Data Descriptor

COVID-19 Lockdown Effects on Mood, Alcohol Consumption, Academic Functioning, and Perceived Immune Fitness: Data from Young Adults in Germany

Anna Helin Koyun [1] , Pauline A. Hendriksen [2] , Pantea Kiani [2] , Agnese Merlo [2] , Jessica Balikji [2] , Ann-Kathrin Stock [1,3] and Joris C. Verster [2,4,*]

1 Cognitive Neurophysiology, Department of Child and Adolescent Psychiatry, Faculty of Medicine of the TU Dresden, University of Dresden, 01307 Dresden, Germany
2 Division of Pharmacology, Utrecht Institute for Pharmaceutical Sciences, Utrecht University, Universiteitsweg 99, 3584CG Utrecht, The Netherlands
3 Biopsychology, Department of Psychology, School of Science, TU Dresden, 01062 Dresden, Germany
4 Centre for Human Psychopharmacology, Swinburne University, Melbourne, VIC 3122, Australia
* Correspondence: j.c.verster@uu.nl; Tel.: +31-30-253-6909

Abstract: Recently, a study was conducted in the Netherlands to evaluate the impact of the coronavirus disease (COVID-19) pandemic and its associated lockdown periods on academic functioning, mood, and health correlates, such as alcohol consumption. The Dutch study revealed that lockdowns were associated with significantly poorer mood and reductions in perceived immune fitness. Overall, a reduction in alcohol consumption during lockdown periods was shown. Academic functioning in terms of self-reported performance was unaffected. However, a significant reduction in interactions with other students and teachers was reported. However, there was considerable variability among students; both increases and reductions in alcohol consumption were reported, as well as both improvements and poorer academic functioning during periods of lockdown. The aim of the current online study was to replicate these findings in Germany. To achieve this, a slightly modified version of the survey was administered among young adults (aged 18 to 35 years old) in Germany. The survey assessed possible changes in self-reported academic functioning, mood, and health correlates, such as smoking and alcohol consumption, perceived immune functioning, and sleep quality during periods of lockdown as compared to periods with no lockdowns. Retrospective assessments were made for five periods, including (1) 'BP' (the period before the COVID-19 pandemic), (2) 'L1' (the first lockdown period, March–May 2020), (3) 'NL1' (the first no-lockdown period, summer 2020), (4) 'L2' (the second lockdown, November 2020 to May 2021), and (5) 'NL2' (the second no-lockdown period, summer 2021). This article describes the content of the survey and the corresponding dataset. The survey was completed by 371 participants.

Dataset: The dataset is submitted as a Supplementary File.

Dataset License: CC0.

Keywords: COVID-19; lockdown; mood; alcohol consumption; academic performance; social interactions; perceived immune fitness; sleep; quality of life; Germany

1. Summary

In March 2020, the World Health Organization (WHO) officially announced the spread of the infectious coronavirus disease 2019 (COVID-19) to be a pandemic. Since then, numerous countries across the world have implemented so-called lockdowns to contain the spread of the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) and its later variants. While the implemented measures and periods of lockdown vary

in type, amount, and strictness, the core idea was to minimize (physical) contact among the members of the general population and thus decrease associated risks of infection. For many countries, a nationwide or regional lockdown involved the (temporary) closure of educational institutions, non-essential businesses, travel restrictions, and in some cases, even partial/complete closures of country borders. As a consequence, face-to-face teaching was mostly prohibited for a large share of universities around the world. In order to continue educational activities, universities were forced to switch to emergency online/remote teaching and learning options.

Despite the efforts toward creating a normal university experience, the academic and overall lifestyle of students has been massively affected during the COVID-19 pandemic, especially during periods of lockdown [1–4]. So far, research investigating the students' perspective on their academic performance during remote teaching periods has yielded different results. Whereas some studies indicate improved focus, attention, and performance [5], others report student dissatisfaction and lower performance due to increased distractibility, stress, and reduced focus [6–8].

