

Influence of the optimism on the impact of COVID-19 lockdown in Spain: analysis according to competition level

Influencia del optimismo en el impacto por confinamiento por COVID-19 en España: análisis en función de su nivel de competición

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Abstract: Competition cycling is a sport that is mainly trained outdoors. The home confinement that imposed the quarantine for COVID-19 in Spain from March to June 2020 meant the cancellation of all competitions and prevented training on the roads. Secluded at home, the cyclists had to train with what they had and face a situation of isolation that prevented them from maintaining training routines as well as access to the usual means and infrastructures. The passing of the days produced a multitude of symptoms and responses in the athletes. Knowing the most adaptive and detecting the least adaptive highlights the importance of the trait of optimism during the confinement and the impact that this situation had on cyclists in the under23, elite and master categories. The LOT-R questionnaire was used in the evaluation. The results show that cyclists categorized with low optimism in the u23 category were the most affected by confinement, presenting a greater number of negative thoughts about their sporting future, worse mood, greater negative affect and difficulties in maintaining daily routines, reconciling the dream and orient to the achievement of the objectives. In contrast, elite cyclists with high optimism experienced a greater perception of energy and a greater positive affect. These results highlight the importance of mediating variables such as optimism as well as the importance of evaluating the impact of events such as confinement in a differential way to detect the most vulnerable profiles.

Keywords: optimism, COVID-19, cyclists, competition, cycling psychology, lockdown.

Resumen: El ciclismo de competición es un deporte que se entrena principalmente al aire libre. El confinamiento en casa que impuso la cuarentena para el COVID-19 en España de marzo a junio de 2020 supuso la cancelación de todas las competiciones e impidió entrenar en las carreteras. Recluidos en casa, los ciclistas tuvieron que entrenar con lo que tenían y enfrentarse a una situación de aislamiento que les impedía mantener las rutinas de entrenamiento, así como el acceso a los medios e infraestructuras habituales. El paso de los días produjo multitud de síntomas y respuestas en los deportistas. Conocer a los más adaptativos y detectar a los menos adaptativos pone de manifiesto la importancia del rasgo de optimismo durante el encierro y el impacto que esta situación tuvo en los ciclistas de las categorías sub23, élite y máster. En la evaluación se utilizó el cuestionario LOT-R. Los resultados muestran que los ciclistas categorizados con bajo optimismo en la categoría sub23 fueron los más afectados por el encierro, presentando un mayor número de pensamientos negativos sobre su futuro deportivo, peor estado de ánimo, mayor afecto negativo y dificultades para mantener las rutinas diarias, conciliar el sueño y orientarse a la consecución de los objetivos. Por el contrario, los ciclistas de élite con alto optimismo experimentaron una mayor percepción de energía y un mayor afecto positivo. Estos resultados ponen de manifiesto la importancia de variables mediadoras como el optimismo, así como la importancia de evaluar el impacto de eventos como el confinamiento de forma diferencial para detectar los perfiles más vulnerables.

Palabras clave: optimismo, cuarentena, COVID-19, ciclistas, competición, confinamiento.

Introduction

On February 11, 2020, the World Health Organization (WHO) declared the existence of a new disease called Coronavirus Disease 2019 (COVID-19), caused by the SARS-CoV-2 virus and causing severe or severe acute respiratory syndrome in those infected, which was spreading rapidly throughout many countries

in the world. On March 4, the first fatal victim of this disease was announced in Spain. The disease was spreading rapidly, and on March 11, 2020, the WHO declared COVID-19 a pandemic. Following this announcement, on March 14, 2020, the Government of Spain declared a state of alarm to manage the health crisis and stop the spread of the virus, which would last until May 3, 2020. This state of alarm, declared throughout the country, implied the compulsory confinement of the entire population to their homes (with the exception of essential service workers), involving strict home isolation and restriction of

