%). A good third of individuals stated that they ventilate spaces more than before the pandemic. In the event of cold symptoms occurring, 49.3% of individuals ventilate the rooms more frequently.

### > Vaccination against COVID-19 and seasonal influenza

In the most recent iterations of SI-PANDA, the proportion of people who do not intend to be vaccinated against COVID-19 has been relatively stable at around one-quarter of respondents. Respondents who have not been vaccinated against COVID-19 are most concerned about the side effects of vaccination, long-term impact on their health and the safety of the vaccines. People who received the vaccine against COVID-19 cited the following reasons for vaccination: preventing a more severe course of the disease or its consequences and protecting their health and the health of their loved ones.

## Compliance with isolation and quarantine and action in case of cold symptoms or respiratory infection

In case of cold symptoms or respiratory infection, the majority of people would react by self-testing for SARS-CoV-2 (65.1%), a third would wait to see how the symptoms develop and just under a quarter would self-isolate. Upon contact with a person who tested positive for the SARS-CoV-2 virus, despite not developing symptoms themselves, 63.4% of people would get tested.

### Long COVID-19

The majority of people who have been infected with SARS-CoV-2 at least once (57.4%) report that their infection was asymptomatic or with mild symptoms. About 60% of respondents reported that they had some problems three months after the first or only infection, or a second infection, which lasted for at least two months. After having had a COVID-19 infection, the most common problems reported by respondents were fatigue and lack of energy, both after the first and only infection and after the second infection. About 40% of people still have problems after having COVID-19. People who still have problems after having had COVID-19 report a poorer quality of life compared to people who no longer have problems.

### Experiencing stress

Around one fifth (19.1%) of respondents feel tense, stressed or under a lot of pressure often or on a daily basis. This is more common among women and younger age groups. The majority of

respondents manage tensions, stress and pressures easily or with some effort, a minority report that they do not manage them or manage them with severe effort (4.4%). The lowest proportion of people who manage stress easily is among younger adults, aged between 18 and 29. Risky stress behaviour (experiencing stress frequently and having severe problems coping with it) is more common in younger age groups

### Satisfaction with life

In the 26<sup>th</sup> survey iteration, we find that 59.8% of adults are satisfied with their life, while 33.0% are dissatisfied with their life. We find that satisfaction with life is significantly associated with symptoms of depressive disorder or mental health problems. People who do not have mental health problems are much more satisfied with their lives than those with problems or depressive disorder.

## **RESULTS**

# Supporting current recommendations to control the spread of SARS-CoV-2 infections

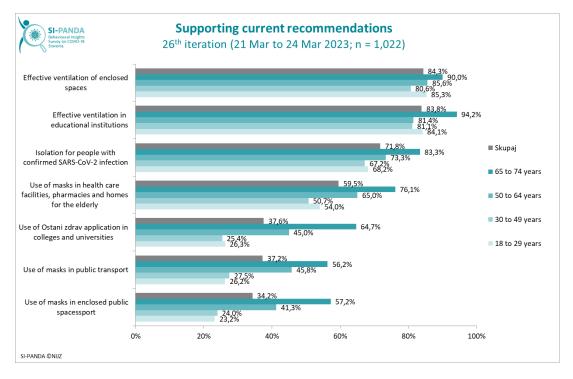
Within days of the declaration of a coronavirus epidemic in Slovenia (12 March 2020), a number of measures were taken to limit the spread of SARS-CoV-2 infections, which varied according to the epidemiological situation in the country. At the end of May 2022, the Government adopted a decision on the expiry of the Ordinance on the temporary measures for the prevention and control of infectious disease COVID-19. Throughout the duration of the measures, as well as after their termination, there are recommendations for protecting health and preventing the spread of infections, which are also valid in the current epidemiological situation.

In August 2022, the Expert baselines and guidelines for preparedness and response to SARS-CoV-2 infections in the autumn-winter season 2022/2023 in Slovenia<sup>3</sup>were prepared, according to which public health measures will be adapted according to the epidemiological situation. Five possible long-term scenarios for the evolution of the epidemic have been developed, linked to: virus characteristics, population susceptibility, social factors and pharmacological measures. The objectives are based on five pillars (vaccination, transmission control, testing and treatment, SARS-CoV-2 monitoring and contact reduction measures). Each pillar has specific recommendations relating to the baseline (Phase 1) and the escalation phase (Phase 2). From 22 July 2022, we are in Phase 1, which aims to protect the most vulnerable groups of the population in order to prevent an increase in the number of people with the more severe form of COVID-19. Measures aimed at limiting the spread of the SARS-CoV-2 virus are recommended, but do not interfere significantly with the daily lives of most individuals. As of 1 April 2023, the special measures related to COVID-19 came to an end. COVID-19 is now treated like any other respiratory infection. Isolation is no longer mandatory, and sick pay for isolation is no longer covered by the budget. Special clinics and testing sites have also closed, and the #OstaniZdrav app has ceased operation. However, general recommendations to prevent the spread of respiratory infections still apply.

Between 21 March and 24 March 2023, we asked respondents how supportive they were of the current recommendations.

The highest proportion of people support effective ventilation of enclosed spaces (84.3%), effective ventilation in educational institutions (83.8%), and isolation for people with confirmed SARS-CoV-2 infection (71.8%), and 59.5% support the use of masks in health care facilities, pharmacies and homes for the elderly. 37.6% supported the use of the Ostani Zdrav app in colleges and universities and 37.2% supported the use of masks in public transport. In the 26<sup>th</sup> survey iteration, the use of masks in enclosed public spaces was the least supported (34.2%). Most of the current recommendations are the most supported by the respondents in the 65–74 age group (Figure 1).

<sup>&</sup>lt;sup>3</sup> https://www.nijz.si/sites/www.nijz.si/files/uploaded/strokovna\_izhodisca\_in\_usmeritve\_za\_pripravljenost\_in\_odzivanje\_na\_okuzbe\_z\_virusom\_sars-cov-2.pdf.



#### Figure 1: Supporting current recommendations, total and by age groups.

Persons who have received at least one dose of COVID-19 vaccine statistically significantly support all the recommended measures compared to those who will not be vaccinated. These measures include effective ventilation of enclosed spaces (86.7%), effective ventilation in educational institutions (86.7%), isolation for people with confirmed infection (77.5%), the use of masks in health care facilities, pharmacies and homes for the elderly (67.5%), the use of Ostani Zdrav app in colleges and universities (44.9%), the use of masks in public transport (44.5% and the use of masks in enclosed public spaces (40.4%) (Figure 2).

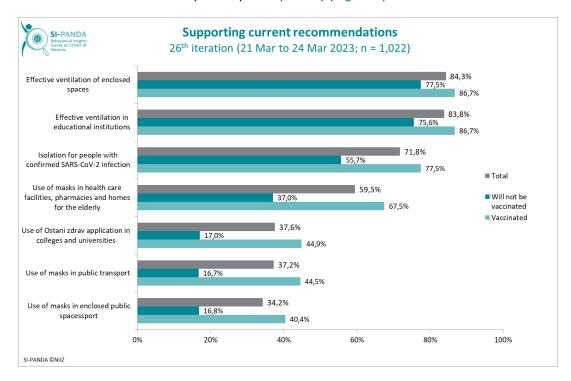
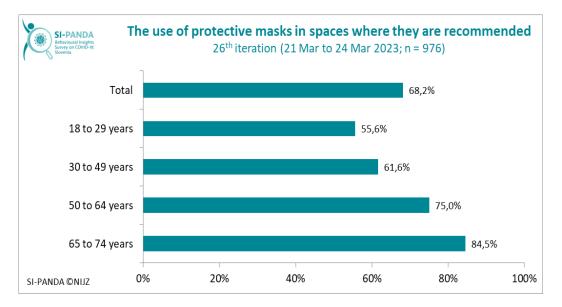


Figure 2: Supporting current recommendations, total and by vaccination status.