Nevertheless, education and vocation/work were far from being the only affected domains in life, as many have also suffered the consequences of social distancing and associated feelings of loneliness and disconnection in their private life as well. While social distancing measures were successful in reducing the number of COVID-19 infections, the sudden interventions often drastically changed our social, personal, and occupational life (as compared to before the pandemic). In line with this, several reports indicate that the global prevalence of mental health issues increased during the COVID-19 pandemic [9,10]. Therefore, it comes as no surprise that the COVID-19 pandemic has been associated with negative emotions of varying degrees among different age groups globally [11]. Studies from the early phases of the pandemic indicated that being younger in age [12,13], a university student [14], and female sex [15] are risk factors for experiencing increased distress in reaction to lockdown measures. Adding to this evidence, young adults have recently been reported to experience more negative emotional and psychological reactions during the COVID-19 pandemic and associated restrictions as compared to other age groups [16–19]. Although young adults may be the least susceptible to experiencing severe COVID-19 symptoms, this particular age group is the most vulnerable to experiencing mental health issues, even before the pandemic [20]. The sudden pandemic-associated changes left many young adults dealing with concerns, confusion, and uncertainty about their finances and future. Recent evidence in the context of the COVID-19 pandemic indicates that an individual's ability to control what they pay attention to and what they ignore (i.e., attentional control) might be a protective factor against developing maladaptive psychological outcomes [21].

Around the globe, people developed different ways to cope with the substantial decline in social contacts and leisure opportunities during periods of lockdown. Despite the emotional toll, some young adults used the opportunity to invest more time in their physical and mental health or engaging in positive coping strategies such as physical exercise, adopting a healthy diet, meditation, etc. [22–24]. Likewise, the frequency of engaging in other, potentially more harmful health-related coping mechanisms, such as alcohol consumption and smoking, has also been shown to be affected by the COVID-19 pandemic and associated lockdowns. Regarding changes in alcohol consumption during COVID-19 lockdowns, current evidence is rather heterogeneous, as both increases in the frequency of alcohol consumption [25,26] and no change in the frequency of alcohol use [27] during the pandemic have been reported. Furthermore, decreases in the frequency of heavy episodic drinking [27,28] and overall alcohol consumption among the general population could be observed [27,29]. Similarly, adult smokers reported both smoking more [30,31] and less [31] during the COVID-19 pandemic and associated lockdowns. Research further showed that immune fitness, defined as the inbuilt capacity to adapt to external health challenges by establishing, maintaining, and regulating an appropriate immune response to prevent or resolve disease, is an important factor determining health, including the

presence and severity of COVID-19 symptoms [32,33]. Therefore, assessments of past year's immune status and perceived immune fitness were made in the current study.

1.1. The COVID-19 Pandemic in Germany

Similar to many other countries around the world, all 16 (partly sovereign) federal states in Germany implemented contact restrictions and social distancing measures in March 2020, leading to a nationwide lockdown in order to contain the spread of the SARS-CoV-2 virus. The restrictions included the closing of educational and daycare institutions (e.g., kindergartens, schools, universities, etc.), as well as closing social/non-essential facilities such as cafes, restaurants, gyms, and other social/cultural places. Only essential public places such as supermarkets, pharmacies, and hospitals remained open in compliance with strict hygiene concepts (e.g., only a limited number of consumers per store, masks mandates, etc.). With the first lockdown in March 2020, public universities in Germany shifted the entire curriculum to a remote/online-teaching format (until fall semester 2021/22, i.e., end of March 2022) and are often in hybrid teaching mode as of summer 2022. During the first period of lockdown (March–May 2020), strict contact restrictions applied; namely, people were only permitted to be in public by themselves, with persons living in the same household, or with one other individual not living in the same household. Furthermore, people from high-risk groups (e.g., the elderly, people with pre-existing medical conditions, etc.) or those who might have been infected were placed in often mandatory quarantine. Throughout the first lockdown, people living in Germany were requested to keep the number of social contacts as low and constant as possible. Moreover, a minimum social distance of 1.5 m applied in all public places.

As the number of COVID-19 infections in Germany slowly decreased, lockdown measures were relaxed and gradually removed until the late summer of 2020. During this period, cafes, restaurants, and retail stores could reopen under adherence to hygiene and social distancing concepts. However, universities and other campus facilities remained closed, and online/distance education was continued. With the beginning of the holiday season in Germany, COVID-19 infections increased again. Consequently, most of the public health measures which had been implemented during the first lockdown were re-introduced nationwide in November 2020 and remained in place until May 2021 (with some regional differences). Toward summer 2021, the number of infections decreased slowly, and restrictions were gradually removed.

