QUALITY OF LIFE POST-PANDEMIC: AN INVESTIGATION INTO THE HEALTH IMPACT OF LONG COVID AND FUTURE EDUCATIONAL PROSPECTS

QUALITÀ DELLA VITA POST PANDEMIA: UNA INDAGINE SULL'IMPATTO SULLA SALUTE DEL LONG COVID E PROSPETTIVE EUDCATIVE FUTURE

Santolo Ciccarelli[1]
Università degli studi di Napoli Parthenope
santolo.ciccarelli001@studenti.uniparthenope.it

Luigi Aruta
Università degli studi di Napoli Parthenope
luigi.aruta@studenti.uniparthenope.it

Chiara Scuotto
Università Telematica Pegaso
chiara.scuotto@unipegaso.it

Francesco V Ferraro*
Clinical Exercise and Rehabilitation Research Centre, University of Derby, United Kingdom
f.ferraro@derby.ac.uk

Double Blind Peer Review

Citation
Ciccarelli, S., Aruta, L., Scuotto, C., & Ferraro, FV. (2025). Quality of life post-pandemic: an investigation into the health impact of long covid and future educational prospects, *Italian Journal of Health Education, Sports and Inclusive Didactics,* 8 (4). https://doi.org/10.32043/gsd.v8i4.1073

Doi:
https://doi.org/10.32043/gsd.v8i4.1073

gsdjournal.it
ISSN: 2532-3296
ISBN: 978-88-6022-504-7

ABSTRACT
The article analyses the long-term impact of COVID-19 infection, known as long COVID syndrome, on a sample of 89 Italian patients. Through the administration of the Patient-Reported Outcome Measures questionnaire, information was collected on symptoms, duration of the infection, use of healthcare services, physical activity, and impact on sleep. The results confirm the negative impact of long COVID on the full recovery of health status even after the virus has been cleared.

L'articolo analizza l'impatto a lungo termine dell'infezione da COVID-19, nota come sindrome long COVID, su un campione di 89 pazienti italiani. Attraverso la somministrazione del questionario Patient-Reported Outcome Measures, sono state raccolte informazioni su sintomi, durata dell'infezione, ricorso a servizi sanitari, attività fisica e impatto sul sonno. I risultati confermano l'impatto negativo del long COVID sul pieno recupero dello stato di salute anche dopo la negativizzazione dal virus.

KEYWORDS
Long Covid; Physical activity; Wellness pedagogy; Health education
Long Covid; Attività fisica; Pedagogia del benessere; Educazione sanitaria

Received 18/06/2024
Accepted 08/01/2025
Published 13/01/2025

[1] CRediT: Conceptualization: Francesco V Ferraro; Data management: Santolo Ciccarelli; Formal analysis: Santolo Ciccarelli, Francesco V Ferraro; Investigation: Francesco V Ferraro, Luigi Aruta, Chiara Scuotto; Methodology Development or design of the methodology: Francesco V Ferraro, Santolo Ciccarelli; Project Administration: Francesco V Ferraro; Resources Provision of study materials: Francesco V Ferraro; Supervision: Francesco V Ferraro; Validation Verification: Francesco V Ferraro; Draft Writing: Santolo Ciccarelli; Final Writing: Francesco V Ferraro, Santolo Ciccarelli

1. Introduction

During the critical phase of the SARS-CoV-2 pandemic (2020/21), commonly referred to as COVID-19-phase (Amore et al., 2021), it was estimated that the number of infected people was around 219 million (Hassan, 2021), while the estimate of global deaths, initially indicated as 5.42 million by the World Health Organization (WHO), required revision due to a recent analysis suggesting a revised figure of approximately 14.83 million. (Msemburi et al., 2023).

In the same period, in Italy, there are an estimated 20,833,018 infections (Ferrante, 2022), while the estimated death toll from March to December 2020 is 99,334 individuals and an additional 61,808 individuals in 2021. (Alicandro et al., 2021).

Following COVID-19 infection, numerous symptoms may occur. The most common are fever, cough, loss of smell, loss of taste, headache, fatigue, and varying degrees of respiratory difficulties (Wang et al., 2022). The rapid implementation of the first mRNA vaccines, specifically BNT162b2 (Pfizer-BioNTech) and mRNA-1273 (Moderna), (GeurtsvanKessel et al., 2022) has led to a significant decrease in deaths across the country, with mortality rates dropping from 3.53% during the period of dominance of the ancestral SARS-CoV-2 strain to 0.26% and 0.21% after the emergence of the Omicron subgroups BA.1/2 and BA.4/5. (Lippi et al., 2023). Having passed the most intense phase of the pandemic, it was realised that some symptoms related to SARS-CoV-2 infection continued to accompany some patients even after the process of virus negativity, giving rise to long COVID phenomena, a condition that implies the chronicization of SARS-CoV-2 symptoms (Draud et al., 2023).

Such a phenomenon, according to the report by the U.S. Department of Health and Human Services (HHS), can affect between 5% and 30% of people who have contracted SARS-CoV-2 (Ford et al., 2022), with a higher likelihood of developing this condition for patients who have been hospitalised (Rodriguez-Sanchez et al., 2022). In Italy, there are no estimates regarding patients affected by long COVID, but it is believed that there is still a large segment of the population living with this condition, which can significantly impact the quality of life, especially for those patients who contracted mild initial infections (Zanolla, 2023). To shed light on the consequences of long COVID among the Italian population, the research team administered specific questionnaires to a group of people residing in different regions who either contracted the virus or believed they contracted it but could not detect the pathogen due to a lack of devices capable of recognising it.

The research hypothesis was to verify whether there were any links between the symptoms of long COVID and the resumption of all those activities that the interviewees commonly carried out before contracting SARS-CoV-2.

2. Methods

2.1 Design

An online survey was developed by a group of researchers from the University of Naples Parthenope (ITA) and the University of Derby (UK), which consists of a questionnaire related to a patient-reported outcome measure that evaluates the specific symptoms associated with a particular condition, in this case, long COVID (Fernández de Las Peñas et al., 2022). In compliance with the European data protection law (General Data Protection Regulation), participants, after providing informed consent, were able to complete the questionnaire while maintaining anonymity, as each of them was assigned a unique identification code.

2.2 Sample

The participants in the experiment had to meet inclusion criteria, according to which they had to be of legal age, have a good understanding of the Italian language, have contracted COVID-19 or have experienced symptoms without having had the opportunity to undergo a test validated by the European Medicines Agency. (EMA). The study involved 89 individuals, of whom 68.5% resided in Campania and the remaining 31.5% were distributed across eight other regions of the country, namely Calabria, Emilia-Romagna, Lazio, Lombardy, Piedmont, Sicily, Trentino-Alto Adige, and Veneto.

