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The Effects of the COVID-19 Pandemic on Training Volume, Intensity Distribution, and Racing Practices of Cyclists

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Abstract

The COVID-19 pandemic of 2020 led governments around the world to respond by imposing lockdown restrictions, which limited the ability of cyclists to train and race as they typically would. While limited research describes the impact on professional and elite riders, less is known about the impact on recreational/sub-elite riders. Given that cyclists of this level contribute a high proportion of the cycling population, we set out to conduct a survey to determine the impact of COVID-19 on their training and racing practices. Questions covered their demographics and background, followed by their typical training, such as regular session type and frequency, training intensity distribution, and their racing practices. A total of 146 cyclists responded, and results revealed that despite decreases in the general population's physical activity levels, 71.9% of respondents actually increased their cycling volume in 2020, with a significantly higher volume in every month in 2020 compared to 2019. Intensity distribution was also modified due to lockdowns, the volume of high intensity training was increased by 30.7% of respondents, while 37.3% decreased their high intensity training volume, often alongside an increase in overall volume. Racing practices were also altered, in-person racing dropped 56.6%, while e-racing on platforms such as Zwift increased by 114.7%. Despite the challenges, 67.9% of respondents reported feeling fitter in 2020, and 57.8% specifically felt the period of lockdown increased their fitness. These findings highlight the adaptability of recreational and sub-elite cyclists and their resilience to endure an unprecedented global pandemic.

Keywords

Cycling; Intensity Distribution; Training; Racing; Indoor Cycling; Survey

1 Introduction

The Coronavirus disease 2019 (COVID-19) first emerged in Wuhan, China, in December 2019, rapidly spreading around the globe, leading the World Health Organization to declare it a global pandemic in March 2020 (WHO, 2024). Countries responded with various measures such as lockdowns and social distancing, and contact tracing in an attempt to curb the spread, protect vulnerable populations, and healthcare systems. In the UK, sports facilities remained closed beyond the general lockdown from the 23rd of March to June 2020, despite other restrictions gradually lifting (Brown, Kirk-Wade, Baker, & Barber, 2021; Eshelby, Sogut, Jolly, Vlaev, & Elliott, 2022). These lockdowns imposed logistical challenges for athletic training. For example, Washif et al. (2022) reported that globally only 39% of endurance athletes could maintain their pre-lockdown sport-specific training intensity. Across the athletic population, training volume decreased, although elite athletes in some countries were permitted to continue training outdoors (Washif et al., 2022). Due to global lockdowns and travel restrictions, on the 15th of April 2020, the Union Cycliste Internationale (UCI) suspended races until the 1st of August. Many major races moved from traditional spring and summer dates to autumn (UCI, 2020).

The lockdown orders posed specific challenges to cyclists who were typically used to completing high volumes of road cycling. Due to government restrictions, many cyclists were forced to move towards indoor training. While indoor cycling can be traced back to the 19th century (Richardson, Berger, & Smith, 2023), technological developments in direct drive, 'smart' turbo trainers provide an improved indoor cycling experience. Direct drive turbo trainers connect directly to a cyclist's own bike and provide an improved 'road feel' by incorporating a large flywheel, which better maintains inertia, replicating the mass of cyclists and their bike on the road. This results in a minimal biomechanical and physiological difference between indoor and outdoor riding (Smith & Berger, 2020).

Virtual cycling applications, such as Zwift, can enhance the indoor training experience. The resistance applied by smart turbo trainers is altered to match the changes in gradient, or drafting effects the rider's avatar encounters in the virtual worlds, to provide an immersive experience. Zwift also hosts virtual races (e-races); these grew in popularity during lockdowns by providing an alternative outlet for competing. Races with professional riders were organised on the platform as early as April 2020, which helped teams guarantee some form of exposure for sponsors. The races were around 1 hour long, held on a range of virtual courses, and live streamed to viewers. The first virtual race (albeit not held on Zwift) replicated the last 32km of the Tour of Flanders route. When broadcast on live Belgian TV it received 600,000 viewers, which is comparable to the Belgian TV viewership of a stage of the Tour de France (~700,000) (Fincoeur, Bongivanni, & Gesbert, 2021). Further fan engagement was provided with virtual rides on Zwift, where professional cyclists and members of the public could ride together (Fincoeur et al., 2021). The first Team INEOS ride was also live streamed on YouTube, and as of April 2025, the INEOS and Zwift channels had a combined 287,801 views. A further development for e-cycling was the classification as a formal cycling discipline when the inaugural UCI Esport world championships, held in December 2020 on Zwift. The winner, a German rower Jason Osborne (Zwift, 2020), went on to sign a professional contract and ride at the World Tour level (Alpecin-Deceuninck, 2024).

