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Data Descriptor

Comprehensive Dataset on Pre-SARS-CoV-2 Infection Sports-Related Physical Activity Levels, Disease Severity, and Treatment Outcomes: Insights and Implications for COVID-19 Management

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Abstract: This dataset aimed to explore associations between pre-SARS-CoV-2 infection exercise and sports-related physical activity (PA) levels and disease severity, along with treatments administered following the most recent SARS-CoV-2 infection. A comprehensive analysis investigated the relationships between PA categories ("Inactive", "Low PA", "Moderate PA", "High PA"), disease severity ("Sporadic", "Episodic", "Recurrent", "Frequent", "Persistent"), and treatments post-SARS-CoV-2 infection ("No treatment", "Home remedies", "Prescribed medication", "Hospital admission", "Intensive care unit admission") within a sample population (n = 5829) from the Hellenic territory. Utilizing the Active-Q questionnaire, data were collected from February to March 2023, capturing PA habits, participant characteristics, medical history, vaccination status, and illness experiences. Findings revealed an independent relationship between preinfection PA levels and disease severity (χ^2 = 9.097, df = 12, p = 0.695). Additionally, a statistical dependency emerged between PA levels and illness treatment categories (χ^2 = 39.362, df = 12, p < 0.001), particularly linking inactive PA with home remedies treatment. These results highlight the potential influence of preinfection PA on disease severity and treatment choices following SARS-CoV-2 infection. The dataset offers valuable insights into the interplay between PA, disease outcomes, and treatment decisions, aiding future research in shaping targeted interventions and public health strategies related to COVID-19 management.

Dataset: The dataset has been submitted as a supplement to this paper (see Supplementary file S2_Data.xlsx).

Keywords: exercise; long COVID; mRNA; post-COVID-19 conditions (PCCs); postacute sequelae of SARS-CoV-2 infection (PASC); performance; SARS-CoV-2; viral vector

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1. Summary

Physical activity (PA) has demonstrated important effects on human cellular metabolism, notably enhancing mitochondrial function through pAMPK activation and diminishing proinflammatory cytokines via intricate signaling pathways initiated by contraction-

dependent signaling cascades [1]. Beyond these cellular mechanisms, PA plays a multifaceted role in mitigating noncommunicable diseases (NCDs) and hypertension, regulating body weight, fostering psychological well-being, and enriching overall quality of life [2–7]. On the other hand, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) interactions within cells have been associated with disrupting mitochondrial homeostasis, potentially triggering immune evasion and exaggerated inflammation, characteristic of COVID-19 [8–10]. Additionally, this virus has been observed to interfere with immune regulatory mechanisms, resulting in an intricate disruption of the delicate balance between proinflammatory and anti-inflammatory responses [11–13]. This dysregulation may significantly contribute to the cytokine storm often observed in severe COVID-19 cases, hindering the production of crucial anti-inflammatory cytokines. Consequently, such imbalances heighten susceptibility to inflammation-mediated tissue damage, amplifying the severity of the disease [11–13]. However, PA's potential indirect impact on mitigating the severity of the SARS-CoV-2 infection remains an area of burgeoning interest. Moreover, investigations regarding the associations between pre-SARS-CoV-2 infection exercise and sports-related PA levels and subsequent disease severity, along with the treatments administered postinfection, remain notably sparse in the current research literature.

Therefore, the primary objective underlying the creation of this dataset was to achieve a comprehensive understanding of the potential associations between exercise and sports-related PA levels prior to SARS-CoV-2 infection and two key aspects: (i) the severity of the disease, and (ii) the treatments administered following the most recent SARS-CoV-2 infection. A secondary aim was to conduct a comprehensive statistical analysis to explore the statistical independence or associations between categorical variables representing PA levels prior to SARS-CoV-2 infection (specifically categorized as "Inactive", "Low PA", "Moderate PA", and "High PA") and (i) the severity of the disease (categorized as "Sporadic", "Episodic", "Recurrent", "Frequent", and "Persistent"), and (ii) the treatments received post the most recent SARS-CoV-2 infection (categorized as "No treatment", "Home remedies", "Prescribed medication", "Hospital admission", and "Intensive care unit admission").