2.3 Measurements

Each participant was asked to complete an adapted version of the Patient-Reported Outcome Measures (PROM), through which information regarding ethnicity, the number of people in their household, their occupation, body mass index (BMI), whether they were smokers, whether they consumed alcohol and, if so, how frequently, and whether they had any comorbidities was requested (Table 1). Furthermore, an additional 58 questions were posed to investigate their positivity to the virus and to analyse the long-term impact of COVID-19 on their health and daily activities. Fourteen of the fifty-eight questions consisted of multiple-choice questionnaires, and the remaining forty-four allowed for responses on a Likert scale from 1 to 10.

2.4 Data analysis

The data analysis was conducted using SPSS v.28. For all the variables, descriptive statistics were calculated and based on the results of the Shapiro-Wilk normality test, a non-parametric statistical measure that evaluates the strength and direction of the relationship between two variables, such as Spearman's correlation, was used.

3. Results

Table 1 presents the data regarding the average responses of the participants concerning the number of members in their household, their occupation, body mass index (BMI), whether they were smokers, whether they consumed alcohol and, if so, how frequently and whether they had any comorbidities.

Tables 3 and 4 in the appendix present data regarding the average responses of participants concerning virus positivity and the long-term impact of COVID-19 on health and daily activities. The survey reveals that there is a correlation between the duration of symptoms and the return to previous levels of physical activity (0.667 - <.001, p 0.01), between sleep and breathing (0.263 – 0.013, p 0.01, 0.289 – 0.006 p 0.05), between physical activity and the return to daily activities post-COVID-19 (0.226 – 0.033, p 0.05, 0.286 – 0.007, p 0.01, 0.543 – <.001, p 0.01, 0.487 – <.001, p 0.01, 0.524 – <.001, p 0.01, 0.729 – <.001, p 0.01, 0.221 – 0.037, p 0.05, 0.232 – 0.029, p 0.05), and between physical activity and the return to social activities post-COVID-19 (0.258 – 0.015, p 0.05, 0.219 – 0.040, p 0.05, 0.301 – 0.004, p 0.01, 0.510 – <.001, p 0.01, 0.452 – <.001, p 0.01, 0.530 – <.001, p 0.01, 0.533 – <.001, p 0.01).

For the other measures, no statistically significant differences were found. In Table 2, significant correlations can be observed between the Patient-Reported Outcome Measures (PROM) questions regarding the Long-Term Impact of COVID-19 on health and daily activities.

Region of residence (n= 89)	
Calabria	n= 2 (2,2%)
Campania	n= 61 (68,5%)
Emilia-Romagna	n= 2 (2,2%)
Lazio	n= 7 (7,9%)
Lombardy	n= 6 (6,7%)
Piedmont	n= 8 (9,0%)
Sicily	n= 1 (1,1%)
Trentino-Alto Adige	n= 1 (1,1%)
Veneto	n= 1 (1,1%)
Origin (n= 89)	
Caucasian	n= 59 (66,3%)
Other	n= 30 (33,7%)

Composition of the family unit (n= 89)	
1 Member	n= 13 (14,6%)
2 Members	n= 19 (21,3%)
3 Members	n= 21 (23,6%)
4 Members	n= 29 (32,6%)
More than 4 members	n= 7 (7,9%)
Occupation (n= 89)	
Unemployed	n= 7 (7,9%)
Student	n= 22 (24,7%)
Part-Time Worker	n= 11 (12,4%)
Full-Time Worker	n= 48 (53,9%)
Retiree	n= 1 (1,1%)
BMI (n= 89)	
Severe thinness	n= 1 (1,1%)
Underweight	n= 2 (2,2%)
Normal weight	n=58 (65,2%)
Overweight	n= 20 (22,5%)
Class 1 Obesity	n= 8 (9,0%)
Smoker (n= 89)	
Yes	n= 39 (43,8%)
No	n= 32 (36%)
Ex-Smoker	n= 18 (20,2%)
Alcohol consumption (n= 89)	
Never	n= 20 (22,5%)
1-2 a week	n= 61 (68,5%)
3-4 a week	n= 5 (5,6%)
5-6 a week	n= 1 (1,1%)
Every day	n= 2 (2,2%)
Comorbidities (n= 89)	
None	n= 65 (73%)
Endometriosis	n= 1 (1,1%)
Migraine	n= 1 (1,1%)
GvHD	n= 1 (1,1%)
Thrombophilia	n= 1 (1,1%)
Asthma	n= 2 (2,2%)
Obesity	n= 3 (3,4%)
Diabetes	n= 2 (2,2%)
Hypertension	n= 5 (5,6%)
Hyperthyroidism	n= 1 (1,1%)
Hypothyroidism	n= 3 (3,4%)
Chronic obstructive pulmonary disease (BPCO)	n= 1 (1,1%)
Vascular diseases	n= 2 (2,2%)
Multifollicular uterus Polycystic ovary	n= 1 (1,1%)

Table 1. Demographic data and characteristics of the participants

Correlation between the responses	Results (two-trails)	P-Value	Themes
2-8	0.667- <.001	0.01	Duration of symptoms and return to previous levels of physical activity.
44-6	0.263 – 0.013	0.05	Relationship between sleep and breathing
47-6	0.294 – 0.005	0.01	
8-55	0.289 – 0.006	0.05	Relationship between physical activity and return to daily activities post-COVID
11-55	0.226 – 0.033	0.05	
12-55	0.286 – 0.007	0.01	
51-55	0.543 – <.001	0.01	
52-55	0.487 – <.001	0.01	
53-55	0.524 – <.001	0.01	
54-55	0.729 – <.001	0.01	
8-57	0.221 – 0.037	0.05	Relationship between physical activity and the return to social activities post-COVID
9-57	0.232 – 0.029	0.05	
11-57	0.258 – 0.015	0.05	
12-57	0.219 – 0.040	0.05	
13-57	0.301 – 0.004	0.01	
51-57	0.510 – <.001	0.01	
52-57	0.452 – <.001	0.01	
53-57	0.530 – <.001	0.01	
54-57	0.533 – <.001	0.01	

Table 2. Correlations between the questions of the Patient-Reported Outcome Measures (PROM) regarding the Long-Term Impact of COVID-19 on health and daily activities.