Despite the rise of e-cycling, the cancellation of in-person races, and government-imposed travel and movement restrictions, the COVID-19 pandemic impacted the training practices of cyclists. Restrictions varied by country, and training for professional athletes was dependent on local laws. Muriel, Courel-Ibanez, Cerezuela-Espejo, and Pallares (2021) found Spanish stay-at-home restrictions caused UCI Pro Team cyclists to move to indoor training. This resulted in a decrease in total training time from their typical 17.7 ± 3.6 $h \cdot wk^{-1}$, to 11.7 ± 3.9 $h \cdot wk^{-1}$. This was especially noticeable in a drop in zone 1 (recovery) intensity training duration from 5 ± 1.9 $h \cdot wk^{-1}$ to 2.4 ± 1.7 $h \cdot wk^{-1}$ (~50%), with similar decreases in zone 3-6 volumes observed. Only zone 2 (endurance) training increased with the stay-at-home order, from 3.1 ± 0.8 $h \cdot wk^{-1}$ to 3.5 ± 1.9 $h \cdot wk^{-1}$. These changes resulted in an increase in body mass (66.4 ± 4.8 kg, to 67.6 ± 4.3 kg) and decreases in 5-minute power (6.5 ± 0.4 $W \cdot kg^{-1}$ to 5.7 ± 0.5 $W \cdot kg^{-1}$) and 20-minute power (5.5 ± 0.3 $W \cdot kg^{-1}$ to 5.0 ± 0.4 $W \cdot kg^{-1}$). Similarly, Leo, Mujika, and Lawley (2021) followed 12 UCI Continental-level U23 cyclists throughout COVID-19 restrictions. They reported a change in training hours ranging between -15.1% to -18.6%, a decrease in the distance of -23.7% to -25% and a decrease in session frequency of between -4.7% and -6.3%. Due to large inter-individual variations, this was not statistically significant. These findings demonstrate the adaptations that were made by professional teams.

Despite the research on professional cyclists (Muriel et al., 2021) and elite U23s (Leo et al., 2021), there is little understanding of the changes in training practices across a larger sample of riders of varying age, sex, and performance levels. This is relevant given the reduced physical activity levels reported across the general population (Sansone-Pollock et al., 2023), and the possibility that cyclists at sub-elite level were under restrictions closer to the general population than those of professional cyclists. Given that recreational and sub-elite cyclists contribute a greater proportion of the cycling population, it is necessary to understand how the pandemic has reshaped training behaviours and strategies within the global cycling community. This may provide insight into the long-term effects of the pandemic on athletic performance and training methodologies, potentially informing future approaches to athlete preparation in similar circumstances. Therefore, this survey aimed to investigate the impact of the COVID-19 lockdowns on the training volume, intensity distribution, and changes to racing practices among recreational and sub-elite cyclists from around the world. We hypothesised that in response to COVID-19 restrictions, cyclists would reduce their training volume and compensate for this with an increase in training intensity.

2 Material and Methods

2.1 Recruitment

Following approval from the Teesside University School of Health & Life Sciences ethics committee, and in accordance with the declaration of Helsinki, cyclists were recruited via social media (Facebook groups, Twitter & Reddit) and various online cycling forums to complete an online survey (Online Surveys, JISC, Bristol, UK) examining their training and racing practices, comparing 2019 to the 2020 period of COVID-19 imposed government restrictions. The survey was aimed at cyclists aged ≥ 16 years, who self-identified as consistently performing > 2 sessions per week, although there was no requirement to have raced to participate. To avoid any skew in the comparison between years, respondents must have been free from any self-defined significant injury or illness over the period questions relate to (January to September 2019 and 2020). The questionnaire was open between the 20th of October and the 20th of November 2020. It took around 20 minutes to complete, and all responses were anonymous.

