

PERFORMANCE ANALYSIS FOR ATHLETES IN ORIENTEERING RESUMING THE COMPETITIONS CANCELED DURING THE PANDEMIC

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Abstract

Due to the high risk of COVID-19 transmission, many sporting events, including orienteering competitions, have been canceled. Despite all the traffic restrictions imposed, the performance athletes remained active and trained individually with the remote supervision of the technical teams. We assume that training and competitions on routes with virtual checkpoints were a way of competing like to traditional sport and allowed participants to compare performance data. We aim to study the impact on performance generated by the preventive measures implemented. Materials and methods: The results obtained by 61 athletes, 56% male and 44% female were analyzed, with an average age of 20.7 years, who participated in control tests and international competitions before the pandemic and the resumption of the competitive system. **Results:** The number of athletes who took part in the control tests in 2021 decreased by 39.34% compared to 2019. The average running time of the seniors, in the control tests, increased slightly from 227.4 seconds / km with a standard deviation of 18.24 in 2019 to 226.7 seconds / km with the standard deviation of 28.56 in 2021. In the juniors, who ran in the two years, the running speed at the control tests increased from 266.5 seconds / km in 2019 to 246 seconds / km in 2021. The increase in the running tempo did not lead to a similar effect in international competitions. In the case of junior sprint competitions, the performances decreased from an average of 131.1% compared to the winning time in 2019 to an average of 138.8% in 2021. In long distance competitions the results were reduced in 2021 by 20.5% compared to 2019. The senior groups achieved an improvement in performance in medium distance races where they had an average of 107.5% in 2021 compared to 118, 6% in 2019 but had a decrease of 3% in the sprint and 17.4% in the long-distance events. **Conclusion:** The cancellation of international competitions in 2020, the isolation measures taken by the authorities and the fear of coronavirus infection have led to a decrease in the number of athletes in Orientation, who want to represent Romania in international competitions and decreased performance.

Keywords: elite athletes, performance, orienteering, the resumption of sports competitions

Introduction

In the wake of a global pandemic caused by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) that began in China, which led to isolation measures and the cancellation of sports competitions in 2020 (including the 2020 Olympics), elite athletes had to adjust and rethink their training regime to stay active but safe. Exercising outdoors offers many psychological benefits, reduces stress, increases self-esteem, improves self-esteem, improves the mood, etc. Because the virus has also been found in stool samples, contaminated environments, such as soil, can pose a threat to athletes' training even if they take place outdoors. The contaminated

environment can cause transmission through contact with mucous membranes, such as the eyes, mouth and nose.

The covid 19 pandemic has determined athletes and most people who play sports as a leisure activity to do sports individually for a long time. Individual training can negatively influence the optimal intensity distribution and performance improvement (The Faculty of Medicine at The Chinese University of Hong Kong CUHK finds that the coronavirus, 2020; Lu et al, 2019). Resuming group training does not rule out the fear of infection because despite all the scientific evidence promoted by the authorities, there are people who do not believe that the pandemic exists, and they can become infected and transmit the

virus to the athletes they it comes in contact with.

Numerous complex cognitive tasks make orienteering a special sport compared to other running events. During the competitions, under the pressure of time, there is a sequential process of choosing the variants between the checkpoints, map and terrain reading, keeping the running time at a high level, but without generating technical errors. Lack of these cognitive tasks can slow down decision-making processes (Mujika et al., 2020; Mahase, 2020) and the pandemic is added as a new stressor for mental health (Reardon, 2019). The loss of training specificity (Brearley, 2019; Foster, 1995) has been and remains a significant problem for coaches and athletes. In competitions and especially those with qualifications but also those with more age categories, the tasks mentioned above often take place in a distracting environment. Such an environment, where athletes run in different directions (depending on the category, qualification group, variant choice, etc.) was lacking in athletes who trained individually and participated in virtual competitions. Technical and athletic skills, self-confidence and self-trust are built and developed mainly in competitions. If a comeback to physiological and performance parameters can be restored within a few weeks of the resumption of short-term interrupted training (Silva, 2016) the period necessary to harmonize the relationship between exercise and cognitive performance remains to be determined. The intrinsic motivation, the joy of competing, the inner turmoil of being, of having a good race for the next competition, diminishes if the competitive system is

interrupted. By canceling the sporting events, the motivation of the athletes was diminished and the enthusiasm to train was reduced.

Assumption. Orienteering is an individual sport and the fact that it is practiced outdoors may suggest that the COVID-19 pandemic caused by coronavirus has had a minor impact on athletes who practice this sport.

Goal. The aim of this study is to ascertain, based on a comparative analysis, whether the performance of the national Orienteering teams, at the resumption of competitions, has undergone significant changes compared to the last participations before the COVID -19 pandemic and to identify ways of progress.