# Compliance with recommendations to control the spread of SARS-CoV-2 infections in the last 7 days

The vast majority of respondents (83.1%) have followed the instructions for proper cough and sneeze hygiene in the last 7 days, while a poor tenth did not express an opinion on these recommendations (9.0%), and 7.9% did not adhere to the instructions. It appears that the recommendation for proper cough and sneeze hygiene was followed by more women (86.5%) than men (79.9%). The recommendation to ventilate rooms several times a day was the second most commonly followed recommendation in the 26<sup>th</sup> survey iteration, with 82.8% of persons adhering to it. Among the more commonly followed recommendations for preventing the transmission of SARS-CoV-2 infections was also the recommendation to avoid visiting older adults when experiencing symptoms of infection. So it was done by 81.0% of individuals. It appears that this recommendation is more frequently followed by women (85.9%) compared to men (76.5%) and persons in older age groups. Among them, as many as 91.1% of those aged 65 to 74 years followed the recommendation. Similarly, it appears that those vaccinated against COVID-19 adhere to the recommendation to a greater extent (84.1%) compared to those who have not been vaccinated or do not intend to get vaccinated (72.5%). In the last 7 days, 71.3% of respondents followed the recommendation to disinfect their hands when washing was not possible, while 10.2% neither followed nor disregarded the recommendation, and 18.5% did not follow the recommendation. Among those vaccinated against COVID-19, a statistically significant number of persons (76.0%) followed this recommendation compared to those who will not be vaccinated (57.2%). In the last 7 days, 69.7% of persons washed their hands with water and soap for at least 20 seconds each time, while 13.3% neither followed nor disregarded the recommendation, and 17.0% did not follow the recommendation (Figure 4).

Protective masks were used by 68.2% of persons in spaces where they are recommended. The use of protective masks significantly increased with age (Figure 3). Those who were vaccinated against COVID-19 (73.7%) used protective masks more frequently compared to those who were not vaccinated or do not intend to get vaccinated (50.6%).



## Figure 3: The adherence to wearing a protective mask in the last 7 days in spaces where it is recommended, total and by age groups.

Regarding the question on avoiding touching the eyes, nose and mouth with dirty hands in the last 7 days, 63.0% of the persons answered that they followed this recommendation, 14.7% neither followed nor did not follow the recommendation and 22.3% did not follow the recommendation. There is a statistically significant difference in the age of the respondents - the age group 18–29 years old was the least likely to follow this recommendation, with 30.6% of respondents not following it. The recommendation to stay at home in case of SARS-CoV-2

infection was followed by less than half of the respondents (45.5%) in the 26<sup>th</sup> survey iteration, 43.7% did not follow it, and 10.8% neither followed nor did not follow it. Among those who did not follow this recommendation, there were statistically significantly more people who worked at their workplace (53.3%) compared to those who worked from home or combined work and home (24.7%–37.5%). Those living with persons at higher risk of SARS-CoV-2 infection were more likely to follow this recommendation (52.7%) compared to those without such persons in the household (43.1%). Regarding the question on avoiding a public social event they wanted to attend in the last 7 days, 45.2% of the persons answered that they had followed this recommendation, 12.0% neither followed nor did not follow the recommendation, and 42.8% did not follow the recommendation. The age group 65–74 years was the most likely to follow this recommendation to attend was followed by 41.2% of people in the last 7 days, 13.2% neither followed nor disregarded the recommendation, and 45.6% did not follow the recommendation (Figure 4). The age group 18–29 years was the least likely to follow this recommendation, with 60.1% not following it.

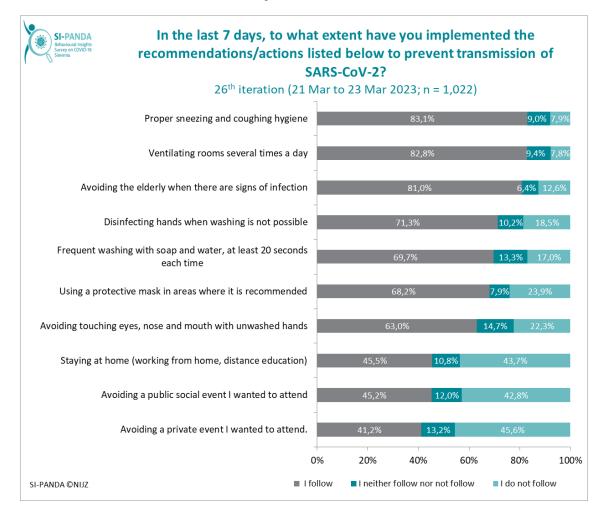


Figure 4: Compliance with the listed recommendations/actions to prevent transmission of SARS-CoV-2 among those persons to whom the recommendation/action applies, total.

Regarding ventilating rooms, a good third of people (35.1%) said they ventilate rooms more than before the pandemic (12.5% ventilate significantly more, 22.6% ventilate more), and 63.5% ventilate as often as they did before the pandemic (Figure 5). More attention needs to be paid to proper ventilation, as we have already seen in a small number of studies, mainly related to premises in educational institutions, that not enough attention is being paid to ventilation before the SARS-CoV-2 pandemic. When looking at whether and where there are differences between those who ventilate more and those who ventilate the same as before the pandemic, we see significant differences according to the status of vaccination against COVID-19. Among those

who have been vaccinated against COVID-19, the proportion of those who are ventilating more than before the pandemic is higher (38.9%) compared to those who have not been vaccinated or do not intend to be vaccinated (24.2%).

49.3% of people ventilate more often if they show signs of colds, 49.8% ventilate the same as before the pandemic, and 1.0% ventilate less than before the pandemic (Figure 5). We observed differences in the frequency of ventilation at signs of colds, depending on the status of vaccination against COVID-19. Vaccinated persons (54.4%) were more likely to say that they ventilate more than before the pandemic, compared to those who are not vaccinated against COVID-19 and do not intend to be vaccinated (35.0%). However, those living with children aged 18 years and younger (59.6%) did not change their ventilation habits to a greater extent compared to the prepandemic period compared to those not living with children aged 18 years and younger (45.0%).

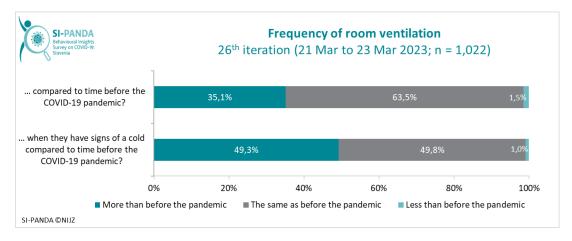
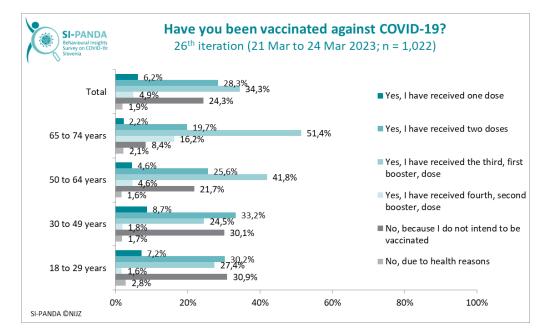


Figure 5: Frequency of room ventilation compared to the time before the pandemic, total.

