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Postlockdown Performance in French Swimming Championships

Nathan Miguens,^{1,2} Robin Pla,^{1,3} Audrey Difernand,^{1,2} Jean-François Toussaint,^{1,2,4} and Adrien Sedeaud^{1,2}



ECSS Sevilla 2022

Introduction

During the first COVID-19 European wave, in France, 1 month and 25 days, **strict confinement** was decreed with the possibility of going out for 1 hour a day to practice physical activity 1 km around their home. In France, swimmers were not able to swim at all during at least 8 weeks. The total training volume of French elite swimmers was reduced by 55.2%.

As a consequence, **physiological changes**, such as an increase in resting heart rate or a decrease in parasympathetic activity were described. Also, after lockdown, elite swimmers were authorized to train but no competition was organized until November, leading to an 8-month period without any competition. The impairment in physical training during lockdown, associated with a stressful situation and a lack of competition during such a period may have altered subsequent swimming performance.

The purpose of this study is to assess such changes through the proportions of French swimmers that **progressed, stagnated, or regressed** during the 2020 national championship compared with previous ones.

Method

All performances of French Elite Championships from 2000 to 2020 were collected by the swimming French Federation. All ages at the day of competition and race times in heats, semifinals and finals of individual events were gathered for **2344 male and 2032 female swimmers**.

First, a data set of the individual best performance among heats, semifinals and finals was carried out each year. Then, for each swimmer and each event of a given championship, a comparison of this individual best performance with the **last 2 performances of the previous championships** was computed. If a swimmer was injured or not qualified the previous year, the performance of the year before was selected. The process was repeated until 2 race times were available. If the **current performance was better than the last 2 ones**, the swimmer was considered to have improved in this event. However, if performance was worse, the swimmer was considered in a regression status. If performance was included between the other 2, the swimmer was categorized in the stagnation phase.

Results

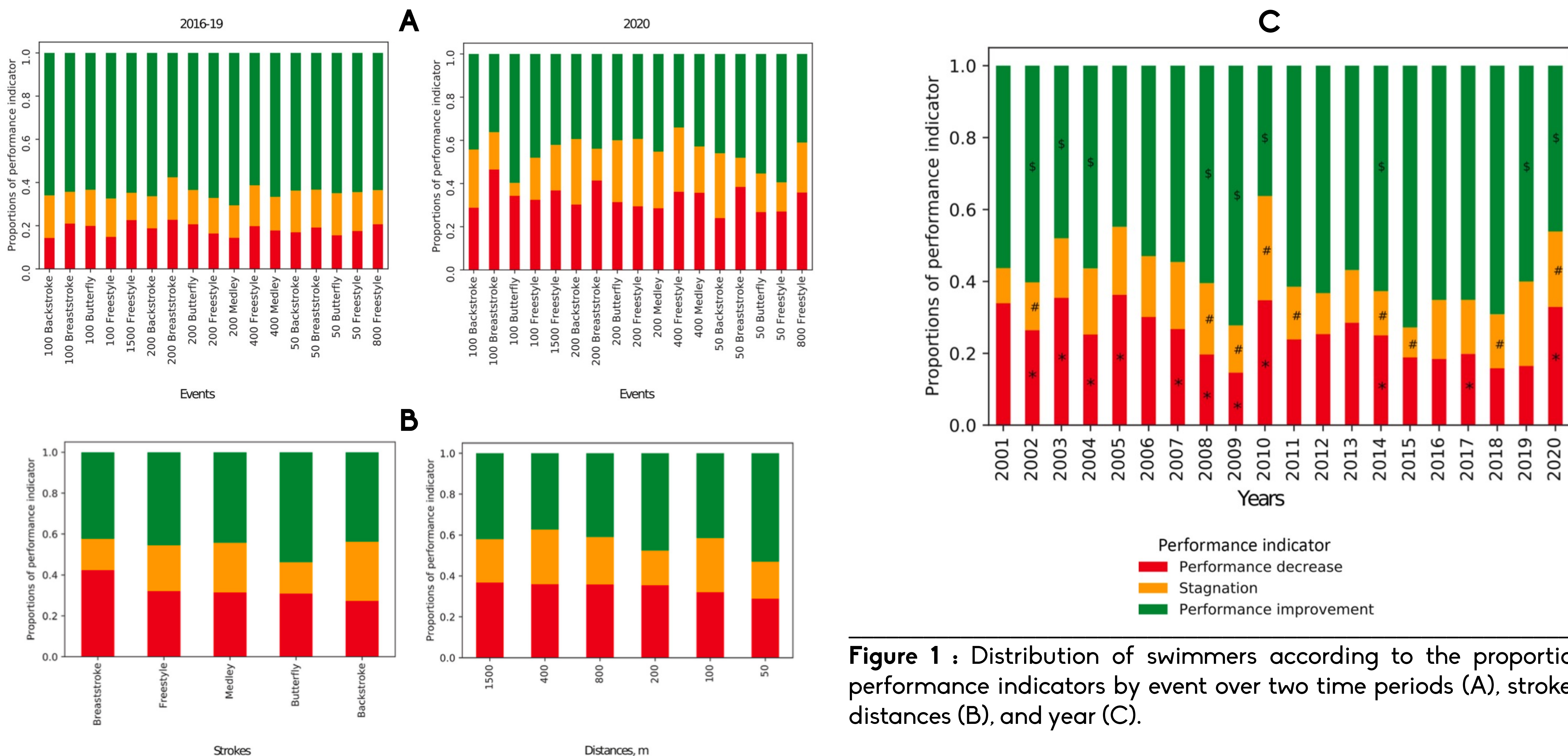


Figure 1 : Distribution of swimmers according to the proportion of performance indicators by event over two time periods (A), stroke and distances (B), and year (C).

Discussion

This study shows that elite swimmers had **more difficulty to increase personal best performance during the 2020** French national championships in comparison with the previous editions. The proportion of swimmers with performance regression significantly increased in 2020. This **trend was exacerbated among female, breaststroke, long-distance, and older swimmers**. The amplitude of the performance regression observed in 2020 is equivalent to that experienced in 2010 after the swimsuits ban.

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References

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