1.2. Aim of the Study

The COVID-19 pandemic and associated lockdown periods had a significant impact on various aspects of daily life. Therefore, the aim of the current study was to contribute to these lines of research and examine the possible effects of the COVID-19 lockdowns and associated changes in mood, alcohol consumption, academic functioning, and perceived immune fitness on young adults in Germany. Additionally, we set out to investigate the existence of a relationship between the assessed variables and the participants' ability to control/focus attention.

For this purpose, a retrospective online survey was conducted covering the following five time periods (see Figure 1): (1) the period before COVID-19 ('BP', the year 2019); (2) the first lockdown ('L1', March–May 2020); (3) first period of no lockdown ('NL1', summer 2020); (4) the second lockdown ('L2', November 2020–May 2021); (5) second period of no lockdown ('NL2', summer 2021). Obtaining a better understanding of the changes in (mental) health, academic performance, and overall lifestyle that young adults have faced during the COVID-19 pandemic in Germany might shed light on critical areas that require more attention when refining policies affecting this particular age group in future (health) crises. This article describes the survey and its content. To this extent, the study replicated and extended a recent study on the same topic which had been conducted in the Netherlands [34–36].
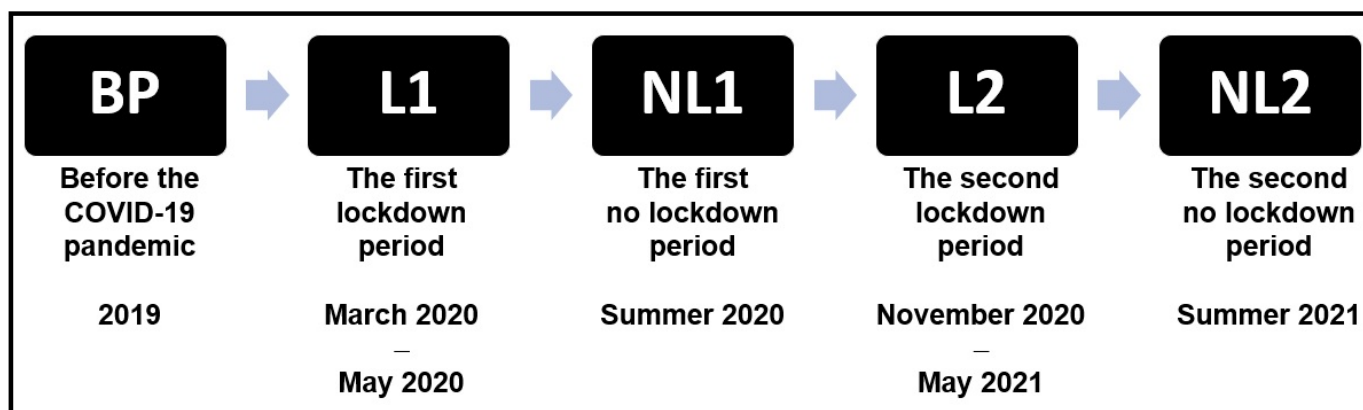
Figure 1. Assessment periods. Abbreviations: BP = the period before COVID-19, L1 = the first lockdown, NL1 = first period of no lockdown, L2 = the second lockdown, NL2 = second period of no lockdown.

This data descriptor article describes the survey content and the dataset, which has been added as Supplementary Material. Several forthcoming publications are currently in preparation. In addition, researchers may use the dataset for additional analyses.

2. Data Description

2.1. Informed Consent

The first page of the survey provided potential participants with all necessary background information, including the aim of the study, the study procedure, and how much time it takes to complete the survey. Notes on data protection and contact details of the researchers were provided. Potential participants could give electronic informed consent if they were willing to participate in the study. Those who provided informed consent were given a unique participant identification number, labeled in the dataset as Subject_ID in column 1.