Materials and methods

The authors analyzed data sets obtained in control tests and in competitions, during 2019-2021, from 61 athletes, of different sexes and ages, who participated in selections for the national groups of juniors and seniors in orienteering. The independent variables for which data were recorded are age, sex and test and the dependent variables are the speed of the control test and the performance achieved in competitions, represented as a percentage, relative to the winning time. In terms of age, 59% are juniors and 41% are seniors (Fig.1). They participated in the selections for the national groups of juniors and seniors in orienteering, the European Youth Championships and the South East European Orienteering Championships. The analyzed data set includes the measurements performed between 06.04.2019 - 29.08.2021. Statistical analysis was performed using Excel and GraphPad Prism version 9.3.1.

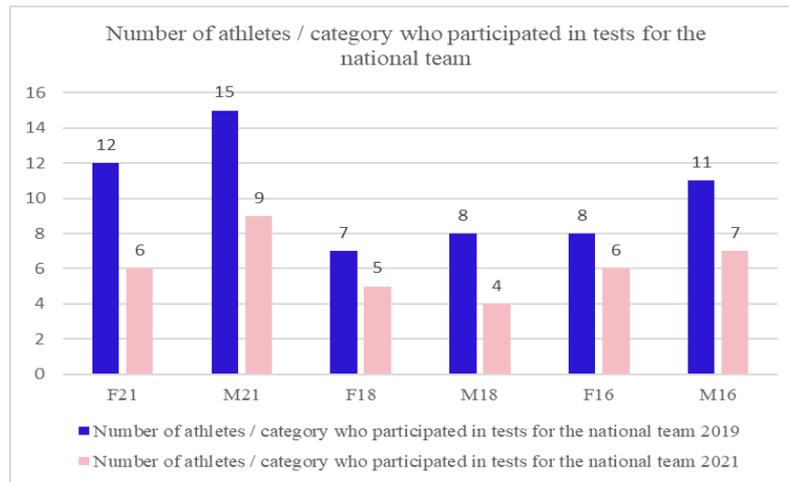


Fig.1 Number of athletes / category who participated in tests for the national team

Results. The number of athletes who took part in the control tests in 2021 decreased by 39.34% compared to 2019. The average running time of the seniors, in the control tests, increased slightly from 227.4 seconds / km with a standard deviation of 18.24 in 2019 at 226.7 seconds / km with the standard deviation of 28.56 in 2021 (fig. 2).

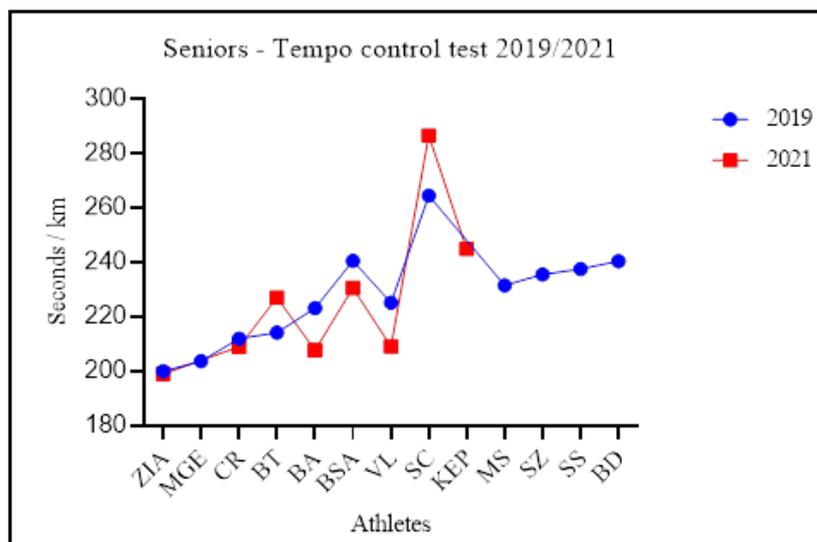


Fig.2 Seniors – Test running tempo 2019/2021

In juniors, who ran over the two years, the running speed at the control tests increased from 266.5 seconds / km in 2019 to 246 seconds / km in 2021 (fig.3).