The voluntary sample population (n = 5829), drawn from the Hellenic territory, adhered to self-inclusion and exclusion criteria. Data collection spanned from February to March 2023 (a two-month period), involving the utilization of the Active-Q (an online, interactive questionnaire) to automatically assess weekly habitual sports-related PA among adults prior to their last SARS-CoV-2 infection. The questionnaire also captured participant characteristics, such as ethnicity, region of residence, educational level, number of underlying medical conditions that might be associated with severe COVID-19 illnesses, preillness vaccination history, occurrences of SARS-CoV-2 re-infections, disease severity, and illness treatment following their most recent SARS-CoV-2 infection.

The dataset reveals key insights into the relationships between pre-SARS-CoV-2 infection PA levels and disease severity as well as treatment outcomes among respondents: (i) the independence of sports-related PA level prior to SARS-CoV-2 infection and disease severity categories ($\chi^2 = 9.097$, df = 12, $p = 0.695$); and (ii) the dependency of sports-related PA level prior to SARS-CoV-2 infection and illness treatment categories ($\chi^2 = 39.362$, df = 12, $p < 0.001$), although post hoc comparisons indicated statistical dependency only between inactive PA level and home remedies treatment.

In practical terms, the insights gleaned from this dataset have the potential to inform public health strategies and clinical decision-making related to COVID-19. Understanding the relationship between preinfection PA levels and disease severity, as well as treatment outcomes, could guide recommendations for individuals to maintain or improve their physical activity levels as a protective measure. Additionally, identifying the statistical dependency between inactivity and home remedies treatment highlights the importance of tailored healthcare interventions for specific subgroups of patients, ultimately contributing to more effective management of SARS-CoV-2 infections. Moreover, this dataset not only contributes to our understanding of the relationship between PA and SARS-CoV-2

outcomes, but also serves as a useful tool for researchers to address a wide range of research questions related to COVID-19 and its management. Its potential for reuse extends beyond the scope of the current survey, making it a valuable asset for the scientific community in advancing knowledge of COVID-19.

This dataset is part of a collaborative project and builds on previous research with the same sample [14], and thus it includes some data (e.g., age, body mass index, and some nominal variables) that have been published before [14,15]. However, the current analysis complements previous reports [14,15] and extends our investigations into the multifaceted aspects of postacute SARS-CoV-2 infection, with a specific focus on PA levels prior to SARS-CoV-2 infection. Therefore, this article enhances the value of the previously published studies in several significant ways. To begin with, this dataset contributes to the advancement of current knowledge by furnishing an extensive and intricate array of participant data. Secondly, it introduces a set of supplementary variables that had not been previously investigated in the published research. Lastly, researchers will find this dataset valuable for conducting a diverse array of statistical analyses, expanding upon the original study, which primarily focused on descriptive statistics and population averages. This expansion enhances the versatility of the dataset, thereby extending its potential utility for forthcoming research endeavors in the field.

2. Data Description

Data were obtained from a large cohort consisting of 5829 volunteers who actively participated in this study. The data collection process involved utilizing the sports-related section of the Active-Q questionnaire [14,16], along with additional integrated items (i.e., simple questions), which are detailed in Supplementary file S1_Active-Q_modified. Participants provided information about their anthropometric characteristics (Table 1), ethnicity, region of residence, educational attainment, and habitual sports-related physical activity one to two weeks prior to their most recent SARS-CoV-2 infection. Additionally, respondents disclosed the number of underlying medical conditions that might be associated with severe COVID-19 illness, their preillness vaccination profile, the type(s) of vaccines received prior to illness, the occurrence of SARS-CoV-2 reinfections, the severity of the disease, and the treatment administered following their most recent SARS-CoV-2 infection. Subsequently, these data were automatically grouped and categorized using an online interactive platform, as detailed in Supplementary file S2_Data, within the sheet labelled "data-metadata". The frequency and relative frequency of these groups are reported in Table 2. The Supplementary file S2_Data, within the sheet labelled "data-metadata" contains body mass (kg) and height (cm) values transformed to body mass index ($kg \cdot m^{-2}$); age (yrs) in raw format; sports-related physical activity level, sex at birth, ethnicity, region of residence, education level, SARS-CoV-2 reinfections, preillness vaccination profiles/types, number of underlying medical conditions that could be related to severe illness with COVID-19, disease severity, and illness treatment classification in nominal and categorical formats.