2.2. Demographic Data

The first question (column 2 of the dataset) concerned the professional status of the participant. They could choose between (1) bachelor's student, (2) master's student, (3) Ph.D. student, (4) employee, and (5) currently unemployed. The second question (column 3 of the dataset) inquired about the participant's age (in years), and the third question (column 4 of the dataset) about sex (male or female). The fourth question concerned ethnicity (column 5 of the dataset). Answering possibilities were (1) German, (2) Western migration background (people descending from European countries, excluding Turkey), (3) North America, Oceania, Indonesia, or Japan, (4) non-Western migration background (individuals from Africa, Latin America, and Asia—including Turkey, but excluding Indonesia and Japan), and (5) other. Question five asked about living situations (column 6 of the dataset). Answering possibilities were (1) I live alone, (2) I live together with other students/people in a home with shared facilities, and (3) I live together with family. Question 6 concerned their SARS-CoV-2 status between 2019 and May 2021. Answering possibilities included (1) I did not have corona and/or was tested negative, (2) I tested positive for corona, and I have been hospitalized, (3) I tested positive for corona, but I did not feel (very) sick, or (4) I tested positive for corona, and I was sick at home. The outcomes of question 6 are listed in column 7 of the dataset.

2.3. Immune Status Questionnaire (ISQ)

Question 7 comprised the Immune Status Questionnaire (ISQ; Ref. [37]) and assessed the immune status of participants during the pandemic, i.e., for the period from March 2020 to September 2021. The seven items of the ISQ included 'common cold', 'diarrhea', 'sudden

high fever', 'headache', 'muscle and joint pain', 'skin problems (e.g., acne and eczema)', and 'coughing'. For each of those items, participants rated on a 5-point Likert scale how frequently they had experienced each symptom. The response options were (1) 'never', (2) 'sometimes', (3) 'regularly', (4) 'often', and (5) '(almost) always'. The scores on each item are listed in columns 7 to 14 of the dataset. The overall ISQ score, which was computed after recoding [37], is listed in column 15. The overall ISQ score ranges from 0 (poor) to 10 (excellent). Of note, two additional items were included in the survey, i.e., 'slowly healing wounds' and 'wound infection'. These were rated identically to the ISQ items and are listed in the dataset in columns 16 and 17.

2.4. Mood, Being Active, and Quality of Life

Seven mood items were assessed. They comprised 'stress', 'anxiety', 'depression', 'fatigue', 'loneliness', 'optimism', and 'happiness' (question 8). Each item was scored on a scale ranging from 0 (absent) to 10 (extreme). In a comparable manner, 'being active' was additionally assessed (question 9). The items were scored for the period (1) 'BP' (the period before the COVID-19 pandemic), (2) 'L1' (the first lockdown period, March–May 2020), (3), 'NL1' (the first no lockdown period, summer 2020), (4) 'L2' (the second lockdown, November 2020 to May 2021), and (5) 'NL2' (the second no lockdown period, summer 2021).

For the same time periods and using the same scale, 'quality of life' was scored (question 10). Quality of life was assessed on a scale ranging from 0 (poor) to 10 (excellent). The use of these single-item scales has been validated previously [38]. In the dataset, mood items are listed in columns 18 to 52, ratings on 'being active' are listed in columns 53 to 57, and quality of life is listed in columns 58 to 62.

2.5. Perceived Immune Fitness and Sleep Quality

Perceived immune fitness (question 11) and sleep quality (question 12) were assessed using single-item scales that ranged from 0 (very poor) to 10 (excellent). The use of these 1-item scales has been validated previously [39,40]. The items were scored for the period (1) 'BP' (the period before the COVID-19 pandemic), (2) 'L1' (the first lockdown period, March–May 2020), (3) 'NL1' (the first no lockdown period, Summer 2020), (4) 'L2' (the second lockdown, November 2020 to May 2021), and (5) 'NL2' (the second no lockdown period, Summer 2021). In the dataset, perceived immune fitness is listed in columns 63 to 67, and sleep quality is listed in columns 68 to 72.