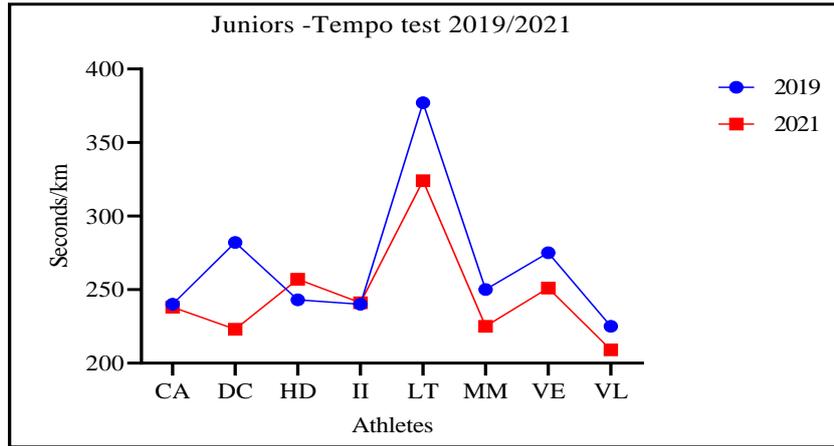


Fig.3 Seniors – Test running tempo 2019/2021

This is a natural progress that is mainly due to the two years of training that were added, and no assessments can be made regarding the effectiveness of fitness training. Increasing the running time did not lead to a similar effect in international competitions. In the junior sprint competitions, the performances decreased from an average of 131.1% compared to the winning time in 2019 to an average of 138.8% in 2021 (picture ...). In long distance competitions the results were reduced in 2021 by 20.5% compared to 2019 (fig.4). The senior groups achieved an improvement in performance in the middle-distance races where they had an average of 107.5% in 2021 compared to 118.6% in 2019 but had a decrease of 3% in the sprint and 17.4% in the long-distance tests(fig.5).

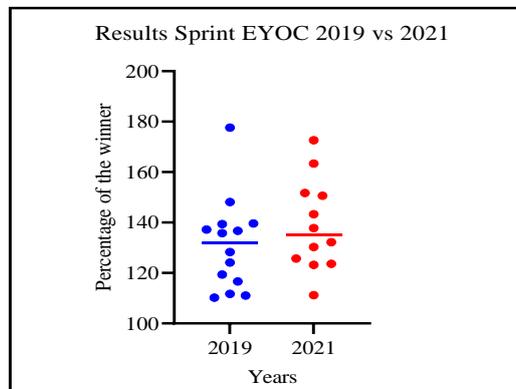


Fig.3 Results Sprint EYOC 2019 vs 2021

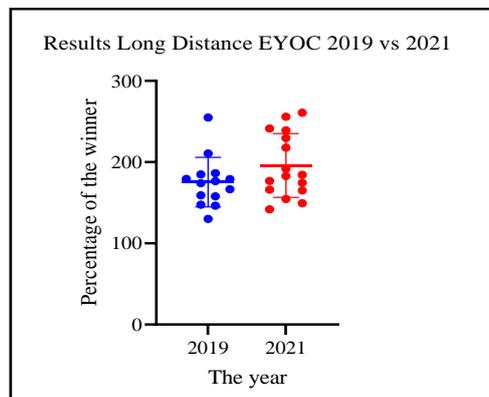


Fig.4 Results Long Distance EYOC 2019 vs 2021

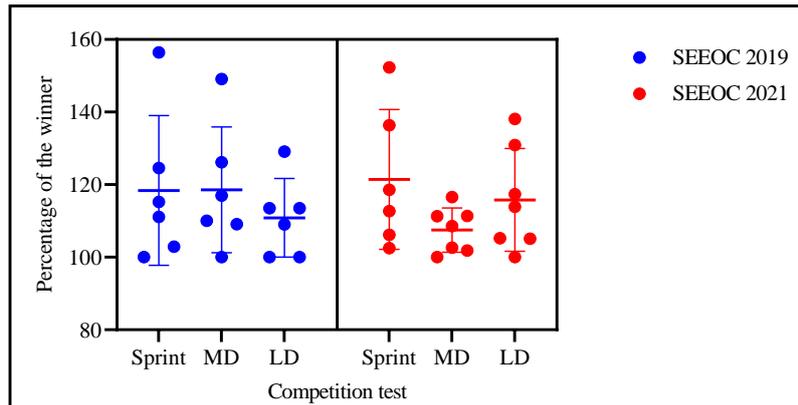


Fig.5 Seniors results- Mean with SD SEEOC 2019/2021

Conclusion

The cancellation of international competitions in 2020, the isolation measures taken by the authorities and the fear of infection with coronavirus, have led to a decrease in performance and a decrease in the number of athletes in Orienteering who participated in the selection for the forming of the national lots. From the analysis of the results obtained at the control tests it is observed that the athletes maintained and obtained an improvement of the physical training but lost in the fluency of the technical actions generated by the reduction of the number of competitions and specific trainings. Athletes who lived in areas with many orientation maps suffered less related to the specific training.

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