2.2 Survey Design

Questions consisted of a mixture of numerical, multiple choice, and free text, short answer questions organised in a logical order which progressed from questions on the cyclists' background such as age, sex, country of residence, and training history to questions on the equipment they use for training monitoring and platforms used for load monitoring and indoor training. Prior to distribution, the survey was pilot tested with local cyclists and other academic staff to assess content validity. Following this, minor changes were made to the structure to ensure a logical flow and the questions to enhance readability. No formal reliability assessment of the survey was performed prior to distribution. The primary aim of the questionnaire was addressed with questions on monthly training volume in 2019 and 2020, along with the types of sessions they performed, and the number and type of races completed. A free-text response follow-up was used to allow the respondents to explain their reasoning for any alterations in training and racing practice in response to lockdowns. A list of the survey questions is included in the supplementary materials.

2.3 Statistical Analysis

All responses were downloaded from Online Surveys into Microsoft Excel (v365, Microsoft, Redmond, WA, USA) and manually tidied to remove any obviously outlying data or mistakes (e.g. height clearly in inches, not centimetres). The qualitative questions were coded and used to generate themes for discussion.

A paired *t*-test was used to compare month-to-month training volumes and the number of on-bike, e-cycle, and off-bike sessions in 2019 and 2020. For a more in-depth comparison of the year-to-year changes in sessions performed, descriptive statistics were used. A one-way repeated-measures ANOVA with Bonferroni-adjusted post-hoc testing was used to compare training intensity distribution across periods of the season (R Studio v2025.05.0, Posit Software, Boston, MA, USA). All effect sizes are expressed using Cohen's d and interpreted as small ($d = 0.2$), medium ($d = 0.5$), or large ($d = 0.8$) per Cohen (1988).

3 Results

3.1 Respondents' Background

A total of 146 cyclists responded to the survey. Most respondents lived in the UK (60), USA (41), Canada (8) and Germany (7), with no other country providing more than two respondents. On average, respondents had 8.5 ± 9.8 years of cycling experience. Table 1 displays respondents' demographics.

Table 1. Respondent demographics (mean ± SD).

Sex	*n*	Age (years)	Height (cm)	Mass (kg)
Overall	146	37.2 ± 13.6	178.7 ± 8.4	74.7 ± 11.5
Male	131	37.6 ± 13.7	180.2 ± 7.3	76.2 ± 10.7
Female	15	33.5 ± 12.5	165.8 ± 5.6	61.2 ± 9.2

The respondents self-reported a functional threshold power (FTP) of 273.7 ± 48.6 W (3.65 ± 0.72 $W \cdot kg^{-1}$) for males and 221.2 ± 38.7 W (3.74 ± 0.8 $W \cdot kg^{-1}$) for females. Overall, 63.1% of the respondents reported that they regularly race, with a greater proportion of female respondents reporting that they engage in racing (61.1% of males, 80% of females).

3.2 Training Monitoring

At the time of the survey (October-November 2020), 75.2% of respondents used online training platforms, with 87.2% of those already using the platforms before the COVID-19 pandemic. Zwift was by far the most popular with 85 users (78% of those using online platforms), followed by TrainerRoad (26.6%), Sufferfest and Road Grand Tours (both 9.2%), and all other platforms mentioned had fewer than five users (3.4%).

A total of 81.3% of respondents followed a structured training plan. Of these, 41.9% were self-coached, 39.3% used interactive training software, 16.2% had a coach, and 2.6% used generic online/text-based programmes. To monitor their training, a heart rate monitor was the most used device, used by 89% of respondents, followed by a power meter (69.7%), a smart turbo trainer (64.1%), a smart watch (48.3%), and a sleep tracker (26.9%). Rollers (13.8%) and a non-smart turbo (11.7%) were less commonly used. Strava was the most used digital training log, used by 87.6% of respondents, followed by Garmin Connect (42.8%), Training Peaks (35.2%), Golden Cheetah (11.7%) and Trainer Road (5.5%). There was a clear preference for digital platforms, with only seven respondents (4.8%) using a paper-based training log.

3.3 Training Volume and Session Types

In total, 44.8% of respondents reported reducing their outdoor riding to some extent during the period of lockdowns, including 10.3% who stopped all outdoor riding. In contrast, 17.9% did not reduce their outdoor riding, and 32.4% increased the amount of outdoor riding they were doing. Weekly cycling session frequency increased significantly from 2019 (4.15 ± 2.1) to 2020 (4.79 ± 2.1), $p < .0001$, $d = 0.35$. In contrast, off-bike session frequency was unchanged from 2019 (2.08 ± 2) to 2020 (2.08 ± 2.1), $p = 1.00$, $d = 0$.