2.6. Academic Functioning

Students were asked to rate 10 items on academic functioning (question 13), including 'general performance quality', 'amount of time invested in study', 'study grades/output', 'academic achievement/amount of knowledge gained', 'reading articles/text books', 'writing assignments', 'contact with teachers or supervisors', 'interactions with other students', 'balance study-private life', and 'the extent you enjoy being a student (role-satisfaction)'. Changes during lockdown (compared to before the COVID-19 pandemic) were rated on a scale ranging from −5 (extremely worse) to +5 (extremely improved), around a midpoint of 0 (unchanged). In the dataset, the academic functioning items are listed in columns 73 to 82.

2.7. Attention Control Scale (ACS)

Differences in attentional control skills were assessed with the 20-item self-report Attentional Control Scale (ACS [41]. The ACS measures a person's ability to focus, switch, and flexibly divide attention between tasks. Therefore, on a 4-point scale (1 = almost never, 2 = sometimes, 3 = often, and 4 = always), participants were asked to rate the frequency of each statement (e.g., "I have a hard time concentrating when I am excited about something") applies. Higher total ACS scores indicate a better ability to control attention. In addition to the ACS total score, two subscales can be computed. These assess attentional focusing (9 items) and attention shifting (11 items). In the dataset, the ACS

items are listed in columns 83 to 102. The ACS total score, as well as the attention focusing and attention shifting sub-scores, are listed in columns 103, 104, and 105, respectively.

2.8. Smoking

Question 15 concerned smoking behavior. The number of smoking days per week (answering possibilities 0 to 7 days) and the number of cigarettes smoked per day (answering possibilities 0 to >100) were assessed for the period (1) 'BP' (the period before the COVID-19 pandemic), (2) 'L1' (the first lockdown period, March–May 2020), (3) 'NL1' (the first no lockdown period, summer 2020), (4) 'L2' (the second lockdown, November 2020 to May 2021), and (5) 'NL2' (the second no lockdown period, summer 2021). In the dataset, data on smoking are listed in columns 106 to 115.

2.9. Alcohol Consumption and Hangovers

Question 16 concerned alcohol consumption. All questions were answered for the period (1) 'BP' (the period before the COVID-19 pandemic), (2) 'L1' (the first lockdown period, March–May 2020), (3) 'NL1' (the first no lockdown period, summer 2020), and (4) 'L2' (the second lockdown, November 2020 to May 2021). The 'average number of alcoholic drinks per week' that participants consumed (answer possibilities 0 to >100) and the 'number of drinking days per week' (answer possibilities 0 to 7 days) were reported. Guidance was provided on serving sizes and how to convert these into standard alcoholic drink sizes (units). For liquor and mixed drinks, one shot equaled one unit. One glass of beer (250 mL) equals one glass of wine and one shot of liquor. One bottle of wine (750 mL) equals 6 units, and one bottle of liquor (750 mL) equals 20 units. In the dataset, the number of alcoholic (standard) drinks consumed per week are listed in columns 116 to 119, and the number of drinking days per week in columns 120 to 123. Participants also provided the number of days per month they consumed more than eight alcoholic drinks (question 21). In the dataset, the outcome of this question is listed in columns 124 to 127.

Participants reported 'the number of hangovers per month' that they experienced (answering options from 0 to 31 days). In the dataset, hangover frequency is reported in columns 128 to 131. The average hangover severity was rated on a scale ranging from 0 (absent) to 10 (extreme) (question 20) [42]. In the dataset, hangover severity is listed in columns 132 to 135.

2.10. Healthy Diet Scale (HDS)

The Healthy Diet Scale (HDS) is a single-item scale used to estimate the percentage of the daily diet that is considered to be healthy by the participant (question 22) [43]. The scale ranges from 0% (unhealthy) to 100% (healthy), in steps of 10%. To make it easier for the participants to give an accurate estimation, pictures and examples of healthy and unhealthy food items are included in the scale. The HDS was completed for the month before the survey was held. In the dataset, the outcome is listed in column 136.

3. Methods

An online survey was conducted between mid-November 2021 and the end of March 2022. Potential participants were invited to fill out the survey via mail and printed flyers, mainly distributed in the city of Dresden. The study was reviewed and approved by the Ethics Committee of the Medical Faculty of the TU Dresden (approval code: SR-EK-8012020, date of approval: 27 September 2021). All participants provided electronic informed consent, and the study was conducted in accordance with the Declaration of Helsinki of 1975 (http://www.wma.net/en/30publications/10policies/b3/, assessed: 11 August, 2022), revised in 2008. As an incentive to participate in the study, individuals could enter a prize draw with the chance to win one of four Amazon gift vouchers, each worth EUR 25.