4. Discussion

This study aims to draw attention to the phenomenon of long COVID, which is a debilitating disease characterised by a wide range of symptoms that, according to the HHS, manifest in 5% to 30% of individuals who have contracted the infection. The World Health Organization (WHO) has already provided recommendations for managing this condition, suggesting that integrated multidisciplinary care can help improve patient outcomes. (Giuliano et al., 2023). Furthermore, the WHO recommends behaviour modification and lifestyle changes in patients, as well as the use of support networks and setting goals by healthcare personnel to properly manage the symptoms (Töpfner et al., 2022).

Despite these recommendations, the current diagnostic and therapeutic options for long COVID are still insufficient, and therefore further research and clinical studies are necessary to address the complexity of this condition. (Mora-Romo, 2022). To better understand this phenomenon, significant efforts are being made, as scientific communities around the world are collaborating for a better understanding of the complex pathogenesis of this disease, in addition to developing evidence-based approaches for its timely diagnosis and proper management. (Perumal et al., 2023). One possible path to take is to use data science, an interdisciplinary field that employs scientific methods, processes, algorithms, and systems to extract knowledge and information from data, as a potential tool to gain a deeper understanding of long COVID and accelerate relief efforts.

Through data sharing and the creation of a single database, research can be undertaken on the identification, characterisation, and management of long COVID manifestations. (Ambalavanan et al., 2023). To achieve this objective, it is necessary to accumulate information regarding this phenomenon through empirical studies. In the literature, there are already research projects that have studied the phenomenon of long COVID through the use of online questionnaires. For example, in a study conducted in the United Kingdom by Owen (2023), online questionnaires were administered to 132 participants, with closed and open-ended questions about demographics, quality of life pre- and post-COVID, daily activities, and long COVID experiences. The results highlighted a significant deterioration in quality of life, severe limitations in performing normal daily activities, with a negative impact on social relationships and work. Furthermore, the interviewees reported a poor quality of healthcare received, with experiences of symptom minimisation by doctors.

In line with Owen's results, the authors discovered significant correlations between the duration of symptoms and the return to previous levels of physical activity, between sleep and breathing, between physical activity and the return to daily activities post-COVID, as well as between physical activity and the return to social activities post-COVID.

The results obtained are also linked to other studies in the literature, according to which there is a connection between COVID-19 symptoms and neuromuscular efficiency, with possible repercussions on cardiorespiratory capacity (Frazão et al., 2023), as well as a link between the duration of SARS-CoV-2 symptoms, sleep, and breathing, as people who suffer from insomnia seem to be more predisposed to the condition of long COVID. (Salfi et al., 2023). Moreover, there is also a study that highlights the impact of SARS-CoV-2 infection, which, if prolonged over time, leading to the condition of long COVID, can affect the resumption of social activities in female subjects. (Aghaei et al., 2022). In light of the above, further studies are essential to develop a new method to diagnose this condition. In this regard, the research team intends to undertake a new experiment aimed at a larger sample, aimed at a better understanding of the phenomenon, with questions that may also concern other aspects of the daily lives of the interviewees, such as the potential perceived effects following the infection regarding the sexual sphere and fertility, as well as the relationship that seems to exist between contracting SARS-CoV-2 and baldness (Kalner 2022 & Bostan 2023).

4.1 The educational perspective

Within a healthcare context, patient education is an element of fundamental importance, as through knowledge, the understanding of one's medical conditions is promoted, the ability to make informed decisions is enhanced, and the improvement of one's overall well-being is facilitated. (Sarkhani et al., 2022). An additional factor capable of improving the health status of patients affected by long COVID is the practice of physical exercise, which, when combined with a proper diet, has been shown to promote the recovery of patients, improving symptoms and overall well-being. (Roggeman et al., 2023). It should be specified that physical activity applied to subjects affected by long COVID, even if a protocol involving sessions of aerobic and resistance activities were to be administered, does not seem to compromise their health status, as no issues related to severe dyspnea or blood oxygen desaturation have been observed. (Haunhorst et al., 2023). Therefore, a pedagogical approach that, in addition to educating patients on the proper management of their health condition, can encourage them to adopt a

lifestyle that includes physical activity supported by a healthy diet; it could prove decisive in facilitating recovery.

5. Conclusions

The results of this study provide new information on the impact of long COVID syndrome on quality of life and functional abilities in a sample of Italian patients. In particular, a statistically significant correlation emerged between the duration of acute COVID-19 symptoms and the time required to return to pre-infection levels of physical activity. Furthermore, associations have been found between sleep, breathing, the ability to perform daily activities, and participation in social activities in patients with long-term sequelae of COVID-19. These results seem to confirm the negative impact that long COVID can have on the complete recovery of the health and well-being of patients after the phase of SARS-CoV-2 negativization. (Haunhorst et al., 2023).

6. Limitations

The main limitations of the study concern the small sample size, its uneven distribution across the Italian territory, and the stratification of the data.

References

Aghaei, A., Zhang, R., Taylor, S., Tam, C. C., Yang, C. H., Li, X., & Qiao, S. (2022). Social life of females with persistent COVID-19 symptoms: a qualitative study. International Journal of Environmental Research and Public Health, 19(15), 9076. https://doi.org/10.3390/ijerph19159076

Alicandro G, Gerli AG, Centanni S, Remuzzi G, La Vecchia C. Excess Total Mortality in Italy: An Update to February 2023 with Focus on Working Ages. Med Lav [Internet]. 2023 Jun. 12 https://doi.org/10.23749/mdl.v114i3.14740

Ambalavanan, R., Snead, R. S., Marczika, J., Kozinsky, K., & Aman, E. (2023). Advancing the Management of Long COVID by Integrating into Health Informatics Domain: Current and Future Perspectives. International Journal of Environmental Research and Public Health, 20(19), 6836. ttps://doi.org/10.3390/ijerph20196836

Amore, S., Puppo, E., Melara, J. et al. Impact of COVID-19 on older adults and role of long-term care facilities during early stages of epidemic in Italy. Sci Rep 11, 12530 (2021). https://doi.org/10.1038/s41598-021-91992-9

Balboni, E., Filippini, T., Rothman, K. J., Costanzini, S., Bellino, S., Pezzotti, P., ... & Vinceti, M. (2023). The influence of meteorological factors on COVID-19 spread in Italy during the first and second wave. Environmental Research, 228, 115796. https://doi.org/10.1016/j.envres.2023.115796