movement of the population, thus paralyzing all social, economic, educational and, of course, sporting activities. Undoubtedly, from that moment and in the following months, the population was in an absolutely unusual situation, in which the uncertainty and fear of contagion of the disease, due to the pandemic we were suffering, resulted in the population experiencing anxious and depressive symptoms, high levels of psychological distress and mood disorders among other symptoms (Brooks et al., 2020; Cao et al., 2020; Casagrande et al., 2020; Huang & Zhao, 2020; Nes, 2016; Sandin et al., 2020; Wang et al., 2020). The psychological consequences of the isolation produced by this situation of confinement were analyzed by the researchers, who observed how the children and adolescents suffered symptoms of anxious or anxious-depressive type, of different intensity, and even in some cases a post-traumatic stress disorder (Pedreira, 2020) as well as reported difficulties in concentration or irritability (Orgilés et al., 2020). Among the adult population, the most common fears suffered during confinement were contagion or death from disease, social isolation, financial income, as well as numerous emotional symptoms, with uncertainty and media exposure being the strongest predictors of the psychological impact of COVID-19 confinement (Sandín et al., 2020). Other studies warned of an increase in sleep problems (Balluerka et al., 2020; Medina et al., 2020) and a substantial change in physical exercise-related habits in the general population (León-Zarceño et al., 2021). During times of confinement, it has been shown that, in university students, physical activity, positive affect and sleep quality decreased and negative affect increased (Intelangelo et al., 2022; Maher et al., 2021; Zamarripa et al., 2021). Among the variables that may have moderated the impact on the mental health of the population, coping strategies (Jungmann & Witthöft, 2020; Rettie & Daniels, 2021), gender differences (León-Zarceño et al., 2021) or personality variables (Volk et al., 2020) have been highlighted.

In the case of athletes, this situation of confinement has been particularly difficult. For them, accustomed to training and maintaining routines to be physically prepared for their sport, the confinement meant a break with their usual sport practice. The athletes, accustomed to facing the stressful situations of a competition, were faced with a new challenge to face, which may have played a moderating role on their emotions (Jaenes et al., 2020). Optimism can also play a fundamental role in the management of difficult situations such as the one experienced during the lockdown, since it can diminish

the impact of vulnerability and leads to favorable expectations about the things that happen to one in life (Lozano-Díaz et al., 2020). Optimism has been studied from several approaches: on the one hand, it has been understood as a set of explanations that people give themselves in the face of events in their lives (Abramson, Seligman & Teasdale, 1978), and has been divided into two explanatory styles: optimistic and pessimistic. On the other hand, optimism has been analyzed from a dispositional construct approach, whereby it is considered a tendency to expect favorable consequences in different life events (Scheier & Carver, 1987), favoring confidence and perseverance to achieve goals, especially in unfavorable situations (Carver & Scheier, 2005).

Thus, optimistic people have a generalized predisposition to generate expectations of positive outcomes, even if they go through difficult situations, whereas pessimists tend to expect negative outcomes (Sánchez & Mendez, 2009). Some studies have analyzed the role of optimism in sports performance (Ortín et al., 2018). Other research about the role of optimism have provided interesting findings in different sports (Cantón, Checa & Budzynska, 2013; García-Naveira & Díaz, 2010; Ortín et al., 2011; Ortín, De la Vega & Gosálvez, 2013). We know that optimism maintains relationships with competitiveness, that older athletes are more optimistic than younger sportsmen, and that sportpeople are more optimistic than the general population (García-Naveira, Ruiz-Barquín & Ortín, 2015). However, no studies have been found that relate optimism to cycling, although some studies have inquired about the psychological impact of COVID-19 confinement on these athletes (Moreno-Tenas et al., 2021) since cycling is an endurance sport that needs to be trained outdoors, and, therefore, its practitioners may have been especially affected by confinement. However, there are hardly any studies that have shown the effect of confinement on professional cyclists.

Consequently, the aim of this work is to study how optimism influence the impact of confinement (during the phase with the greatest uncertainty) in cyclists, taking into account their sporting category. Specifically, emotions and thoughts about their future as cyclists, as well as daily and training habits were measured. It is expected that cyclists with lower levels of optimism have suffered more from the psychological impact of the confinement, presenting worse mood and more affectation in their daily habits, in training and in daily life.