3.1. Participants and Sample Size

Participants of the study were individuals in the age range of 18 to 35 years. Participants were included in the dataset if they were either an enrolled student (bachelor, master, or Ph.D. candidate) or currently employed. Data from individuals were excluded if they provided only demographics or if the data were judged unreliable. No power analysis was conducted for the study. The goal was to achieve a sample size that was comparable to a similar study that was previously conducted in the Netherlands [34].

3.2. Data Collection

Students were invited via university email or printed flyers to participate in the study. The survey was conducted using Lime Survey (open-source survey tool; Version 5.0.11+210727, Hamburg, Germany: LimeSurvey GmbH). Participants could choose to complete the survey in English or German language. On average, it took 12.6 min to complete the survey.

3.3. Data Handling

Raw data were downloaded in an Excel format and recoded if necessary. Subsequent statistical analyses were carried out using SPSS (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY, USA: IBM Corp.). A total of $n= 434$ individuals started the survey. Data from several individuals were excluded for the following reasons: $n = 21$ individuals that did not provide informed consent or provided no data; $n = 11$ participants answered only questions on demographics; $n = 56$ individuals were outside the age range of 18 to 35 years; $n = 28$ individuals that were neither (Ph.D.) students or employees (i.e., unemployed). Finally, data of $n = 1$ participant was excluded because this data was judged unreliable (e.g., the person reported 20 out of 7 drinking days per week). Eventually, a total of $n = 317$ participants were included in the final dataset. This dataset is attached as Supplementary Material.

4. User Notes

The dataset is available as SPSS. sav file (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 28.0. Armonk, NY, USA: IBM Corp.) as a supplementary file to this manuscript. The variables are listed in the column 'Name', and a description is given in the 'label' column. If questions had multiple answers to choose from, these are listed in the column 'Values'. Abbreviations in the variable names refer to the period that was assessed. They include (1) 'BP' (the period before the COVID-19 pandemic), (2) 'L1' (the first lockdown period, March–May 2020), (3) 'NL1' (the first no lockdown period, summer 2020), (4) L2 (the second lockdown, November 2020 to May 2021), and (5) 'NL2' (the second no lockdown period, summer 2021). Not all participants completed the entire survey. An overview of the questions and completion rate is given in Table 1. In case of missing data, data cells were left empty.

Table 1. Number of completed assessments for each question.

Question	Assessed Variables	Number of Items	Number of Completers
1	Professional status	1	371
2	Age	1	371
3	Sex	1	371
4	Ethnicity	1	371
5	Living situation	1	371
6	SARS-CoV-2 status	1	371
7	ISQ	7 (+2)	371
8	Mood	10	285
9	Being active	1	282
10	Quality of life	1	270

Table 1. *Cont.*

Question	Assessed Variables	Number of Items	Number of Completers
11	Perceived immune fitness	1	270
12	Sleep quality	1	270
13	Academic functioning	10	267
14	Attention Control Scale	20	251
15	Smoking	2	248
16	Alcohol consumption	5	140
17	Healthy Diet Scale	1	244

Number of completers are listed.

Supplementary Materials: The following are available online at https://www.mdpi.com/article/10.3390/data7090125/s1, dataset.

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Institutional Review Board Statement: The studies were conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of the Medical Faculty of the TU Dresden (approval code: SR-EK-8012020, date of approval: 27 September 2021).

Informed Consent Statement: Electronic informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data are available as Supplementary Material. The dataset is licensed under CC0, which means that it is open data free for anyone to use, reuse, and distribute for both commercial and non-commercial purposes. In the event of using the dataset, it is appreciated if the current data descriptor article is cited.

Conflicts of Interest: Over the past 3 years, J.C.V. has acted as a consultant/advisor for KNMP, Mentis, Red Bull, Sen-Jam Pharmaceutical, and Toast! The other authors declare no conflict of interest.

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