Bostan, E., & Cakir, A. (2023). The Effect of Covid-19 on the Hair Diseases Observed in Health Care Providers: Analysis of 513 participants. Dermatology Practical & Conceptual, 13(1). https://doi.org/10.5826/dpc.1301a36

Davis, H.E., McCorkell, L., Vogel, J.M. et al. Long COVID: major findings, mechanisms and recommendations. Nat Rev Microbiol 21, 133–146 (2023). https://doi.org/10.1038/s41579-022-00846-2

Draud, S., Prado, J., Hass, T., & Ramirez, J. (2023). Long COVID: The Silent Pandemic. Norton Healthcare Medical Journal, 1(1). https://doi.org/10.59541/001c.81031

Dondi, M., Milan, E., Pontone, G., Hirschfeld, C. B., Williams, M., Shaw, L. J., ... & INCAPS COVID Investigators Group. (2021). Reduction of cardiac imaging tests during the COVID-19 pandemic: The case of Italy. Findings from the IAEA Non-invasive Cardiology Protocol Survey on COVID-19 (INCAPS COVID). International Journal of Cardiology, 341, 100-106. https://doi.org/10.1016/j.ijcard.2021.08.044

Ferrante, P. (2022). The first 2 years of COVID-19 in Italy: Incidence, lethality, and health policies. Frontiers in Public Health, 10, 986743. https://doi.org/10.3389/fpubh.2022.986743

Fernández-de-Las-Peñas, C., Palacios-Ceña, M., Rodríguez-Jiménez, J., de-la-Llave-Rincón, A. I., Fuensalida-Novo, S., Cigarán-Méndez, M., ... & Gil-de-Miguel, Á. (2022). Psychometric Properties of the Functional Impairment Checklist (FIC) as a Disease-Specific Patient-Reported Outcome Measure (PROM) in Previously Hospitalized COVID-19 Survivors with Long-COVID. International Journal of Environmental Research and Public Health, 19(18), 11460. https://doi.org/10.3390/ijerph191811460

Ford, E., Parfitt, H., McCheyne, I., Kiss, I. Z., & Sellers, R. (2022). Risk factors and symptom clusters for Long Covid: analysis of United Kingdom symptom tracker app data. medRxiv, 2022-11. https://doi.org/10.1101/2022.11.14.22282285

Frazão, M., da Cruz Santos, A., Silva, P. E., de Assis Pereira Cacau, L., Petrucci, T. R., Assis, M. C., ... & do Socorro Brasileiro-Santos, M. (2023). Impaired Neuromuscular Efficiency and Symptom-Limited Aerobic Exercise Capacity 4 Weeks After Recovery From COVID-19 Appear to Be Associated With Disease Severity at Onset. Physical Therapy, 103(2), pzac167. https://doi.org/10.1093/ptj/pzac167

Giuliano, M., Tiple, D., Agostoni, P., Armocida, B., Biardi, L., Bonfigli, A. R., ... & Onder, G. (2023). Italian good practice recommendations on management of persons with Long-COVID. Frontiers in Public Health, 11, 1122141. https://doi.org/10.3389/fpubh.2023.1122141

Hassan, T. . (2021). A Global Update on COVID-19 Pandemic: A Global Update on COVID-19 Pandemic. Proceedings of the Pakistan Academy of Sciences: B. Life and Environmental Sciences, 58(4), 1–4. https://doi.org/10.53560/PPASB(58-4)673

Haunhorst, S., Bloch, W., & Puta, C. (2023). Impact of long COVID on recovery in sport and exercise. In The Importance of Recovery for Physical and Mental Health (pp. 203-222). Routledge. eBook ISBN 9781003250647

Hidalgo Cerezo, A. (2016). Protección de datos de carácter personal relativos a la salud del paciente: fundamentos, protección a la intimidad y comentarios al nuevo Reglamento UE 2016/679. Revista de Derecho de la UNED (RDUNED), (19), 715–744. https://doi.org/10.5944/rduned.19.2016.18462

GeurtsvanKessel, C. H., & de Vries, R. D. (2022). Evaluating novel COVID-19 vaccines in the current chapter of the pandemic. The Lancet Infectious Diseases, 22(12), 1652-1654. https://doi.org/10.1016/S1473-3099(22)00517-5

González-Parra, G., & Arenas, A. J. (2023). Mathematical Modeling of SARS-CoV-2 Omicron Wave under Vaccination Effects. Computation, 11(2), 36. https://doi.org/10.3390/computation11020036

Kalner, S., & Vergilis, I. (2022). Retrospective Study of Covid Related Hair Loss. Journal of Drugs in Dermatology: JDD, 21(7), 724-727. https://doi.org/10.36849/jdd.6661

Lee, S., Kim., M. (2023). Functional medical approach and management for long COVID. Journal of Korean Institute for Functional Medicine (Online), https://doi.org/10.32581/jkifm.2023.6.1.22

Lippi, G., Sanchís-Gomar, F., & Henry, B. M. (2023). Covid-19 and its long-term sequelae: what do we know in 2023?. Polish Archives of Internal Medicine. https://doi.org/10.20452/pamw.16402

Mora-Romo, J. F. (2022). Health psychology on long COVID: Strategies based on NICE and WHO guidelines recommendations. Salud mental, 45(4), 199-208. https://doi.org/10.17711/SM.0185-3325.2022.026

Msemburi, W., Karlinsky, A., Knutson, V., Tatem, A. J., Dalziel, B. D., Morozoff, C., Hipgrave, D. B., Takahashi, S., Guerra, F. M., Kang, G., Atun, R., & Coldiron, M. E. (2023). The WHO estimates of excess mortality associated with the COVID-19 pandemic. Nature, 613, 130–137. https://doi.org/10.1038/s41586-022-05522-2

Owen, R., Ashton, R. E., Skipper, L., Phillips, B. E., Yates, J., Thomas, C., ... & Faghy, M. A. (2023). Long COVID quality of life and healthcare experiences in the UK: a mixed method online survey. Quality of Life Research, 1-11. https://doi.org/10.1007/s11136-023-03513-y

Perumal, R., Shunmugam, L., & Naidoo, K. (2023). Long COVID: An approach to clinical assessment and management in primary care. South African Family Practice, 65(4). https://doi.org/10.4102/safp.v65i1.5751

Rodriguez-Sanchez, I., Rodriguez-Mañas, L., & Laosa, O. (2022). Long COVID-19: the need for an interdisciplinary approach. Clinics in geriatric medicine, 38(3), 533-544. https://doi.org/10.1016/j.cger.2022.03.005