The specific sessions performed by respondents are presented in Table 2. Recovery rides saw a large increase in 2020, while endurance rides only saw a small increase in frequency in 2020. Threshold rides increased in frequency, along with high intensity intervals. Cross training in other endurance sports saw a slight increase in frequency, while participation in team sport cross training increased by 20%. Circuit-style cross training decreased by 23% in 2020 in comparison to 2019.

Training volume was significantly higher for every month in 2020 than 2019 (Figure 1). However, the effect sizes were small (range d = 0.21 to 0.48). In total, 71.9% of respondents performed more total hours in 2020 than in 2019 (2.2% equal). When comparing the average monthly training volume for January to September 2019 to the same period in 2020, females showed a greater increase, from 25.3 hours per month to 33.3 hours per month (31.6%), compared to a 19.2% increase in males (from 26.5 to 31.6 hours per month).

Table 2. Count of total sessions performed by all respondents in a typical week in 2019 & 2020

Type of Session	2019	2020	Change (%)
Endurance	126	128	+ 1.6
Unstructured	95	101	+ 6.3
High Intensity Interval	97	103	+ 6.2
Recovery	92	111	+ 20.7
Threshold	102	111	+ 8.8
Cross Training- Other Endurance	46	48	+ 4.3
Cross Training- Team Sports	5	6	+ 20
Cross Training- Circuit Training	13	10	- 23
Strength Training	56	60	+ 7.1

3.4 Training Intensity Distribution

Respondents' intensity distribution varied across the phases of the season. Low intensity training (%) was significantly higher in the off-season compared to pre-season ($p < .0001$, d = 0.49), and in-season ($p < .0001$, d = 0.61). The proportion of moderate intensity training did not differ between periods, while high intensity training significantly increased from off-season to pre-season ($p < .0001$, d = 0.54). Respondents were free to define low, moderate and high intensity zones as they would typically use them.

The biggest difference between male and female intensity distribution came in the percentage of low and moderate intensity training. The percentage of high intensity training was generally similar, although the difference in-season was more pronounced. While the overall intensity distribution displayed in Figure 2 was polarised at all stages of the year, in female cyclists, this was not the case. During the pre-season and in-season periods, there was a greater proportion of moderate training than low-intensity training.

Respondents described in an open-ended question if, and how, they altered their intensity distribution in response to lockdown. From coding the responses, 30.7% added more high intensity, 37.3% less, and 30% did not change the amount of high intensity. Typically, those who reported increasing the amount of high intensity did so with a move towards indoor training and e-racing, while those who decreased the amount of high intensity did so in combination with an increase in outdoor endurance rides and a drop in structured riding.

Most respondents stated that they altered their intensity distribution in 2020 due to races being cancelled or postponed (43.4%). The next most frequent response was due to a change in training plans, aimed at improving performance (16%), followed by the move to indoor training (14.2%), and more free time (12.3%). A lack of motivation/energy (3.8%) and a lack of time (2.8%) were less frequently cited reasons for a change in intensity distribution.