## Vaccination against COVID-19

In the 26<sup>th</sup> SI-PANDA survey iteration, 74.3% of the respondents answered that they had already been vaccinated against COVID-19 with at least one dose of the vaccine. Similarly, data from the Electronic Registry of Vaccinated Persons (slov. elektronski register cepljenih oseb – eRCO) show that 71% of adults have received at least one dose of COVID-19 vaccine by 24 March 2023. In the 26<sup>th</sup> SI-PANDA survey iteration, 6.2% of persons responded that they had received one dose of vaccine, 28.3% of persons responded that they had received two doses of vaccine, 34.3% of persons responded that they had received the first booster dose, and 4.9% of persons responded that they had received the second booster dose. Statistically significantly more people do not intend to be vaccinated in the 18–64 age group (21.7%–30.9%), compared to persons aged 65–74 years (8.4%). 24.3% of respondents do not intend to be vaccinated, and 1.9% of respondents were not vaccinated for health reasons (Figure 6). According to eRCO, by 24 March 2023, 38% of adults had been vaccinated with the first booster dose and 5% of Slovenian adults had been vaccinated with the second booster dose



#### Figure 6: Vaccination against COVID-19, total and by age groups.

A good half (53.5%) of the respondents agreed that the COVID-19 vaccine can prevent the more severe course of COVID-19, 13.3% were undecided and a third of respondents disagreed. The proportion of people who believe that the vaccine can prevent a more severe course of the COVID-19 is the highest in the 65 to 74 age group (68.9%), compared to persons aged 18 to 64 (46.8%–56.7%) (Figure 7).

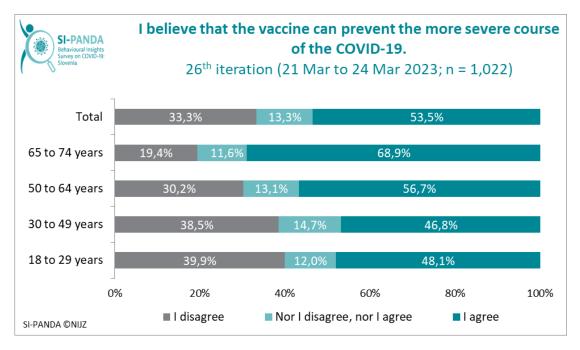


Figure 7: Opinion on whether vaccination can prevent a more severe course of the disease, total and by age groups.

35.5% of the respondents think that vaccination against COVID-19 is not necessary and that it is better to get over the disease naturally. More people aged 30–49 years (41.9%) think that vaccination against covid-19 is not necessary and that it is better to get over the disease naturally, compared to older people aged 50–74 years (24.5%–32.4%) (Figure 8). Statistically significantly more people who will not be vaccinated against covid-19 (69.9%) agree that it is better to get over the disease naturally compared to those who will be vaccinated (23.3%).

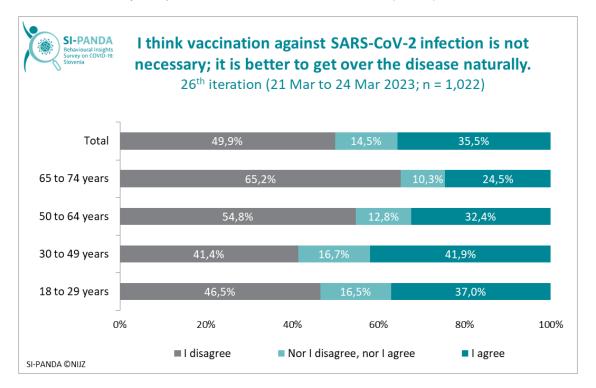


Figure 8: Opinion on whether it is better to get over the disease naturally, total and by age groups.

In the 26<sup>th</sup> survey iteration, respondents were asked again about the factors that influenced or would influence their decision to be vaccinated against COVID-19. As in previous iterations of the survey, the 26<sup>th</sup> iteration showed that, on average, respondents were most likely to agree that their decision to vaccinate depended / will depend on whether there was / is enough information available that the vaccine is safe (average score on the 7-point scale in for safety and effectiveness is 4.4) and effective (average score on the 7-point scale in for safety and effectiveness is 4.3). The decision was / is also influenced by whether the vaccine has been in use for a long time (4.0) and the magnitude of the risk of SARS-CoV-2 infection at the time of vaccination (3.9). On average, respondents were least likely to agree that the decision to vaccinate depended or will depend on the accessibility of vaccination (3.3) (Figure 9).

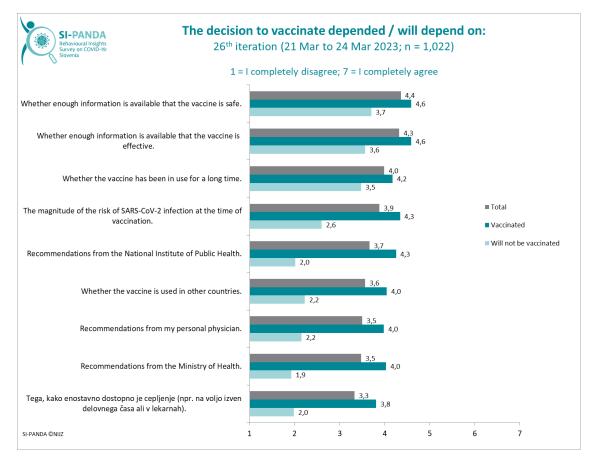


Figure 9: What the decision to vaccinated against COVID-19 depends on, total and by vaccination status.

37.8% of respondents believe that everyone should be vaccinated in general, according to the national vaccination programme, irrespective of the SARS-CoV-2 virus. This opinion is statistically significantly higher among the 65–74 age group (51.0%) compared to the 18–64 age group (34.1%–39.3%) (Figure 10).

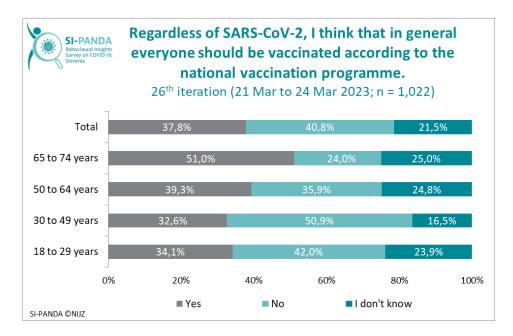
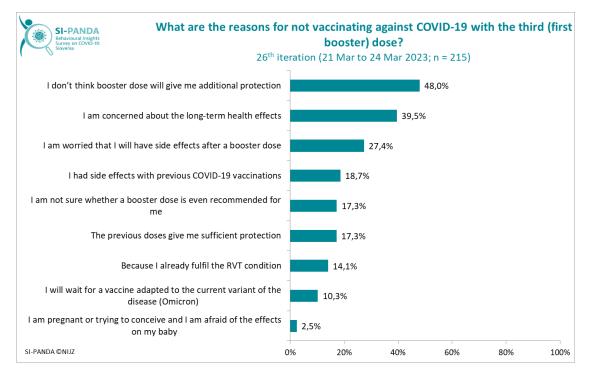


Figure 10: Opinion on vaccination in accordance with the national vaccination programme, total and by age groups.

People who had received primary doses of vaccine against COVID-19 (34.5%) were asked how likely they were to be vaccinated with the first booster dose against COVID-19: 15.0% reported they were likely to be vaccinated and 74.2% reported they were unlikely to be vaccinated with the first booster dose against COVID-19. People who had received the primary doses of vaccine were asked about their reasons for not receiving the third dose (the first booster dose). Just under a half of respondents thought that the booster dose would not give them additional protection (48.0%), 39.5% of persons were concerned about the long-term health effects, 27.4% of respondents were concerned about the side-effects after the booster dose, 18.7% had side effects after the previous vaccinations, 17.3% were not sure that the booster dose were meeting the RVT condition (14.1%), waiting for a vaccine adapted to the current variant of the disease (10.3%), and pregnancy or trying to conceive and associated care for the child (2.5%) (Figure 11). Respondents could give several reasons why they would not be vaccinated with the third dose (the first booster dose).