Roggeman, S., Garcia, B. J., Leemans, L., Demol, J., Geers, J., De Smedt, A., ... & De Waele, E. (2023). Faster functional performance recovery after individualized nutrition therapy combined with a patient-tailored physical rehabilitation program versus standard physiotherapy in patients with long COVID: a pilot study for a randomized, controlled single-center trial. https://doi.org/10.21203/rs.3.rs-2392494/v1

Salfi, F., Amicucci, G., Corigliano, D., Viselli, L., D'Atri, A., Tempesta, D., & Ferrara, M. (2023). Poor sleep quality, insomnia, and short sleep duration before infection predict long-term symptoms after COVID-19. Brain, Behavior, and Immunity. https://doi.org/10.1016/j.bbi.2023.06.010

Sarkhani, N., & Beykmirza, R. (2022). Patient education room: A new perspective to promote effective education. Asia Pacific Journal of Public Health, 34(8), 881-882. https://doi.org/10.1177/10105395221122646

Stefanelli, P., Trentini, F., Petrone, D., Mammone, A., Ambrosio, L., Manica, M., … & Merler, S. (2022). Tracking the progressive spread of the SARS-CoV-2 Omicron variant in Italy, December 2021 to January 2022. Eurosurveillance, 27(45), 2200125. DOI: 10.2807/1560-7917.ES.2022.27.45.2200125

Töpfner, N., Deutsche Gesellschaft für Pädiatrische Infektiologie e. V. (DGPI)., Alberer, M., Berner, R., ... & Huppertz, H.-I. (2022). Einheitliche Basisversorgung von Kindern und Jugendlichen mit Long COVID. Monatsschrift Kinderheilkunde, 170(5), 539-547. https://doi.org/10.1007/s00112-021-01408-1

Urso P., Cattaneo A,Vercelli F., Domenico, Cavallo M., Carrer P. (2023). Early-phase pandemic in Italy: Covid-19 spread determinant factors. Heliyon, 9(4):e15358-e15358. https://doi.org/10.1016/j.heliyon.2023.e15358

Vivek, P., Chavda., Gargi, Jogi., Srusti, Dave., Bhoomika, M., Patel., Lakshmi, Vineela, Nalla., Krishna, D., Koradia. (2023). mRNA-Based Vaccine for COVID-19: They Are New but Not Unknown!. Vaccines, 11(3):507-507. https://doi.org/10.3390/vaccines11030507

Wang, Y., Zhang, F., Byrd, J. B., Yu, H., Ye, X., & He, Y. (2022). Differential COVID-19 symptoms given pandemic locations, time, and comorbidities during the early pandemic. Frontiers in Medicine, 9, 770031. https://doi.org/10.3389/fmed.2022.770031

Zanolla, L. (2023). COVID-19: un bilancio dopo tre anni. biochimica clinica, 47(4), 321.

Appendix

#	Questions	Average of the responses
1	**Have you ever tested positive for Covid-19 in the last 2 years?**	
	No	n= 9 (10,1%)
	Yes	n= 80 (89,9%)
2	**Per quanto tempo ha manifestato i sintomi precedenti?**	
	I didn't have any Covid symptoms.	n=8 (9%)
	1-2 weeks	n= 41 (46%)
	About 1 month	n=17 (19%)
	About 3 months	n=16 (18%)
	About 6 months	n=7 (7,9%)
3	**Which of the following symptoms did you experience during the period of testing positive for Covid-19? Select the symptoms observed (it is possible to indicate more than one).**	
	He hasn't had COVID or had typical COVID-19 symptoms.	n= 18 (20,2%)
	Persistent cough	n=6 (6,7%)
	Pharyngitis	n=1 (1,1%)
	Severe cold	n=2 (2,2%)
	High temperature	n=2 (2,2%)
	Alterations of taste/olfactory senses	n=1 (1,1%)
	More symptoms	n=59 (66,3%)
4	**Have you sought clinical services due to COVID-19-related symptoms?**	n=33 (37,1%)
	I contacted the general practitioner.	n=45 (50,6%)
	I contacted the COVID-19 helpline.	n=4 (4,5%)
	I went to the emergency room.	n=33 (37,1%)
	I contacted both the help line and the general practitioner.	n=3 (3,4%)
	I was hospitalized.	n=1 (1,1%)
5	**Approximately how many hours do you sleep at night?**	
	5 hours	n=12 (12,35%)
	6 hours	n=30 (33,3%)
	7 hours	n=32 (36%)
	8 hours	n=14 (15,7%)
6	**Has there been a change in your ability to breathe since you noticed the symptoms of Covid-19?**	
	No	n=66 (74,2%)
	Yes	n=22 (24,7%)
7	**To what extent does dyspnea affect your daily life (you can also select multiple options)?**	
	1 month later	n=54 (60,7%)

	2 months later	n=16 (18%)
	3 months later	n=12 (13,5%)
	4 months later	n=3 (3,4%)
	More than 4 months later	n=4 (4,5%)
8	**How long after the onset of Covid-19 symptoms were you able to return to your previous levels of physical activity?**	
	I don't have any breathing problems.	n=41 (46,1%)
	I get short of breath when I hurry to walk on flat ground or when I walk up a slight hill.	n=16 (18%)
	I don't have shortness of breath, except during intense physical exercise.	n=29 (32,6%)
	I stop to catch my breath after walking about 90 meters or after a few minutes on flat ground.	n=3 (3,4%)
9	**Compared to before contracting Covid-19, can you perform vigorous physical activities at work, such as lifting heavy loads?**	
	No	n=12 (13,5%)
	Yes	n=77 (86,5%)
10	**Compared to before contracting Covid-19, are you able to engage in moderate physical activity such as walking, carrying a light load, or climbing stairs?**	
	No	n=3 (3,4%)
	Yes	n=86 (96,6%)
11	**Compared to before contracting Covid-19, are you able to engage in vigorous physical activities such as home maintenance or DIY/decorating?**	
	No	n=7 (7,9%)
	Yes	n=82 (92,1%)
12	**Compared to before contracting Covid-19, as part of your daily routine, are you able to perform moderate activities like sweeping or gardening?**	
	No	n=2 (2,2%)
	Yes	n=87 (97,8%)
13	**Compared to before contracting Covid-19, are you able to participate in vigorous physical activities such as aerobics, running, fast cycling, fast swimming, resistance training?**	
	No	n=19 (21,3%)
	Yes	n=70 (78,7%)
14	**Compared to before contracting Covid-19, are you able to participate in moderate physical activities such as cycling at a regular pace, swimming at a regular pace, or playing doubles tennis?**	
	No	n=16 (18%)