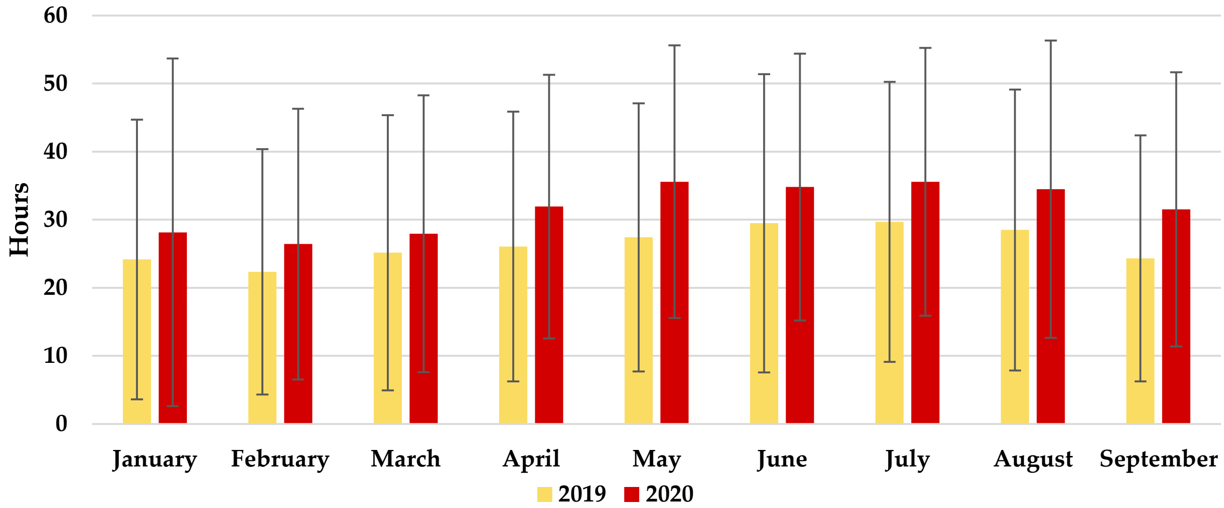

Figure 1. Total monthly cycling hours in 2019 and 2020.
Each month displayed a statistically significant difference between 2019 and 2020. February, April, May, July, August and September *p* < .0001. January *p* = .008, March *p* = .015, and June *p* = .002.

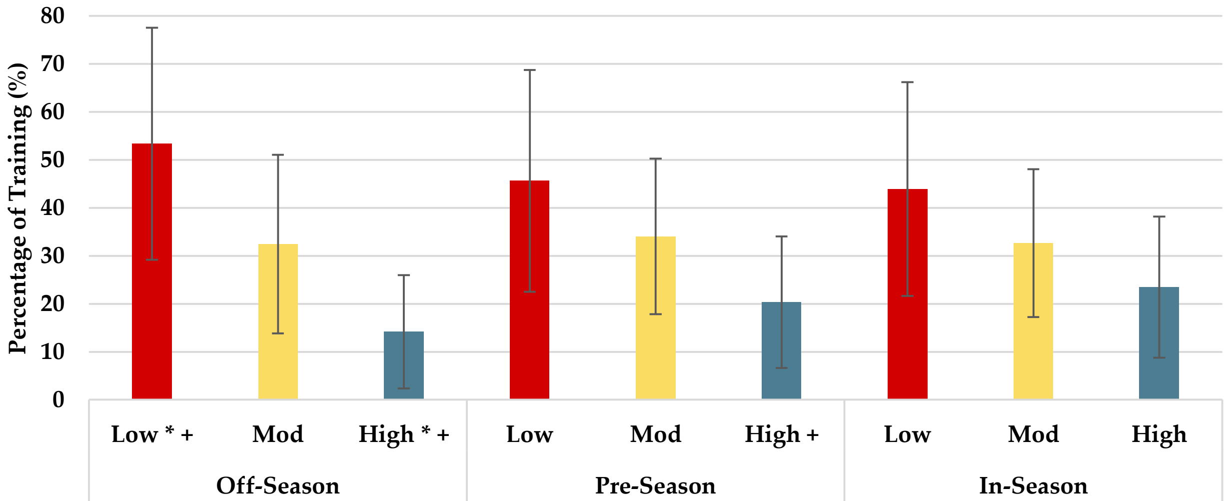

Figure 2. Training intensity distribution across phases of the season.
* Denotes statistically significant difference from pre-season, + denotes statistically significant difference from in-season (Figure 2).