## Figure 11: Reasons against vaccination with a third dose of COVID-19 vaccine among persons who received first two doses of COVID-19 vaccine and who are unlikely to be vaccinated with a third dose of COVID-19 vaccine, total. Note: Several answers were possible.

Those who reported having received a third dose (first booster) of COVID-19 vaccine (39.3%) were asked how likely they were to be vaccinated with a second booster dose (fourth dose) of COVID-19 vaccine. 32.2% indicated that they were likely to be vaccinated, and 49.0% indicated that they were unlikely to be vaccinated with a second booster dose of COVID-19 vaccine; 18.8% of the respondents were undecided.

Persons who received the first booster dose were asked about their reasons for not receiving a fourth (second booster) dose of COVID-19 vaccine and they could list several reasons for not doing so. Just under a half of the respondents (44.6%) felt that a booster dose would not give them additional protection, 33.9% were concerned about long-term health effects, 29.3% were worried that they would experience side effects after a second booster dose, and 29.1% thought that the doses they had already received gave them enough protection. A good fifth were not sure whether a booster dose is even recommended for them, 19.6% stated that they will wait that the vaccine will be adapted to the current variant of the disease, 19.5% stated that they already fulfilled the RVT condition, and 19.2% had side effects after the previous vaccinations against COVID-19. The least frequently cited reason for not vaccinating with a second booster dose is pregnancy or trying to conceive (1.6%) (Figure 12).

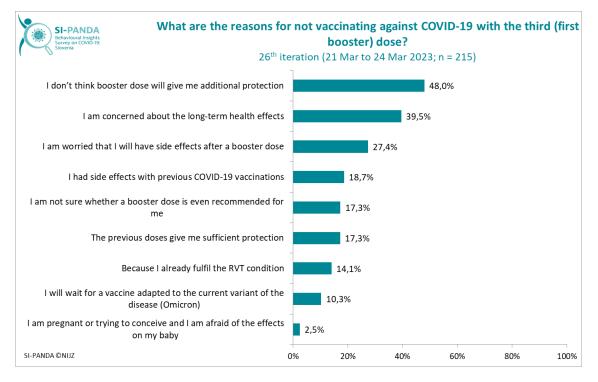


Figure 12: Reasons against vaccination with a fourth dose of COVID-19 vaccine among persons who received first two doses of COVID-19 vaccine and are not likely to be vaccinated with the fourth dose of COVID-19 vaccine, total. Note: Several answers were possible.

We asked people who had side effects after previous vaccinations against COVID-19 about them. Most of the people who had side effects after the vaccinations reported several problems at the same time. Most people reported headache, fatigue, muscle and joint pain, fever and pain at the injection site. To a lesser extent, breathing difficulties, vomiting and swollen lymph nodes were also reported. Serious complications after vaccination were rare. Even according to official data on adverse reactions after vaccination with the different COVID-19 vaccines available in Slovenia, the most commonly reported adverse events were generalised problems and changes at the site of vaccine injection, and nervous system problems. Fewer problems were associated with the musculoskeletal system, connective tissue and the gastrointestinal tract<sup>4</sup>.

Respondents who had already been vaccinated with at least one dose of the COVID-19 vaccine (73.8%) reported that their main reasons vaccinating were to protect their own health (52.9%), to prevent a more severe course of the disease or its consequences (52.6%), to protect the health of their loved ones (51.2%), to fulfil the RVT condition (47.7%), and to contribute to curbing the epidemic as soon as possible and returning to normal life (46.3%) (Figure 13).

<sup>&</sup>lt;sup>4</sup> https://www.cepimose.si/aktualno/nezeleni-ucinki-po-cepljenju/.

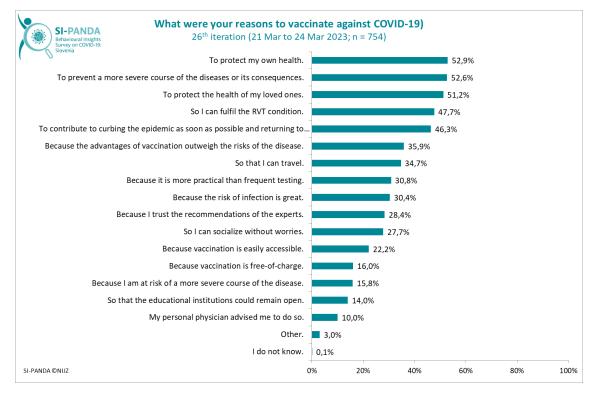


Figure 13: Reasons why vaccinated persons were vaccinated against COVID-19, total. Note: Several answers were possible.

In the 26<sup>th</sup> survey iteration, non-vaccinated persons (26.2%) were also asked for more detailed reasons why they did not intend to be vaccinated. As in previous iterations, the main reasons were concerns about side effects after vaccination (63.6%), concerns about the long-term impact on health (57.6%), the perception that the vaccine is not safe (50.8%), and because there is still too much pressure regarding vaccination (44.8%) (Figure 14).

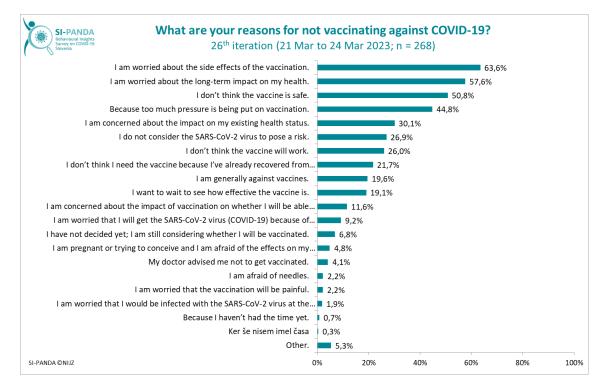


Figure 14: Reasons why unvaccinated persons are not vaccinated against COVID-19, total. Note: Several answers were possible.

# Vaccination against seasonal influenza and influenza virus infection

Data from the 26<sup>th</sup> survey iteration show that 8.4% of the respondents had received the influenza vaccine in 2022/23. The proportion of respondents who have received the influenza vaccine is statistically significantly higher among those aged 65–74 years (19.6%) compared to those aged 18–64 years (5.3%–7.9%). More people with at least one chronic disease (13.3%) were vaccinated against seasonal influenza compared to those without chronic diseases (5.5%). Statistically significantly more people who were vaccinated against COVID-19 received the influenza vaccine (10.6%) compared to those who were not vaccinated against COVID-19 (2.2%).

7.3% of people report having had influenza in the last six months. The oldest age group, 65–74 years, has the lowest number of people with influenza (1.7%) (Figure 15). Only less than a quarter of people who said they had the influenza also had the influenza virus confirmed in the laboratory.

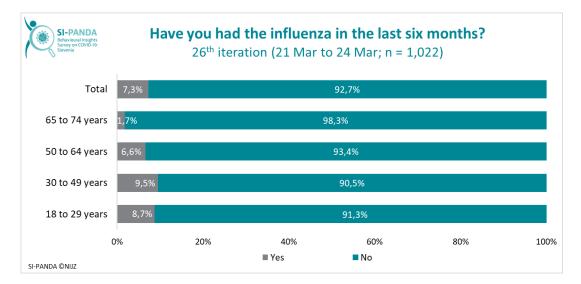


Figure 15: Persons who self-assessed having influenza in the last six months, total and by age groups.