Table 1. Anthropometric traits presented as the mean ± SD (95% CI) of the respondents.

Variable	Overall (n = 5829)	Males (N = 1962)	Females (N = 3867)
Age (yrs)	45.6 ± 10.3 (45.4–45.9)	47.5 ± 10.8 (47.0–48.0)	44.7 ± 10.0 (44.4–45.0)
Height (cm)	170.0 ± 9.0 (169.7–170.2)	178.7 ± 7.3 (178.3–179.0)	165.5 ± 6.1 (165.3–165.7)
Body mass (kg)	75.7 ± 17.1 (75.3–76.2)	88.3 ± 15.0 (87.6–88.9)	69.4 ± 14.3 (68.9–69.8)
BMI ($kg \cdot m^{-2}$)	26.1 ± 5.0 (26.0–26.2)	27.6 ± 4.4 (27.4–27.8)	25.3 ± 5.1 (25.1–25.5)

Abbreviations: BMI—body mass index; CI—confidence interval; N—subgroup's sample size; n—group's sample size; SD—standard deviation.

A chi-square test of independence revealed that among respondents, sports-related PA level prior to SARS-CoV-2 infection and disease severity (following the most recent SARS-CoV-2 infection) categories were not dependent ($\chi^2 = 9.097$, df = 12, p = 0.695; Table 3). On

the contrary, chi-square analysis between PA level and illness treatment indicated statistical significance (χ^2 = 39.362, df = 12, $p < 0.0001$; Table 4). However, Bonferroni adjustment post hoc comparisons indicated statistical dependency only between inactive PA level and home remedies treatment ($p < 0.0001$). For access to both the primary dataset and accompanying metadata, please refer to Supplementary file S2_Data, specifically the sheet titled "data-metadata".

Table 2. Frequency, relative frequency, and 95% CI of respondents (n = 5829) subgrouped by sex at birth, age, body mass index, PA level, ethnicity, region of residence, education level, number of underlying medical conditions, preillness vaccination profile, preillness vaccine type(s) received, incidence of SARS-CoV-2 reinfections, disease severity and illness treatment.

Variable	Subgroup, Frequency (%), 95% CI
Sex at birth	Males, 1962 (33.7), 32.4–34.9 Females, 3867 (66.3), 65.1–67.5
† Age (yrs)	Young (18–29), 464 (8.0), 7.3–8.6 Adults (30–49), 3074 (52.7), 51.4–54.0 Middle-aged adults (50–59) 1959 (33.6), 32.4–34.8 Old adults (60–69), 328 (5.6), 5.0–6.2 70+ (≥70), 4 (0.1), 0.0–0.1
† Body mass index ($kg \cdot m^{-2}$)	Underweight (<18.5), 112 (1.9), 1.6–2.3 Acceptable weight (18.5–24.9), 2556 (43.8), 42.6–45.1 Overweight (25.0–29.9), 2081 (35.7), 34.5–36.9 Obese (≥30), 1080 (18.5), 17.5–19.5
† PA level ($MET\text{-}min \cdot week^{-1}$)	Inactive (0), 1909 (32.7), 31.5–33.9 Low PA (0–499), 1073 (18.4), 17.4–19.4 Moderate PA (500–1000), 710 (12.2), 11.3–13.0 High PA (>1000), 2137 (36.7), 35.4–37.9
Ethnicity	Caucasian, 5789 (99.3), 99.1–99.5 African, 10 (0.2), 0.1–0.3 Latino, 8 (0.1), 0.0–0.2 Asian, 11 (0.2), 0.1–0.3 Other, 11 (0.2), 0.1–0.3
† Region of residence	Urban region, 4184 (71.8), 70.6–72.9 Peri-urban region, 1358 (23.3), 22.2–24.4 Rural or off-the-grid region, 287 (4.9), 4.4–5.5
† Education level (certificate)	Primary school certificate or lower, 5 (0.1), 0.0–0.2 Lower secondary school certificate, 60 (1.0), 0.8–1.3 Upper secondary school certificate, 660 (11.3), 10.5–12.1 Post-secondary school certificate, 428 (7.3), 6.7–8.0 Bachelor degree, 2271 (39.0), 37.7–40.2 MSc/master's degree, 2120 (36.4), 35.1–37.6 PhD/doctorate, 285 (4.89), 4.3–5.4
† Number of underlying medical conditions	No conditions, 2410 (41.3), 40.1–42.6 1 condition, 2858 (49.0), 47.7–50.3 2–5 conditions, 539 (9.2), 8.5–10.0 6–10 conditions, 22 (0.4), 0.2–0.5 ≥10 conditions, 0 (0.0), ----
† Preillness vaccination profile	Unvaccinated, 1222 (21.0), 19.9–22.0 Partially vaccinated, 2421 (41.5), 40.3–42.8 Fully vaccinated, 2186 (37.5), 36.3–38.7
† Preillness vaccine type(s) received	No vaccine, 1222 (21.0), 19.9–22.0 mRNA, 3732 (64.0), 62.8–65.3 Viral vector, 226 (3.9), 3.4–04.4 Protein subunit, 4 (0.1), 0.00–0.1 Combination of vaccines, 645 (11.1), 10.3–11.9