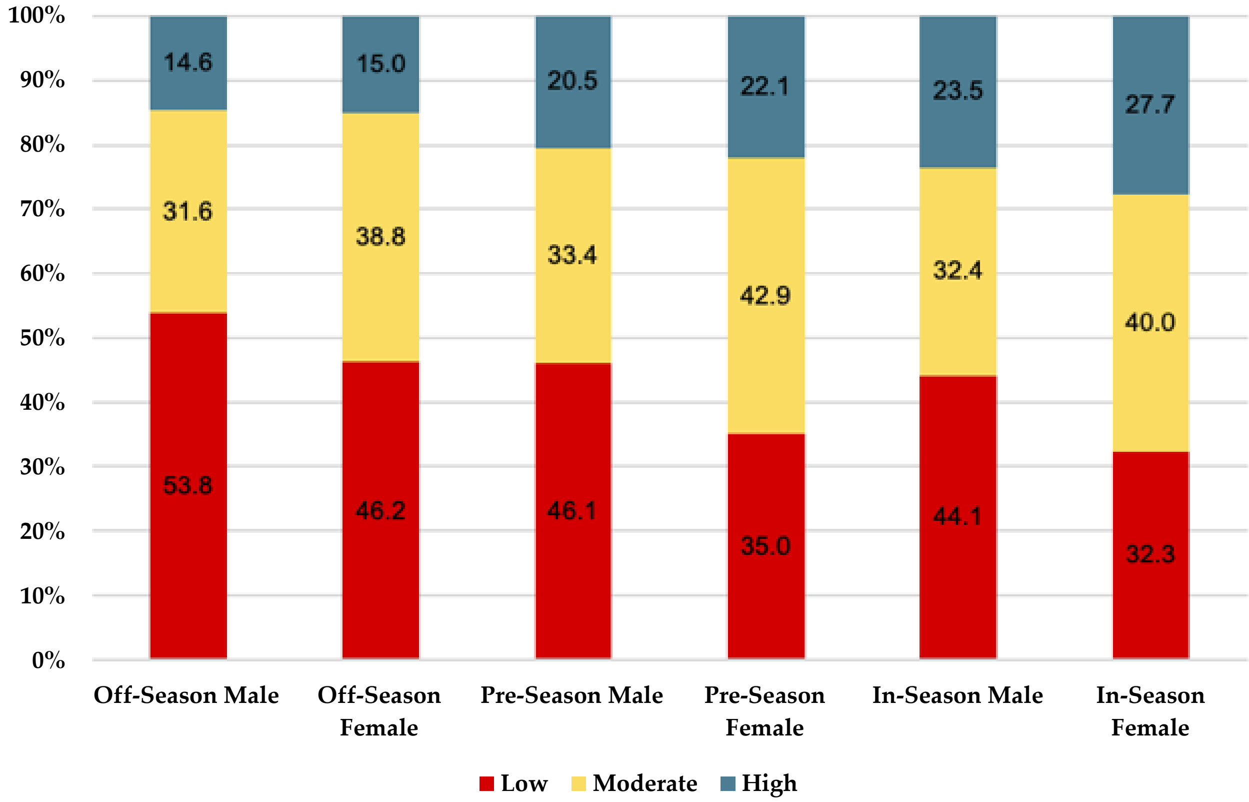

Figure 3. Training intensity distribution differences by sex.

3.5 Racing Practices

To gain a greater understanding of the change in racing practices, respondents were asked to count the types of races they did in 2019 and 2020. Table 3 displays the total count from all respondents.

Table 3. Types of races performed.

Type of Race	2019 Count	2020 Count	Change (%)
Criterium/Closed Circuit	36	13	- 63.9
Cyclocross	17	2	- 88.2
Road Racing	60	26	- 56.6
Time Trials	39	38	- 2.6
Track Racing	12	4	- 66.6
e-racing	34	73	+ 114.7
None	42	43	+ 2.4
Other	26	12	- 53.8

Cyclocross, circuit, road, track and other types (mostly mountain bike and multisport) numbers all declined from 2019 to 2020, while time trials were largely unaffected. e-racing increased in popularity, while the number of respondents who did not race was very similar year-to-year. The total number of in-person races respondents performed dropped significantly from 2019 to 2020 (2019: 11.1 ± 14.8, 2020: 2.5 ± 4.8, $p < .0001$, $d = 0.68$), while the total number of e-races significantly increased (2019: 3.6 ± 9.6, 2020: 6.6 ± 12.3, $p = .0005$, $d = 0.27$).

3.6 Impact of Lockdowns

Most respondents (88.8%) said there was some form of lockdown in their location, and of those, 57.8% felt that over the period of lockdown, their fitness on the bike increased, while 21.9% felt they maintained a similar level of fitness, and 20.3% felt it decreased. When comparing across all of January-September 2019 to the same period in 2020, 67.9% felt they were fitter in 2020, while 14.6% felt they were fitter in 2019, and 17.5% reported similar levels of fitness both years.