Yes	n=73 (82%)

Table 3. Multiple-choice questionnaire on COVID-19 positivity and its impact on health and daily activities

#	Questions	Average of the responses	Value scale
15	**In addition to the above symptoms, how severely have you experienced shortness of breath?**	1 n= 39 (43,8%) 2 n= 15 (26,9%) 3 n= 5 (5,6%) 4 n= 9 (10,1%) 5 n= 5 (5,6%) 6 n= 5 (5,6%) 7 n= 10 (11,2%) 8 n= 0 (0%) 9 n= 1 (1,1%) 10 n= 0 (0%)	1-2=Assente/quasi assente 3-4= Leggermente 5-6= Moderato 7-8= Molto 9-10= Moltissimo
16	**In addition to the above symptoms, how severely did you experience physical pain?**	1 n= 27 (30,3%) 2 n= 8 (9%) 3 n= 7 (7,9%) 4 n= 9 (10,1%) 5 n= 7 (7,9%) 6 n= 9 (10,1%) 7 n= 8 (9,0%) 8 n= 8 (9,0%) 9 n= 5 (5,6%) 10 n= 1 (1,1%)	
17	**In addition to the above symptoms, how severely have you experienced fatigue or lethargy?**	1 n= 14 (15,7%) 2 n= 4 (4,5%) 3 n= 10 (11,2%) 4 n= 7 (7,9%) 5 n= 9 (10,1%) 6 n= 9 (10,1%) 7 n= 9 (10,1%) 8 n= 13 (14,6%) 9 n= 10 (11,2%) 10 n= 4 (4,5%)	
18	**In addition to the above symptoms, how severely have you experienced muscle pain?**	1 n= 27 (30,3%) 2 n= 9 (10,1%) 3 n= 4 (4,5%) 4 n= 14 (15,7%) 5 n= 2 (2,2%) 6 n= 6 (6,7%) 7 n= 9 (10,1%) 8 n= 11 (12,4%)	

		9 n= 6 (6,7%) 10 n= 1 (1,1%)
19	**In addition to the above symptoms, how severely did you experience chest pain?**	1 n= 52 (58,4%) 2 n= 9 (10,1%) 3 n= 7 (7,9%) 4 n= 2 (2,2%) 5 n= 6 (6,7%) 6 n= 5 (5,6%) 7 n= 3 (3,4%) 8 n= 2 (2,2%) 9 n= 2 (2,2%) 10 n= 1 (1,1%)
20	**In addition to the above symptoms, how severely have you experienced headaches?**	1 n= 22 (24,7%) 2 n= 12 (13,5%) 3 n= 6 (6,7%) 4 n= 10 (11,2%) 5 n= 4 (4,5%) 6 n= 6 (6,7%) 7 n= 5 (5,6%) 8 n= 13 (14,6%) 9 n= 8 (9%) 10 n= 3 (3,4%)
21	**Are you currently (post Covid-19 infection) still experiencing sore throat and with what severity?**	1 n= 20 (22,5%) 2 n= 8 (9%) 3 n= 12 (13,5%) 4 n= 6 (6,7%) 5 n= 8 (9%) 6 n= 10 (11,2%) 7 n= 5 (5,6%) 8 n= 9 (10,1%) 9 n= 6 (6,7%) 10 n= 5 (5,6%)
22	**In addition to the above symptoms, how severely have you experienced memory loss?**	1 n= 61 (68,5%) 2 n= 2 (2,2%) 3 n= 7 (7,9%) 4 n= 7 (7,9%) 5 n= 5 (5,6%) 6 n= 2 (2,2%) 7 n= 2 (2,2%) 8 n= 1 (1,1%) 9 n= 1 (1,1%) 10 n= 1 (1,1%)

23	**In addition to the above symptoms, how severely did you experience diarrhea?**	1 n= 61 (68,5%) 2 n= 8 (9%) 3 n= 8 (9%) 4 n= 3 (3,4%) 5 n= 5 (5,6%) 6 n= 1 (1,1%) 7 n= 1 (1,1%) 8 n= 1 (1,1%) 9 n= 0 (0%) 10 n= 1 (1,1%)
24	**In addition to the above symptoms, how severely did you experience confusion?**	1 n= 47 (52,1%) 2 n= 11 (12,4%) 3 n= 5 (5,6%) 4 n= 4 (4,5%) 5 n= 6 (6,7%) 6 n= 5 (5,6%) 7 n= 5 (5,6%) 8 n= 4 (4,5%) 9 n= 2 (2,2%) 10 n= 0 (0%)
25	**In addition to the above symptoms, how severely have you experienced redness of the eyes?**	1 n= 56 (62,9%) 2 n= 9 (10,1%) 3 n= 9 (10,1%) 4 n= 4 (4,5%) 5 n= 5 (5,6%) 6 n= 1 (1,1%) 7 n= 1 (1,1%) 8 n= 2 (2,2%) 9 n= 0 (0%) 10 n= 2 (2,2%)
26	**Are you currently (post Covid-19 infection) still experiencing shortness of breath and with what severity?**	1 n= 63 (70,8%) 2 n= 6 (6,7%) 3 n= 3 (3,4%) 4 n= 6 (6,7%) 5 n= 8 (9%) 6 n= 2 (2,2%) 7 n= 1 (1,1%) 8 n= 0 (0%) 9 n= 0 (0%) 10 n= 0 (0%)
27	**Are you currently (post Covid-19 infection) still experiencing physical pain and with what severity?**	1 n= 62 (69,7%) 2 n= 10 (11,2%) 3 n= 3 (3,4%) 4 n= 3 (3,4%) 5 n= 8 (9%)