Table 2. *Cont.*

Variable	Subgroup, Frequency (%), 95% CI
Incidence of SARS-CoV-2 re-infections (frequency)	Infected one time, 4093 (70.2), 69.0–71.4 Infected two times, 1552 (26.6), 25.5–27.8 Infected three times, 171 (2.9), 2.5–3.4 Infected four times, 8 (0.1), 0.0–0.2 Infected five times, 3 (0.05), 0.0–0.1 Infected six times, 2 (0.03), 0.0–0.1
Disease severity	Sporadic, 288 (5.0), 4.4–5.5 Episodic, 3402 (58.4), 57.1–59.6 Recurrent, 1588 (27.2), 26.1–28.4 Frequent, 484 (8.3), 7.6–9.0 Persistent, 67 (1.1), 0.9–1.4
Illness treatment	No treatment, 1044 (17.9), 16.9–18.9 Home remedies, 3614 (62.0), 60.7–63.2 Prescribed medication, 1085 (18.6), 17.6–19.6 Hospital admission, 62 (1.1), 0.8–1.3 ICU admission, 24 (0.4), 0.2–0.6

† Pre-SARS-CoV-2 last infection. Abbreviations: CI, confidence interval; ICU, intensive care unit; MET, metabolic equivalent task (1MET = 3.5 $mlO_2 \cdot kg^{-1} \cdot min^{-1}$); mRNA, messenger ribonucleic acid; PA, sports-related physical activity; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

Table 3. Cross-tabulation analysis (chi-square test for independence: $\chi^2 = 9.097$, df = 12, p = 0.695) of disease severity after SARS-CoV-2 infection and sports-related physical activity levels prior to infection among respondents (n = 5829).

Variable		Sporadic, (N = 288)	Episodic, (N = 3402)	Recurrent, (N = 1588)	Frequent, (N = 484)	Persistent, (N = 67)
Inactive, (N = 1909)	Count	91	1099	525	175	19
	% of total	1.6	18.9	9.0	3.0	0.3
	Adjusted residual	−0.4	−0.9	0.3	1.7	−0.8
Low PA, (N = 1073)	Count	52	616	302	88	15
	% of total	0.9	10.6	5.2	1.5	0.3
	Adjusted residual	−0.2	−0.7	0.7	−0.1	0.8
Moderate PA, (N = 710)	Count	36	404	209	54	7
	% of total	0.6	6.9	3.6	0.9	0.1
	Adjusted residual	0.2	−0.8	1.4	−0.7	−0.4
High PA, (N = 2137)	Count	109	1283	552	167	26
	% of total	1.9	22.0	9.5	2.9	0.4
	Adjusted residual	0.4	2.0	−1.8	−1.0	0.4

Abbreviations: N—subgroup's sample size; n—group's sample size; SARS-CoV-2—severe acute respiratory syndrome coronavirus 2; PA—sports-related physical activity prior to infection.