# Compliance with isolation and quarantine and action in case of cold symptoms or respiratory infection

In the 26th survey iteration, if a person developed symptoms of a cold or respiratory infection, the highest proportion of respondents said they would self-test for SARS-CoV-2 (65.1%), followed by waiting for symptoms to develop (35.1%), self-isolation (21.9%), and calling their general physician (21.3%). Only 16.1% of respondents would inform their high-risk contacts of symptoms, 11.7% would go for SARS-CoV-2 testing at an official testing site, and 4.1% would do nothing. There are virtually no differences between genders and age groups in the number of people who would self-test, but there are differences between those who have or have not been vaccinated. Statistically significantly more vaccinated people would have undergone self-testing compared to unvaccinated people (or people who do not intend to be vaccinated). Statistically significantly more persons with at least one chronic disease (17.5%) would go for testing at an official testing site compared to persons without chronic diseases (8.3%). It appears that a higher proportion of those who combine working from home or at work (37.7%) would choose self-isolation, while there are no significant differences between the proportions of those who work from home (18.2%) or at work (16.6%) who would choose self-isolation. Among those who would do nothing, it appears that there are more people who have not been vaccinated against COVID-19 or do not intend to be vaccinated (8.4%) compared to those who have been vaccinated against covid-19 (2.6%) (Figure 16).

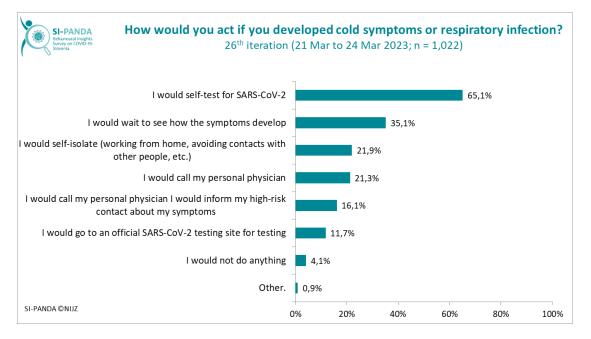


Figure 16: Acting in case of cold symptoms or respiratory infection, total. Note: Several answers were possible.

In the 26<sup>th</sup> survey iteration 63.4% of people answered in the affirmative to the question whether they would get tested if they had been in contact with someone who had tested positive for SARS-CoV-2 and had not developed symptoms themselves. despite not developing any symptoms themselves, statistically significantly more people who received at least one dose of the COVID-19 vaccine (68.0%) would be tested upon contact with a person who tested positive for SARS-CoV-2, compared to people who will not be vaccinated (50.7%). In the latest iterations of the survey, we note a slight downward trend in the proportion of people who would be tested, despite the fact that they would not develop symptoms (Figure 17). According to the 26<sup>th</sup> iteration of the

survey, the majority of respondents (93.7%) consistently adhered to the quarantine ordered at the time of infection. The proportion of persons who consistently adhered to the quarantine has remained stable at around 95% during the surveys carried out from September 2022 to February 2023

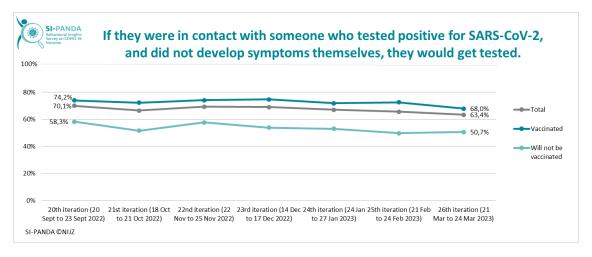
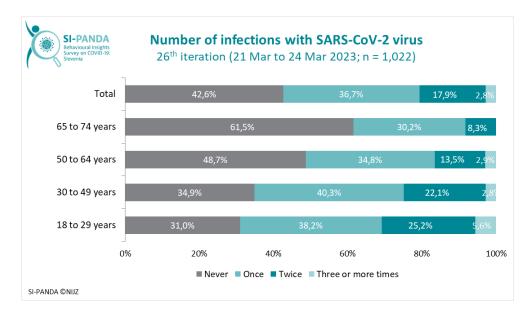


Figure 17: Testing in case of contact with a person who tested positive for SARS-CoV-2 virus, and not developing symptoms themselves, total and by vaccination status.

## Problems after recovering from infection with the SARS-CoV-2 virus – post-COVID syndrome or long COVID

Most people who contract COVID-19 recover completely within a few weeks of the onset of the disease. However, research shows that in some people individual problems may persist long after SARS-CoV-2 infection, or may disappear and reappear (same or different problems) several weeks or months after the initial recovery. Abroad, these problems have been called post-acute COVID-19, post-COVID syndrome or long COVID. It is more common among patients with a more severe course of the disease and older patients, but also occurs in those who have overcome a milder form of the disease and also among young adults who had no health problems before the infection<sup>5</sup>. The symptoms of long COVID are diverse: the most common are fatigue, shortness of breath, insomnia, problems with memory and concentration (the so-called "Brain fog"), heart palpitations (an unpleasant feeling of the heartbeat), pain in various body parts, diarrhoea, nausea, etc.<sup>6</sup>.

In the 26<sup>th</sup> iteration of the SI-PANDA survey, 42.6% of the respondents reported that they had never been infected with SARS-CoV-2 virus, 36.7% had been infected once, 17.9% reported that they had been infected twice, and 2.8% reported that they had been infected three or more times. In the 65–74 age group, the proportion of people who reported that they had not yet been infected with SARS-CoV-2 was 61.5%, while in the youngest age group, 31.0% of people had not yet been infected with SARS-CoV-2. The proportion of respondents who have never been infected with the SARS-CoV-2 virus is statistically significantly higher in people aged 50 and over (48.7%–61.5%) compared to younger people aged up to 50 (31.0%–34.9%) (Figure 18).



#### Figure 18: Number of infections with SARS-CoV-2 virus, total and by age groups.

The first or only infection with the SARS-CoV-2 virus in the majority (77.2%) was without symptoms or the symptoms were mild, 22.8% of persons reported a more severe course of the disease, which in some cases also required treatment in hospital. The course of the second

<sup>6</sup> Nalbandian, A., Sehgal, K., Gupta, A. et al. Post-acute COVID-19 syndrome. Nat Med 27, 601–15 (2021). https://doi.org/10.1038/s41591-021-01283-z.

<sup>&</sup>lt;sup>5</sup> Brackel, CLH, Lap, CR, Buddingh, EP, et al. Pediatric long-COVID: An overlooked phenomenon? Pediatric Pulmonology. 2021; 56: 2495–502. https://doi.org/10.1002/ppul.2552.

infection was also described by the vast majority (86.0%) as asymptomatic or mild, and 14.0% as more severe, but no person required hospital treatment. The course of the third infection is represented by less precise data, but we can see that the third infection also took place without or with mild symptoms in the majority (86.9%) (Figure 19).

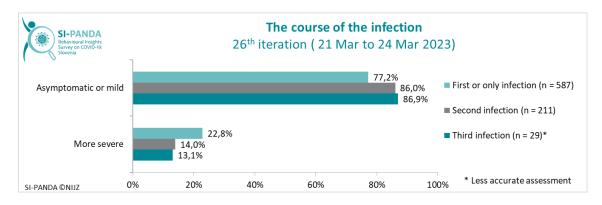


Figure 19: The course of the infection with SARS-CoV-2 virus among persons who recovered from COVID-19 at least once, by consecutive infection.