		6 n= 1 (1,1%) 7 n= 1 (1,1%) 8 n= 0 (0%) 9 n= 1 (1,1%) 10 n= 0 (0%)
28	**Are you currently (post Covid-19 infection) still experiencing fatigue or lethargy and with what severity?**	1 n= 41 (46,1%) 2 n= 11 (12,4%) 3 n= 9 (10,1%) 4 n= 4 (4,5%) 5 n= 7 (7,9%) 6 n= 10 (11,2%) 7 n= 5 (5,6%) 8 n= 2 (2,2%) 9 n= 0 (0%) 10 n= 0 (0%)
29	**Are you currently (post Covid-19 infection) still experiencing muscle weakness and with what severity?**	1 n= 53 (59,6%) 2 n= 14 (15,7%) 3 n= 5 (5,6%) 4 n= 4 (4,5%) 5 n= 5 (5,6%) 6 n= 7 (7,9%) 7 n= 1 (1,1%) 8 n= 0 (0%) 9 n= 0 (0%) 10 n= 0 (0%)
30	**Are you currently (post Covid-19 infection) still experiencing chest pain and with what severity?**	1 n= 69 (77,5%) 2 n= 10 (11,2%) 3 n= 5 (5,6%) 4 n= 1 (1,1%) 5 n= 3 (3,4%) 6 n= 1 (1,1%) 7 n= 0 (0%) 8 n= 0 (0%) 9 n= 0 (0%) 10 n= 0 (0%)
31	**Are you currently (post Covid-19 infection) still experiencing headaches and with what severity?**	1 n= 60 (67,4%) 2 n= 13 (14,6%) 3 n= 3 (3,4%) 4 n= 3 (3,4%) 5 n= 4 (4,5%) 6 n= 3 (3,4%) 7 n= 1 (1,1%) 8 n= 1 (1,1%) 9 n= 1 (1,1%) 10 n= 0 (0%)

32	**Are you currently (post Covid-19 infection) still experiencing sore throat and with what severity?**	1 n= 66 (74,2%) 2 n= 8 (9%) 3 n= 5 (5,6%) 4 n= 5 (5,6%) 5 n= 1 (1,1%) 6 n= 2 (2,2%) 7 n= 1 (1,1%) 8 n= 1 (1,1%) 9 n= 0 (0%) 10 n= 0 (0%)
33	**Currently (post Covid-19 infection) are you still experiencing memory loss with what severity?**	1 n= 66 (74,2%) 2 n= 5 (5,6%) 3 n= 6 (6,7%) 4 n= 2 (2,2%) 5 n= 4 (4,5%) 6 n= 5 (5,6%) 7 n= 1 (1,1%) 8 n= 0 (0%) 9 n= 0 (0%) 10 n= 0 (0%)
34	**Currently (post Covid-19 infection) are you still experiencing diarrhea with what severity?**	1 n= 71 (79,8%) 2 n= 10 (11,2%) 3 n= 4 (4,5%) 4 n= 0 (0%) 5 n= 1 (1,1%) 6 n=2 (2,2%) 7 n= 1 (1,1%) 8 n= 0 (0%) 9 n= 0 (0%) 10 n= 0 (0%)
35	**Currently (post Covid-19 infection) are you still experiencing confusion with what severity?**	1 n= 61 (68,5%) 2 n= 10 (11,2%) 3 n= 5 (5,6%) 4 n= 6 (6,7%) 5 n= 2 (2,2%) 6 n= 5 (5,6%) 7 n= 0 (0%) 8 n= 0 (0%) 9 n= 0 (0%) 10 n= 0 (0%)
36	**Currently (post Covid-19 infection) are you still experiencing eye redness with what severity?**	1 n= 72 (80,9%) 2 n= 6 (6,7%) 3 n= 6 (6,7%) 4 n= 4 (4,5%) 5 n= 1 (1,1%)

		6 n= 0 (0%) 7 n= 0 (0%) 8 n= 0 (0%) 9 n= 0 (0%) 10 n= 0 (0%)
37	**How good did you consider your overall health to be before contracting Covid-19?**	1 n= 2 (2,2%) 2 n= 2 (2,2%) 3 n= 0 (0%) 4 n= 2 (2,2%) 5 n= 2 (2,2%) 6 n= 8 (9%) 7 n= 11 (12,4%) 8 n= 23 (25,8%) 9 n= 21 (23,6%) 10 n= 18 (20,2%)
38	**Because of Covid-19, how good do you consider your overall health now?**	1 n= 3 (3,4%) 2 n= 1 (1,1%) 3 n= 1 (1,1%) 4 n= 3 (3,4%) 5 n= 10 (11,2%) 6 n= 14 (15,7%) 7 n= 13 (14,6%) 8 n= 19 (21,3%) 9 n= 12 (13,5%) 10 n= 13 (14,6%)
39	**After contracting Covid-19, how capable are you of performing activities such as eating, walking, shopping, personal hygiene, etc. without the help of another person?**	1 n= 4 (4,5%) 2 n= 1 (1,1%) 3 n= 0 (0%) 4 n= 0 (0%) 5 n= 1 (1,1%) 6 n= 2 (2,2%) 7 n= 2 (2,2%) 8 n= 4 (4,5%) 9 n= 6 (6,6%) 10 n= 69 (67,5%)
40	**How difficult did Covid-19 symptoms make it to complete daily activities (e.g., work, recreation, self-care, grocery shopping, going up/down stairs)?**	1 n= 39 (43,8%) 2 n= 3 (3,4%) 3 n= 7 (7,9%) 4 n= 7 (7,9%) 5 n= 6 (6,7%) 6 n= 5 (5,6%) 7 n= 6 (6,7%) 8 n= 8 (8,9%) 9 n= 6 (6,7%) 10 n= 2 (2,2%)

41	**How depressed, anxious, or worried did you feel during your Covid-19 infection?**	1 n= 23 (25,8%) 2 n= 5 (5,6%) 3 n= 3 (3,4%) 4 n= 12 (13,5%) 5 n= 5 (5,6%) 6 n= 9 (10,1%) 7 n= 8 (9%) 8 n= 10 (11,2%) 9 n= 4 (4,5%) 10 n= 10 (11,2%)
42	**How much do you find that there are daily activities that you are now unable to complete independently after contracting Covid-19?**	1 n= 73 (82%) 2 n= 5 (5,6%) 3 n= 3 (3,4%) 4 n= 2 (2,2%) 5 n= 1 (1,1%) 6 n= 2 (2,2%) 7 n= 1 (1,1%) 8 n= 2 (2,2%) 9 n= 0 (0%) 10 n= 0 (0%)
43	**Do you take longer to fall asleep than before you showed symptoms of Covid-19?**	1 n= 61 (68,5%) 2 n= 6 (6,7%) 3 n= 5 (5,6%) 4 n= 4 (4,5%) 5 n= 3 (3,4%) 6 n= 3 (3,4%) 7 n= 4 (4,5%) 8 n= 1 (1,1%) 9 n= 0 (0%) 10 n= 2 (2,2%)
44	**How much do you sleep differently (more or less hours) than before Covid-19 symptoms occurred?**	1 n= 57 (64%) 2 n= 6 (6,7%) 3 n= 5 (5,6%) 4 n= 4 (4,5%) 5 n= 3 (3,4%) 6 n= 5 (5,6%) 7 n= 4 (4,5%) 8 n= 2 (2,2%) 9 n= 2 (2,2%) 10 n= 1 (1,1%)
45	**How much did you find yourself needing more sleep during the day because of Covid-19 symptoms?**	1 n= 33 (37,1%) 2 n= 9 (10,1%) 3 n= 5 (5,6%) 4 n= 8 (9%) 5 n= 3 (3,4%)