Table 4. Cross-tabulation analysis (chi-square test for independence: $\chi^2 = 39.362$, df = 12, p < 0.001) of illness treatment following SARS-CoV-2 infection and sports-related physical activity levels prior to infection among respondents (n = 5829).

Variable		No Treatment, (N = 1044)	Home Remedies, (N = 3614)	Prescribed Medication, (N = 1085)	Hospital Admission, (N = 62)	ICU Admission, (N = 24)
Inactive, (N = 1909)	Count	377	1103	402	21	6
	% of total	6.5	18.9	6.9	0.4	0.1
	Adjusted residual	2.6	−4.6 *	3.3	0.2	−0.8
Low PA, (N = 1073)	Count	170	684	204	8	7
	% of total	2.9	11.7	3.5	0.1	0.1
	Adjusted residual	−2.0	1.3	0.4	−1.1	1.4

Table 4. *Cont.*

Variable		No Treatment, (N = 1044)	Home Remedies, (N = 3614)	Prescribed Medication, (N = 1085)	Hospital Admission, (N = 62)	ICU Admission, (N = 24)
Moderate PA, (N = 710)	Count	107	487	110	4	2
	% of total	1.8	8.4	1.9	0.1	0.0
	Adjusted residual	−2.1	3.9	−2.3	−1.4	−0.6
High PA, (N = 2137)	Count	390	1340	369	29	9
	% of total	6.7	23.0	6.3	0.5	0.2
	Adjusted residual	0.5	0.8	−2.0	1.7	0.1

* Statistical significance for adjusted residual (z) values greater than 4.58226 (two-tailed). Abbreviations: ICU—intensive care unit; N—subgroup's sample size; n—group's sample size; SARS-CoV-2—severe acute respiratory syndrome coronavirus 2; PA—sports-related physical activity prior to infection.

3. Methods

3.1. Participants

Potential study participants were informed using an open invitation approach employing a snowball sampling strategy. This involved disseminating information about the study through various channels, including social media platforms, email networks, and nationwide public advertisements. Eligibility required certain criteria: All participants should have had a confirmed SARS-CoV-2 infection within the last 30–40 days, verified through diagnostic tests like polymerase chain reaction or blood antigen tests. Additionally, participants had to be ≥18 yrs old and residents of Greece. Exclusion criteria included recent vaccination within two weeks before the most recent SARS-CoV-2 infection, involvement in strict weight loss programs, and recent gestation or childbirth within one year of the study's commencement. Before voluntarily participating, individuals were presented with written information detailing the study's objectives and procedures and subsequently provided their informed consent. This research obtained approval from the institutional review board at the local university, ensuring adherence to ethical research standards.

3.2. Survey Instrument and Data Acquisition Procedure

In the context of our study, we utilized a specific section of the Active-Q, an online and interactive questionnaire (refer to Supplementary file S1_Active-Q_modified) [16–19], that is pertinent to sports and physical activity. This questionnaire was employed between February and the end of March 2023 to automatically calculate the weekly habitual PA of adults, one–two weeks before their last SARS-CoV-2 infection, quantified in terms of energy expenditure per week (MET-min·week^{-1}). We determined this energy expenditure using the updated 2011 Compendium of Physical Activities, with the details outlined in previous publications [16,20] (see Supplementary file S3_Corresponding MET values). The questionnaire also included inquiries about participants' ethnic background, sex assigned at birth, age, body mass, height, region of residence (urban proximity), education level, and the presence of underlying medical conditions that might increase the risk of severe illness with COVID-19 (e.g., cancer, chronic kidney disease, cystic fibrosis, tuberculosis, diabetes, neurocognitive disorders, essential hypertension, chronic heart disease, chronic liver disease, chronic lung disease, stroke or cerebrovascular disease, organ transplant recipient, substance use disorders, sickle cell anemia or thalassemia, HIV, age ≥ 65 yrs, obesity, physical disabilities, smoking) with responses categorized as "yes" or "no". Additionally, there was a follow-up question on these medical conditions to automatically tally the number of specific conditions. The questionnaire also covered one to nine questions (depending on previous responses and follow-up questions) related to participants' vaccination status before illness (vaccinated/unvaccinated), vaccine type(s), number of doses received, time elapsed between the last vaccine dose and infection, and, if applicable, the time between the last two vaccine doses. Moreover, we included a question on the frequency of SARS-CoV-2 reinfections. The assessment of coronavirus disease severity involved an inquiry into