We were interested in whether the course of the infection depended on which variant of the SARS-CoV-2 virus the respondents were infected with. We ask the respondents in which month they were infected with the SARS-CoV-2 virus and thus obtain information in which time period they were infected. We further explain the scenario used to determine the prevalent variant of the SARS-CoV-2 virus upon infection. Since March 2020, when we discovered the first case of infection with the SARS-CoV-2 virus in Slovenia, several variants of the virus have been identified until today. According to National Laboratory of Health, Environment and Food (NLZOH), since the emergence of the virus in our country, there have been four predominant variants, which have occurred in different time periods7. Based on the NLZOH data on the predominant SARS-CoV-2 virus variants, four time periods were created according to the prevalent SARS-CoV-2 virus variant (B258.17 and previous variants, Alpha, Delta and Omicron). The period of the prevalent variant of the SARS-CoV-2 virus was determined when more than 60% of all studied infections were on the side of this particular variant. From the 20th iteration of the SI-PANDA survey onwards, respondents were asked about the month and year of infection (first or the only, second and third infection). Based on these data, we assumed that a single person infected with COVID-19 between March 2020 and March 2021 was infected at a time when B.258.17 and earlier variants were prevalent. People who were infected between April 2021 and June 2021 were classified in the Alpha variant group. People infected between July 2021 and December 2021 were classified in the group infected during the prevalent Delta variant. Those infected from January 2022 onwards were classified as infected at the time of the prevalent Omicron variant (Table 1).

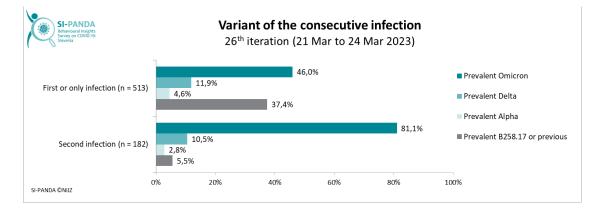
Table 1: Prevalent SARS-CoV-2 virus variant during the observation period from March 2020 to the present.

Observed period	Prevalent SARS-CoV-2 virus variant
March 2020 – March 2021	B.258.17 and previous
April 2021 – June 2021	Alfa
July 2021 – December 2021	Delta
January 2022 $\rightarrow$	Omicron

37.4% of persons were infected for the first time or only once during the period when the B.258.17 or previous variants were prevalent, 11.9% when the Delta variant was prevalent, and 46.0% of

<sup>&</sup>lt;sup>7</sup> https://www.nlzoh.si/objave/sledenje-razlicicam-sars-cov-2-61/.

respondents were infected for the first or only time, when the Omicron variant was prevalent. Only 4.6% of respondents were infected for the first time between April 2021 and June 2021, when the Alpha version was prevalent. For the second infection, the vast majority of respondents (81.1%) reported that they had been infected from January onwards when the Omicron variant was prevalent, 10.5% were infected for the second time when the Delta variant was prevalent, 2.8% when the Alpha variant was prevalent, and 5.5% when B.258.17 or previous variants were prevalent (Figure 20).

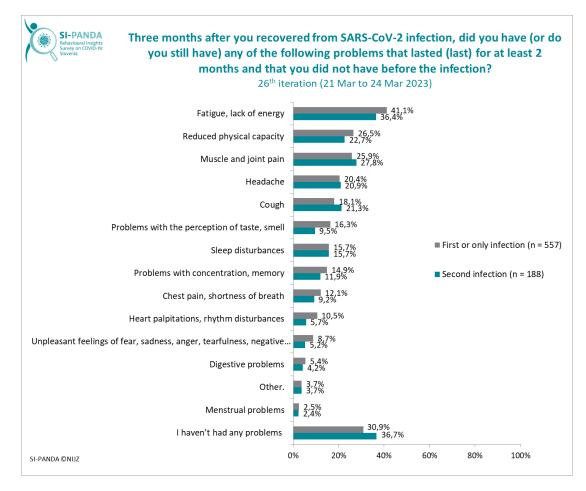


#### Figure 20: Prevalent SARS-CoV-2 virus variant, by consecutive infection.

According to the WHO, from 10 to 20% of people infected with the SARS-CoV-2 virus still have some health problems at least two months after infection, and one in ten recovered persons even after 12 weeks<sup>8</sup>. Thus, we were interested in whether the respondents had or have any of the listed problems three months after recovering from COVID-19, it was possible to report several problems.

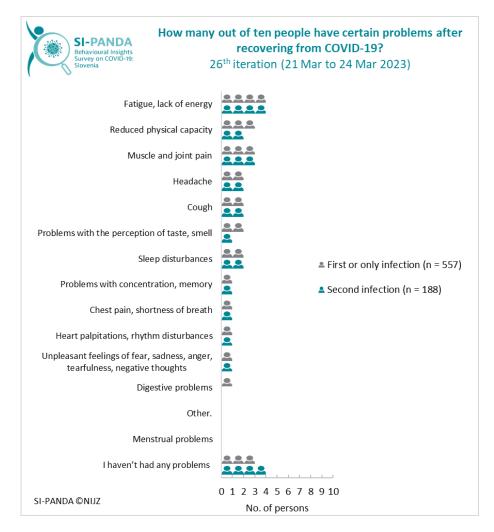
Approximately 70% of respondents infected with the SARS-CoV-2 virus stated that three months after recovering from first or only infection they still had or have certain problems that lasted or they last at least two months, and there was about 65% of such people after recovering from the second infection. The most common long-term problem reported both after the first (or only) and after the second infection is fatigue and lack of energy (41.1% after the first infection, 36.4% after the second). The second most common problems after recovering from the first or only infection, as well as after a second infection, were reduced physical capacity (26.5% after the first infection, 22.7% after the second) and muscle and joint pain (25.9% after the first infection, 27.8% after the second) (Figure 21).

<sup>8</sup> WHO Policy brief 39 In the wake of the pandemic, Preparing for Long COVID, https://apps.who.int/iris/bitstream/handle/10665/339629/Policy-brief-39-1997-8073-eng.pdf. https://www.who.int/europe/news-room/fact-sheets/item/post-covid-19-condition.





Four out of ten people who had recovered from COVID-19 reported fatigue and lack of energy after their first or only infection, and after their second infection. Three out of ten people reported reduced physical capacity after recovering from the first infection, and two out of ten people reported this problem after recovering from the second infection. After recovering from the first or only infection as well as the second infection, three out of ten people reported muscle and joint pain. Two out of ten people reported headache and cough as well as sleep disturbances after recovering from the first or only infection as well as the second infection. After recovering from the first or only infection, two people in ten reported problems with the perception of taste and smell, and after recovering from the second infection, one person in ten reported this problem. One in ten people had problems with concentration and memory, chest pain and shortness of breath, heart palpitations and rhythm disturbances, unpleasant feelings of fear, sadness, anger, tearfulness and negative thoughts after both the first and second infections. One in ten people had digestive problems after recovering from their first or only infection, and less than one in ten after recovering from their second infection. Less than one in ten people had menstrual problems both after recovering from the first and second infection. Three out of ten people haven't had any problems after recovering from their first infection and four out of ten people haven't had any problems after recovering from their second infection (Figure 22).





When asked how long the longest-lasting problem had lasted after the infection, just over half of the respondents answered that it lasted up to three months (52.8%), 30.6% had experienced such problems more than 6 months after the infection, and 16.6% from 3 to 6 months after the infection. 41.4% of people who stated that they have or had problems consulted a doctor due to the problems that occurred after recovering from SARS-CoV-2 infection. Statistically significantly more people with at least one chronic disease (47.9%) compared to people without chronic diseases (37.3%) consulted a doctor due to problems after recovering from the infection.

People who had problems after their first, only or second SARS-CoV-2 infections also reported whether they still had problems after their recovery. 34.8% of people still have problems after recovering from their first infection, and 43.0% of people still have problems after recovering from their second infection (Figure 23).