		6 n= 9 (10,1%) 7 n= 6 (6,7%) 8 n= 8 (9%) 9 n= 5 (5,6%) 10 n= 3 (3,4%)
46	**How much did Covid-19-related symptoms affect sleep quality?**	1 n= 42 (47,2%) 2 n= 6 (6,7%) 3 n= 6 (6,7%) 4 n= 4 (4,5%) 5 n= 11 (12,4%) 6 n= 5 (5,6%) 7 n= 6 (6,7%) 8 n= 3 (3,4%) 9 n= 1 (1,1%) 10 n= 5 (5,6%)
47	**How much have Covid-19-related symptoms affected your ability to get out of bed in the morning?**	1 n= 41 (46,1%) 2 n= 12 (13,5%) 3 n= 8 (9%) 4 n= 2 (2,2%) 5 n= 10 (11,2%) 6 n= 2 (2,2%) 7 n= 4 (4,5%) 8 n= 2 (2,2%) 9 n= 5 (5,6%) 10 n= 3 (3,4%)
48	**How much do you find yourself unable to complete the activities you used to do because of Covid-19-related fatigue?**	1 n= 62 (69,7%) 2 n= 15 (16,9%) 3 n= 3 (3,4%) 4 n= 3 (3,4%) 5 n= 3 (3,4%) 6 n= 1 (1,1%) 7 n= 0 (0%) 8 n= 2 (2,2%) 9 n= 0 (0%) 10 n= 0 (0%)
49	**Before contracting Covid-19, were you participating in high-intensity sports, fitness, or recreational activities that cause increased breathing or heart rate? (cycling, swimming, team sports, endurance training)**	1 n= 35 (39,3%) 2 n= 4 (4,5%) 3 n= 3 (3,4%) 4 n= 3 (3,4%) 5 n= 3 (3,4%) 6 n= 7 (7,9%) 7 n= 6 (6,7%) 8 n= 7 (7,9%) 9 n= 4 (4,5%) 10 n= 17 (19,1%)

50	**Before experimenting with Covid-19, how much did you participate in moderate intensity activities that cause an increase in breathing or heart rate for more than 10 continuous minutes? (walking, carrying a light load, climbing stairs)?**	1 n= 16 (18%) 2 n= 5 (5,6%) 3 n= 1 (1,1%) 4 n= 5 (5,6%) 5 n= 3 (3,4%) 6 n= 10 (11,2%) 7 n= 11 (12,4%) 8 n= 10 (11,2%) 9 n= 8 (9%) 10 n= 20 (22,5%)
51	**Covid-19 symptoms by how much did they increase the amount of time you spend sitting per day?**	1 n= 44 (49,4%) 2 n= 10 (11,2%) 3 n= 9 (10,1%) 4 n= 4 (4,5%) 5 n= 6 (6,7%) 6 n= 5 (55,6%) 7 n= 4 (4,5%) 8 n= 3 (3,4%) 9 n= 1 (1,1%) 10 n= 3 (3,4%)
52	**By how much did Covid-19 symptoms affect the amount of time spent resting, lying down, or being inactive during the day?**	1 n= 38 (42,7%) 2 n= 11 (12,4%) 3 n= 6 (6,7%) 4 n= 6 (6,6%) 5 n= 6 (6,6%) 6 7 (7,9%) 7 n= 4 (4,5%) 8 n= 4 (4,5%) 9 n= 2 (2,2%) 10 n= 5 (5,6%)
53	**How much did contracting Covid-19 interfere with your ability to perform activities vigorous (running, lifting heavy objects, sports, exercise)?**	1 n= 48 (53,9%) 2 n= 7 (7,9%) 3 n= 8 (9%) 4 n= 7 (7,9%) 5 n= 6 (6,7%) 6 n= 7 (7,9%) 7 n= 2 (2,2%) 8 n= 3 (3,4%) 9 n= 0 (0%) 10 n= 1 (1,1%)
54	**How much has contracting Covid-19 interfered with your ability to engage in moderate activities (walking, playing golf)?**	1 n= 61 (68,5%) 2 n= 7 (7,9%) 3 n= 7 (7,9%) 4 n= 5 (5,6%) 5 n= 0 (0%) 6 n= 4 (4,5%)

		7 n= 2 (2,2%) 8 n= 1 (1,1%) 9 n= 1 (1,1%) 10 n= 1 (1,1%)
55	**How much has contracting Covid-19 interfered with your ability to perform activities of daily living (daily hygiene, self-care)?**	1 n= 68 (76,5%) 2 n= 9 (10,1%) 3 n= 5 (5,6%) 4 n= 1 (1,1%) 5 n= 4 (4,5%) 6 n= 1 (1,1%) 7 n= 1 (1,1%) 8 n= 0 (0%) 9 n= 0 (0%) 10 n= 0 (0%)
56	**How much did contracting Covid-19 interfere with your ability to engage in social activities?**	1 n= 57 (64%) 2 n= 5 (5,6%) 3 n= 10 (11,2%) 4 n= 2 (2,2%) 5 n= 5 (5,6%) 6 n= 5 (5,6%) 7 n= 3 (3,4%) 8 n= 2 (2,2%) 9 n= 0 (0%) 10 n= 0 (0%)
57	**How much did you reduce your time spent on work or other activities after contracting Covid-19?**	1 n= 58 (65,2%) 2 n= 9 (10,1%) 3 n= 9 (10,1%) 4 n= 3 (3,4%) 5 n= 0 (0%) 6 n= 2 (2,2%) 7 n= 1 (1,1%) 8 n= 4 (4,5%) 9 n= 1 (1,1%) 10 n= 2 (2,2%)
58	**How much less attention did you pay to completing tasks after contracting Covid-19?**	1 n= 52 (58,4%) 2 n= 11 (12,4%) 3 n= 6 (6,7%) 4 n= 5 (5,6%) 5 n= 3 (3,4%) 6 n= 6 (6,7%) 7 n= 2 (2,2%) 8 n= 0 (0%) 9 n= 2 (2,2%) 10 n= 2 (2,2%)

Table 4. Demographic data and characteristics of participants