Following the period of lockdown, 61.7% of respondents said they would make some form of permanent change to their training. The numbers displayed in brackets are a count of mentions, with multiple comments possible. When asked to elaborate on what they would change (or which change they would maintain) going forward, the most frequent mention was to include more indoor riding (19), which was often in combination with more high-intensity training (7). In contrast, including more endurance riding (10) was common, often combined with more overall volume (12), and more structure (14). Respondents also mentioned that they would include cross training/strength & conditioning work (6) more frequently. The least common changes respondents would make were to reduce the amount of structured training (2), and reduce high intensity, indoor riding and volume (all one mention).

4 Discussion

The aim of this study was to determine the impact of COVID-19 lockdowns on the training volume, intensity distribution and racing practices of cyclists worldwide. We hypothesised that cyclists' training volume would decrease, and intensity would increase to compensate. Our results found that while 44.8% did cut down on outdoor riding to some extent, 32.4% actually increased, and 17.9% didn't change the amount of outdoor riding. Furthermore, only 30.7% increased their volume of high intensity training, suggesting the lockdowns did not have the expected effect on training practices. Surprisingly, 71.9% of respondents ended up performing more total hours on the bike in 2020 than in 2019, often due to having more available time to train with working from home. Overall, every single month in 2020 (Jan-Sep) had a significantly higher training volume than in 2019.

Furthermore, the type of sessions performed changed from 2019 to 2020. Coded responses revealed the greatest shift in sessions performed was in the number of recovery rides (+20.7%), which differed from Muriel et al. (2021), who found time in zone 1 (recovery intensity) dropped significantly. Other than the increase in available time, it is not clear specifically why recovery rides would increase to such an extent. Time in intensity zones was not requested from respondents, although it is unlikely the frequency of recovery rides would have increased along with a drop in overall duration at that intensity, given that they are typically no more than 60-90 minutes.

This was followed by increase in threshold training sessions (+8.8%), which can be difficult to perform outdoors as the interval duration is higher, and often a road with an incline is preferred, so the increase in frequency may have corresponded with the move indoors, where intensity can be well regulated by a turbo trainer. We found that the frequency of endurance rides in a typical week increased by 1.6% in 2020 compared to 2019. While Muriel et al. (2021) found endurance training volume increased 12.9%, more than our findings, although as endurance rides are typically the longest in duration, a small increase in frequency could mean a much larger change in volume at that intensity.

Comparable increases were reported in both unstructured rides (+6.3%) and high intensity interval sessions (+6.2%), suggesting mixed approaches to training, and in contrast to the coded responses, which revealed 37.3% of respondents had decreased the volume of high intensity training. This could be a result of shorter duration sessions, perhaps indoors compared to outdoors, and how respondents classify a session. For example, Sylta, Tønnessen, and Seiler (2014b) highlight that athletes may use a time in zone approach, or a session goal approach to classification. Respondents using a time in zone approach could explain the increase in session frequency and a decrease in overall high intensity training. Alternatively, as respondents stated they generally had more time to train, high intensity could simply be a smaller proportion of overall training. In comparison, Muriel et al. (2021) found professional cyclists showed a decrease of 41.2% and 52.2% in zones 5 & 6, respectively. However, this is less comparable to our finding as we measured session frequency rather than time in zone directly.

There was a notable difference in intensity distribution by sex. While respondents overall took a pyramidal approach in each phase of the season, females displayed a change from a pyramidal distribution, with descending (self-reported) time in zone as intensity increased in the off-season, which became a threshold distribution in the pre-season and in-season, with most of the time spent at moderate intensity. It was reported by Herrero-Molleda, Álvarez-Álvarez, Floría, and García-López (2023) in a systematic review that female cyclists had higher external and internal loads during training and racing than male cyclists, although this was due (in the case of racing) to shorter distances. In our study, the average monthly volume across the period of comparison (January-September) was close. In 2019, males averaged 26.5 hours per month, females 25.3 hours per month, and in 2020, males averaged 31.6 hours per month, and females 33.3 hours per month. The biggest difference was in the increase from 2019 to 2020 (males 19.2%, females 33.3%).

Our results contrast those of Leo et al. (2021), who found a non-statistically significant decrease in training hours of between 15.1% to 18.6%, and Muriel et al. (2021), who found a significant decrease of 33.9%, while we found that our respondents' training volume significantly increased every month in 2020. Although it should be noted that training volumes reported here were much lower than those of full-time riders in those studies. For example, the highest average volume month (May 2020) was 35.6 ± 20 hours, while the professional riders in Muriel et al. (2021) still averaged 46.8 hours per month (calculated from their reported weekly volume). During lockdown, many recreational cyclists were actually able to dedicate more time to training. As one respondent stated, "No races to train for, but lots of free time for long rides".