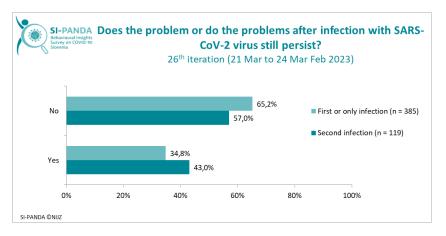


Figure 23: Problems that still persist after recovering from the first, only or second infection, by consecutive infection.

The problems that people had after recovering from the infections had the greatest impact on the area of performing leisure activities, as approximately 80% of people report that the problems after recovering from infections had impacted their leisure activities slightly, very or extremely. Approximately 70% of people stated that the problems slightly impacted their well-being and interpersonal relationships, care for home, family, children and household chores, as well as work and job (Figure 24).

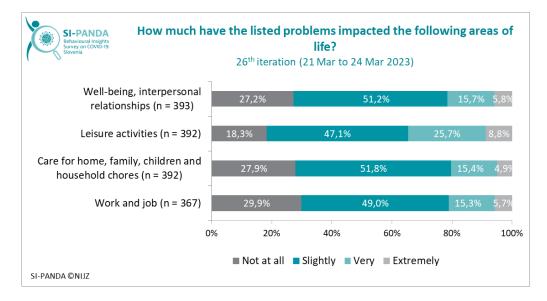


Figure 24: The impact of problems after recovering from SARS-CoV-2 infection on different areas of life among persons with at least one problem after recovering from the infection, total.

The consequences of recovering from SARS-CoV-2 virus infection can affect various areas of a person's life. On the one hand, these are mild and non-specific health problems, but on the other hand, they are often quite complex and still receive insufficient attention from the profession, both from a research and a clinical point of view.

Much is still unknown about the causes and long-term consequences of SARS-CoV-2 infection, but research is ongoing. It is already clear that post-COVID syndrome is relatively common and has a significant impact on an individual's ability to work and their daily life. All this can have economic consequences for the individual, their family and society as a whole.

In Slovenia, there are already specialized clinics for people who have long-term health problems after recovering from COVID-19. Most patients with problems after recovering from COVID-19 are treated in the outpatient department of the Infection Clinic. Patients with consequences of the diseases are cared for at the URI Soča and as part of the outpatient clinic for lung diseases and allergies at the University Clinical Centre Ljubljana. Rehabilitation of patients with long-COVID also takes place at the primary level, within Health Promotion Centres in Community Health Care Centres.

Most people with COVID-19 recover relatively quickly. Given that research shows that the risk of long-term health problems after SARS-CoV-2 infection is not so low, vaccination against COVID-19 is also important in this respect. In order to prevent and limit the transmission of infection, it is also important to follow the recommendations for health promotion and disease prevention in the current epidemiological situation since no one is safe from the consequences of an infection.

## **Quality of life**

Also in the 26<sup>th</sup> iteration of the SI-PANDA survey, we measured the quality of life of individuals using the SF-36 questionnaire, which measures the physical and mental components of quality of life, and in total consists of eight quality of life<sup>9</sup> indicators<sup>10</sup>, where a higher score means a better quality of life, and the maximum possible score is 100. Physical functioning scores the highest among all the quality of life components, and is better for younger people aged 18–49 years (average 88.8–93.9 points) compared to older people aged 65–74 years (average 75.7 points). Other components of quality of life that scored higher were social functioning (81.4 points), emotional problems (79.2 points), limitations in physical capacity (77.6 points) and body pain (75.4 points). People aged 18 to 29 have the lowest average scores for social functioning, mental health and vitality components. People aged 65 to 74 years have the lowest average scores for the physical fitness, emotional problems, limitations in physical capacity and body pain components. General health (65.9 points), mental health (64.8 points) and vitality (53.8 points) are among the lowest scoring quality of life indicators (Figure 25).

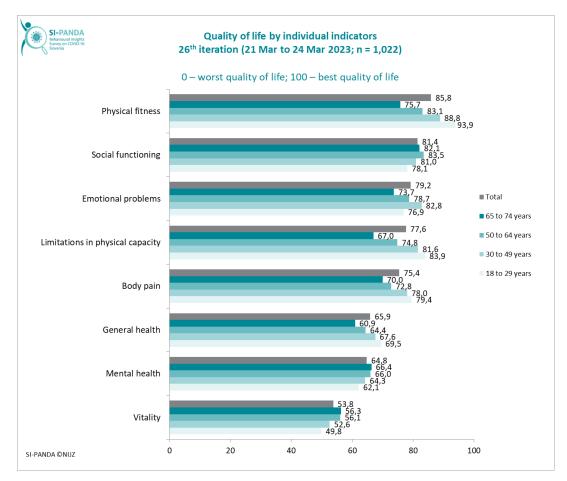


Figure 25: Quality of life shown in eight indicators, total and by age groups.

<sup>&</sup>lt;sup>9</sup> Bren, A., Logar Zakrajšek, B. (2014). Kakovost življenja bolnikov s končno ledvično odpovedjo (KLO). V 30-letnica kontinuirane ambulantne peritonealne dialize v Sloveniji (str. 5–18). Ljubljana : SZD – Slovensko nefrološko društvo.
<sup>10</sup> Translation of indicators summarised from:

https://www.researchgate.net/publication/323137074\_Pilotna\_raziskava\_psihometricnih\_lastnosti\_vprasalnikov\_SF-36v2\_in\_ESRD-SCL-TM\_za\_merjenje\_z\_zdravjem\_povezane\_kakovosti\_zivljenja\_bolnikov\_po\_presaditvi\_ledvice/fulltext/5a823a0f45851504fb3558fd/Pilotna -raziskava-psihometricnih-lastnosti-vprasalnikov-SF-36v2-in-ESRD-SCL-TM-za-merjenje-z-zdravjem-povezane-kakovosti-zivljenja-bolnikov-po-presaditvi-ledvice.pdf?origin=publication\_detail.

We also checked the quality of life in terms of the current presence of problems after recovering from COVID-19. Through all eight indicators, the quality of life is statistically significantly higher in persons who no longer have problems or symptoms after recovering from COVID-19. People who still have problems or symptoms after recovering from the disease rate their vitality and general health the worst (Figure 26).

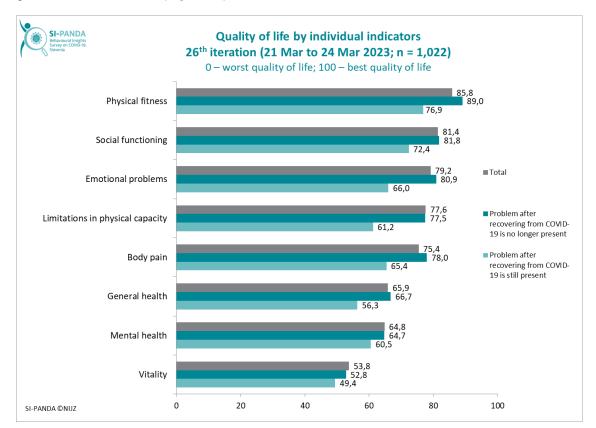
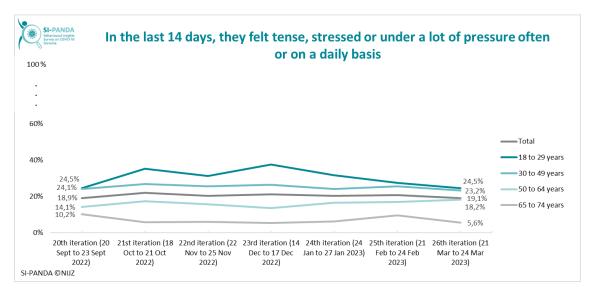


Figure 26: Quality of life by individual indicators, total and by current presence of problems after recovering from COVID-19, among respondents who have at least once recovered from COVID-19 and had at least one problem after recovering from COVID-19.