participants' self-reported frequency [21] of primary symptoms that manifested subsequent to SARS-CoV-2 infection. These symptoms encompassed fever exceeding 38 °C, dyspnea, chills, cough, sore throat, generalized body aches, chest pain, abdominal pain, back pain, joint pain, headache, weakness, fatigue, altered mental status, diarrhea, vomiting, and loss of smell and/or taste. In regards to the management of SARS-CoV-2 infection, a specific query was posed concerning the utilization of particular treatments, to which participants could respond with either affirmative or negative responses [14]. Notably, all questions, except those regarding anthropometric characteristics and reinfection incidents, featured a predefined set of response options [14]. To ensure the authenticity of prospective participants and to prevent automated bot submissions, we implemented reCAPTCHA v3 during our data collection process. Additionally, to deter multiple submissions from the same individuals, we enforced a restriction based on personal email addresses not already recorded in the response sheet. This helped to minimize the possibility of multiple responses from the same email addresses. Furthermore, we have previously provided comprehensive details on the validity, reliability, and methodology of this online questionnaire in other publications [14,16,17].

Based on the information provided by the respondents, the questionnaire's platform automatically classified them into several categories [15,21–25], as outlined in Table 2. Specifically, for the scope of the current study, respondents were categorized into four groups for PA level ("Inactive", "Low PA", "Moderate PA", and "High PA"), five groups for disease severity ("Sporadic", "Episodic", "Recurrent", "Frequent", and "Persistent"), and five groups for illness treatment ("No treatment", "Home remedies", "Prescribed medication", "Hospital admission", and "Intensive care unit admission") [21,22].

3.3. Data Analysis

We also examined among respondents, the associations between categories of PA level prior to SARS-CoV-2 infection and (i) disease severity, and (ii) illness treatment after their last SARS-CoV-2 infection using the chi-square test for independence. The dataset included information on five independent groups of disease severity ("Sporadic", "Episodic", "Recurrent", "Frequent", and "Persistent"), and five groups of illness treatments ("No treatment", "Home remedies", "Prescribed medication", "Hospital admission", and "Intensive care unit admission") and their corresponding PA level (i.e., "Inactive", "Low PA", "Moderate PA", or "High PA") prior to most recent SARS-CoV-2 infection. The significance threshold for all analyses was established at a p-value less than 0.05, denoted as $p < 0.05$. In cases where the chi-square test revealed significant differences, we conducted Bonferroni adjustment post hoc tests (pairwise comparisons) to identify specific group differences [26]. Statistical analyses were carried out using SPSS for windows (v. 29.0, IBM Corp, Armonk, NY, USA). The data were summarized using appropriate descriptive statistics. Categorical variables were presented as frequencies, relative frequencies in percentages, and their associated 95% confidence intervals (CI). Continuous variables were reported as means, along with standard deviations and their respective 95% CIs.

3.4. Limitations

Our research exhibits various limitations, particularly concerning the dataset and the process of data collection. The findings are specific to the Hellenic adult population. The selection of vaccine combinations was influenced by medical guidance, individual choices, and vaccine accessibility [27], rendering it difficult to control for variables like supplementary doses, heterologous regimens, and booster shots. We could not account for specific SARS-CoV-2 variants, and asymptomatic infections might also be unaccounted for. The study's data collection period has a narrow timeframe, potentially missing long-term health consequences [28] and/or findings may not apply to individuals with prolonged intensive care unit hospitalization or fatal outcomes. Limited sample sizes in specific subgroups restrict the generalizability of findings. Data on physical activity relies on self-reported information, which could introduce recall bias. Psychological, socioeconomic, and

nutritional factors, and daily priorities could influence the observed impact of post-acute SARS-CoV-2 infection on sporting activities, but these were not controlled for.