The change in training practices was reported to be largely due to the cancellation and postponement of races, which no longer required higher intensity training to prepare for them. The number of road races respondents raced in 2020 was 56.6% lower than 2019, up to 88.2% less for cyclocross racing. The racing seasons might have played a part in this, given that road racing is mostly a spring and summer sport, while cyclocross takes place in the winter and spring months, when COVID-19 restrictions likely led to more cancellations. Less affected was time trial racing, with only a 2.6% drop in races in 2020. In time-trialling, riders typically start 30-60 seconds apart, leaving a greater opportunity for social distancing. In contrast, e-racing on platforms such as Zwift, where riders compete from home, increased by 114.7%. Despite the expectation that the pandemic introduced cyclists to indoor training, it was already commonplace. 75.2% used indoor training platforms at the time of the survey and 87.2% of those already did before the pandemic. Zwift was the most common platform used, 78% of respondents who used online platforms stated they used Zwift, the next most frequent, TrainerRoad, was used by 26.6% (respondents were able to select multiple platforms).

The overall outcome of training during lockdown restrictions was minimal over 7 weeks in Leo et al. (2021) where they found no significant difference in performance measures such as incremental test peak power (pre 471 ± 36 W, post 470 ± 30 W) and VO_{2max} (pre 75.4 ± 4.4 ml·kg^{-1}·min^{-1}, post 75.8 ± 2.8 ml·kg^{-1}·min^{-1}). Muriel et al. (2021) found that the 7-week home restriction their riders faced resulted in a 9% drop in peak 5-minute power and a 12% drop in peak 20-minute power as measured during training and racing pre-lockdown, then in training and virtual races during the last two weeks of lockdown. They attributed this decline in power to a reduction of around a third of the training volume. All zones (other than zone 2) had lower volume during lockdown. In contrast, our findings suggest that 57.8% of respondents felt the period of lockdown increased their fitness on the bike. Factors such as working from home or periods of not working may have allowed for more time cycling than they would typically have, as seen from their increase in training volume.

It is important to recognise that these results came from self-reported subjective data, where respondents may or may not have performed any physiological or performance testing to determine this change. While this work investigated the training and racing practices of a relatively large sample of cyclists, it was self-reported, which has limitations. For example, time in zone was not measured as it was not practical and not possible to test riders to ensure they used a consistent method of zone determination, which limits the comparison between Muriel et al. (2021) and Leo et al. (2021) who had direct access to their riders with physiological data collection possible. It cannot be said with certainty that an increase in frequency of a type of ride, e.g. high-intensity intervals, would result in an increase in time in the corresponding zone, which the other authors were able to directly measure. While Sylta, Tønnessen, and Seiler (2014a) suggested elite athletes generally report their training intensity with accuracy, Borresen and Lambert (2006) found wide variety in reported training duration (24% overestimated, 17% underestimated, and 59% accurately estimated duration) in a physically active population, which leads to uncertainty in our results compared to a directly measured participants. A further area to highlight was the discrepancy between the percentage of males (61.1%) and females (80%) who raced. This may be skewed by the sample size (male *n* = 131, female *n* = 15), but potential differences in intensity and volume are important to consider.

5 Practical Applications

Self-reported changes in fitness suggest that either a high-volume, low-intensity model or the less common low-volume, high-intensity model resulted in beneficial changes in fitness, both in 2020 as a whole, and specifically during periods of lockdown. Likely aided by additional factors such as working from home, additional recovery between sessions may have increased to aid training adaptations. Cyclists and coaches should consider using indoor cycling as a training mode and outlet for racing during future periods of travel restrictions, inclement weather, and other factors which would previously result in missed training sessions. As cyclists generally improved fitness regardless of their approach, the adaptability of cyclists and alternative modes of training suggest improvements in fitness are possible despite circumstances. Furthermore, national cycling federations should consider promoting the role e-cycling and e-racing can play in the continuity of cycle sport during unexpected local and global events, which would limit traditional participation.

Supplementary Materials: The survey questions are available to view in Appendix 1.

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Conflicts of Interest: The authors declare no conflict of interest.

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