## Experiencing stressful events and coping with them

Stress and stressful events are a major challenge in our society due to the increasing frequency of stressful experiences and the associated consequences on health and overall quality of life. At the same time, it is important to bear in mind that the experience of stress varies greatly between individuals - what causes distress for one person may be a stimulus for another, triggering positive emotions and enhancing motivation<sup>11</sup>. However, when we talk about stressful events, we are usually describing unwanted, unexpected or uncontrollable events that have negative consequences for health and lifestyle<sup>12</sup>. The magnitude of the impact of a stressful event on health depends on the type and duration of the event, and on the individual's ability to cope with and manage the event<sup>13</sup>. Circumstances where exposure to stressful events is high and coping capacity is low are described as risky stress behaviour.

The proportion of adults who feel stressed or under a lot of pressure often or every day is lowest among older people (Figure 27). The proportion of adults aged 65–74 is statistically significantly lower than the proportion of other adults who experience stress frequently. The differences between the remaining age groups were small in the 26<sup>th</sup> survey iteration. There has been a decline in the proportion of younger adults who are often stressed since the 23<sup>rd</sup> iteration of the survey. Women were more likely to report experiencing stress often or on a daily basis, while no differences were found in the frequency of experiencing stress according to educational attainment.



## Figure 27: The frequency of experiencing stress in the last 14 days, total and by age group, from 20<sup>th</sup> to the 26<sup>th</sup> survey iteration.

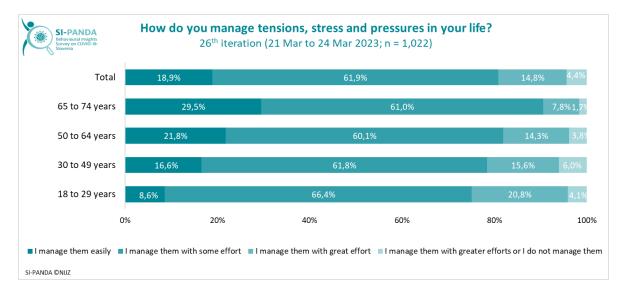
Most respondents (61.9%) manage tension, stress and pressure with some effort (Figure 28). The lowest proportion of adults who manage stress easily is among younger adults aged 18–29. This proportion is statistically significantly lower compared to other age groups. At the other end of the stress management spectrum, a similar picture emerges for the proportion of adults who manage stress with greater effort. The lowest, and statistically significantly different from the other age groups, proportion of those who manage stress with greater effort is found among adults aged 65–74. The number of people experiencing severe stress management problems or not

<sup>&</sup>lt;sup>11</sup> Folkman, S., & Moskowitz, J. T. (2004). Coping: Pitfalls and promise. Annu. Rev. Psychol., 55, 745–74.

<sup>&</sup>lt;sup>12</sup> Thoits, P. A. (2010). Stress and health: Major findings and policy implications. Journal of health and social behavior, 51, S41-S53.

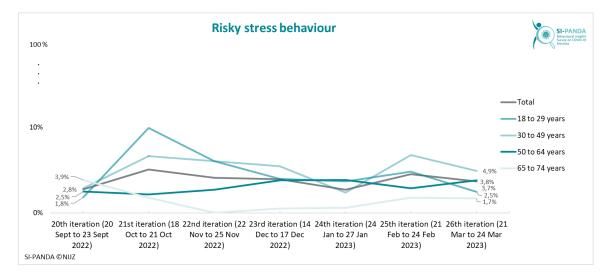
<sup>&</sup>lt;sup>13</sup> Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. Springer publishing company..

managing stress is too low to identify significant differences between age groups. However, there is an indication of a higher prevalence of problems in those under 50 years of age.



#### Figure 28: Managing tensions, stress and pressures, total and by age groups.

In the past seven iterations of the survey, the overall proportion of adults expressing risky stress behaviours ranged from 2.7% in the 24<sup>th</sup> iteration to 5.1% in the 21<sup>st</sup> iteration (Figure 29). Due to the low number of individuals with risky stress behaviours in each age group, it is not possible to reliably classify the prevalence by age, but there appears to be a lower prevalence of risky stress behaviours in adults aged 65–74 years. In the 26<sup>th</sup> survey iteration, more risky stress behaviours were observed among adults with secondary education or less (4.7%) compared to adults with post-secondary education or more (2.6%).





## Satisfaction with life

Satisfaction with life is a fundamental aspect of well-being and an important indicator of overall health. The concept refers to the subjective evaluation of one's life as a whole, including areas such as interpersonal relationships, work and personal growth. Research has shown that higher levels of satisfaction with life are associated with better physical and mental health and a reduced risk of developing disease and premature mortality<sup>14,15</sup>.

In the 26<sup>th</sup> iteration of the survey, we find that 59.8% of adults are satisfied with their life, while 33.0% are dissatisfied with their life. No statistically significant differences in life satisfaction were observed between the age groups of adults. There is a difference when comparing satisfaction with life between the sexes, with men being slightly more satisfied with life (63.6%) than women (55.8%). Although women were more likely to be dissatisfied with their lives (35.0%) than men (31.1%), this difference did not reach the level of statistical significance. Among the groups of adults who are dissatisfied with their lives, the difference between those with secondary education or less and those with higher education or more stands out. Among the less educated, 38.6% are dissatisfied with their lives, compared with 26.6% of the more educated.

There are large differences in satisfaction with life among adults according to their experience of mental health problems (Figure 30). Among adults experiencing problems indicating an increased likelihood of depressive disorder, 14.7% are satisfied with their life, while the proportion of adults without mental health problems who are satisfied with their life is 72.4%. Satisfaction with life is an important aspect of mental well-being and is an aspect of overall mental health that is closely related to, yet independent of, mental distress<sup>16</sup>. The data obtained in the 26th iteration of the survey can be understood accordingly. The presence of mental health problems does not preclude the experience or presence of positive mental health characteristics, since among people without mental health problems there are also those who are satisfied with their lives. There is also a clear correlation between the two concepts, as the proportion of people who are dissatisfied with their lives is much higher among those experiencing mental health problems.

<sup>&</sup>lt;sup>14</sup> Feller, S., Teucher, B., Kaaks, R., Boeing, H., & Vigl, M. (2013). Life satisfaction and risk of chronic diseases in the European prospective investigation into cancer and nutrition (EPIC)-Germany study. PloS one, 8(8), e73462.

<sup>&</sup>lt;sup>15</sup> Martín-María, N., Miret, M., Caballero, F. F., Rico-Úribe, L. A., Steptoe, Á., Chatterji, S., & Ayuso-Mateos, J. L. (2017). The impact of subjective well-being on mortality: a meta-analysis of longitudinal studies in the general population. Psychosomatic medicine, 79(5), 565–75.

<sup>&</sup>lt;sup>16</sup> Iasiello, M., & Van Agteren, J. (2020). Mental health and/or mental illness: A scoping review of the evidence and implications of the dualcontinua model of mental health. Evidence Base: A journal of evidence reviews in key policy areas, (1), 1–45.

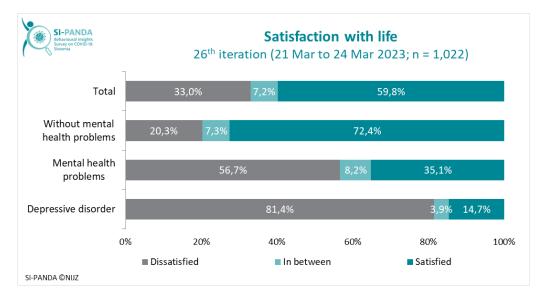


Figure 30: Satisfaction with life, total and by the presence of mental health problems.



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