3.5. Strengths, Theoretical Implications, and Recommendations for Future Research

In spite of the aforementioned limitations, this study presents notable strengths, including a robust sample size drawn from a specific demographic and employing a meticulously validated questionnaire (Active-Q). Notably, the study's comprehensive statistical analyses offer a pioneering contribution to scientific discourse. This investigation aims to contribute to the exploration of the associations between pre-SARS-CoV-2 infection sports-related PA levels, disease severity, and subsequent treatment outcomes, adding to the evolving body of knowledge in this field. The depth of analysis yields profound insights into the intricate interconnections between PA, disease progression, and treatment modalities. Such insights hold significant promise for guiding future research endeavors, enabling the development of tailored interventions and informed public health strategies for the management of COVID-19. The multifaceted nature of the investigation lends itself to shaping evidence-based recommendations and fostering a more nuanced understanding of the role of PA in the context of disease severity and treatment decisions in the realm of COVID-19.

Furthermore, the dataset presented in this study holds pivotal theoretical implications for scientists, theorists, and colleagues engaged in the realm of infectious diseases, exercise physiology, and public health. Firstly, it contributes to the burgeoning field of exercise immunology by shedding light on the potential mechanisms linking preinfection physical activity levels and disease severity post-SARS-CoV-2 infection. The observed independent relationship between physical activity categories and disease severity raises intriguing questions about the underlying biological pathways and the modulation of immune responses in viral infections. This paves the way for further investigations into the precise cellular and molecular mechanisms mediating the influence of physical activity on immune function, inflammatory responses, and disease progression in the context of SARS-CoV-2.

Moreover, the statistical dependency between physical activity levels and treatment outcomes following SARS-CoV-2 infection underscores the need for a nuanced understanding of individualized therapeutic approaches based on patients' preinfection activity profiles. This aspect elucidates the potential role of tailored interventions in disease management, emphasizing the importance of considering lifestyle factors, like physical activity, in designing personalized treatment strategies.

The findings also prompt theoretical inquiries into the social and behavioral aspects of healthcare decision-making. Understanding why individuals engaged in low or inactive levels of physical activity tend to opt for home remedies postinfection could illuminate sociopsychological factors influencing health-related choices during and after an illness, providing a foundation for explorations in health psychology and patient decision-making processes.

Physical activity constitutes a multifaceted intervention renowned for its role in averting and managing NCDs and hypertension, fostering favorable body weight regulation, bolstering psychological well-being, and augmenting overall quality of life. Nevertheless, a notable research gap persists concerning the enduring effects of customized PA interventions on the convalescence pathways among individuals recuperating from post-acute SARS-CoV-2 infection.

4. Value of the Data

Comprehensive Insights into COVID-19 Outcomes: These data offer a detailed exploration of the associations between preinfection physical activity levels and key COVID-19 outcomes, including disease severity and treatment choices. Researchers studying COVID-19 epidemiology, public health, and clinical management can gain valuable insights.

Informing Public Health Strategies: Public health professionals and policymakers can utilize these data to better understand how physical activity may impact COVID-19

outcomes. This knowledge can inform the development of targeted interventions aimed at improving overall health and resilience against the virus.

Enhanced Research Opportunities: The dataset's rich content, encompassing variables such as vaccination history, comorbidities, and reinfections, provides fertile ground for researchers to investigate a wide range of COVID-19-related questions. It serves as a valuable resource for advancing our understanding of the pandemic.

Tailored Healthcare Interventions: Clinicians and healthcare providers can benefit from the identification of statistical associations between inactive physical activity levels and specific treatment choices, such as home remedies. These findings highlight the importance of tailoring healthcare interventions to different patient profiles.

Global Relevance: While drawn from the Hellenic territory, the dataset's insights into the relationship between physical activity and COVID-19 outcomes hold relevance for a global audience. Researchers and health professionals worldwide can draw on these findings to inform their own regional strategies and practices.

Supplementary Materials: The following supporting information can be downloaded at https://www.mdpi.com/article/10.3390/data9020023/s1, Supplementary file S1_Active-Q_modyfied.docx; Supplementary file S2_Data.xlsx; Supplementary file S3_Corresponding MET values.docx.

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

Data Availability Statement: Data and metadata are hosted with the article.

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