Material and Method

Design and procedure

A cross-sectional online survey was conducted to evaluate physical exercise and psychological variables and emotions (mood and optimism) during the COVID-19 pandemic. The study was approved by the Ethics Committees of the Miguel Hernandez University. All participants signed the informed consent. The participants completed the online questionnaires during the month of April 2020, after one month of confinement. At that time, confinement and the highest peak of COVID-19 deaths and infections occurred in Spain. Participants were asked about their perception of training difficulties and emotions during confinement. To generate two different groups according to optimism levels to cyclists' performance (high and low optimism) and three groups according to their sport category (under23, elite and master).

Participants

A total of 264 male cyclists participated in this study with an average age of 32.43 ($sd=11.98$) were classified by sport category: *U23* ($n=88$), *elite* ($n=48$) and *master* ($n=128$). Subsequently, they were divided according to their score in optimism, dividing the sample into high optimism (scores above 66% of the total sample) and low optimism (scores below 33% of the total sample). Finally, the sample was distributed as: *U23* (*low optimism* = 48; *high optimism* = 25); *elite* (*low optimism* = 17; *high optimism* = 25); *master* (*low optimism* = 49; *high optimism* = 63). 46% of the cyclists were living in the quarantine with their families and only 5.7% were in solitary confinement during these days of confinement. 25.9% had a balcony at home, 30.4% had an outdoor area at home and 13.3% of the cyclists reported having no outdoor space to go outside.

Variables and instruments

Perceived difficulties and moods

Socio-demographic and sporting variables were measured with an *ad hoc* questionnaire with Likert scale responses. This questionnaire asks about moods related to the situation of confinement, the perception of difficulties in different aspects (training, sleeping, maintenance of routines and goals) and optimism. Through the *ad hoc* questionnaire, their concerns regarding perceived difficulties in practice, their

emotional state due to the confinement and how the difficulties due to the situation affected them in the training variables were investigated.

Optimism and Pessimism

For the evaluation of dispositional optimism, we used the *Life Orientation Test-Revised* (LOT-R; Scheier et al., 1994) was used in its Spanish adaptation (Otero et al., 1998). The LOT-R consists of a total of 10 items (3 for optimism, 3 for pessimism and 4 for control) in which they must indicate their agreement or disagreement with the statements presented on a 5-point response scale. The scale has two correction and interpretation options (Ferrando et al. 2002), on the one hand it can be measured separately and on the other hand total optimism can be measured by reversing the pessimism items in a negative sense (Ortín et al., 2011). The LOT-R has a good internal consistency both in the general population and in population of athletes (García-Naveira, 2018; García-Naveira et al., 2015). In this study, a total score of *Optimism* has been used.

Emotions

Positive and negative emotions were assessed using the *Positive and Negative Affect Survey* (PANAS) (Watson, Clark & Tellegen, 1988) in its Spanish adaptation (Sandín et al, 1999). Positive affect reflects the presence of positive emotions while negative affect focuses on unpleasant emotional states (Sandín et al., 1999). The scale used is a short-version composed of 14 items, with a Likert response scale with 5 options, describing a series of positive or negative emotions (7 positive and 7 negative). High scores on each of the subscales (positive affect and negative affect) indicate a high presence of positive or negative emotions in the participant.

Statistical analyses

First, outliers were eliminated (+ 2.5 standard deviations) and the normality of the variables was calculated. Any variable had a normal distribution nor fulfilled homoscedasticity. In order to correct this issue, variables were transformed to \log_{10} and normality was calculated again. Once again variables were still not normal. Therefore, non-parametric tests were carried out. Mann-Whitney U parameter was used to compare the scores between groups. Effect size is presented with r parameter. All statistical analyses were performed with the SPSS 23 statistical package, with a significance level of 0.05.

Results

A 47.5% of the cyclists perceived that the lockdown situation was affecting them a lot to a very much in their preparation as cyclists, while only 6.5% of the athletes perceived that the lockdown was not affecting them at all in their preparation. However, when asked about their perception of how the confinement was affecting them in general, 32.6% of the cyclists reported that it affected them a lot/quite a lot and 35.6% between not at all and somewhat. To the question «*Would it negatively affect your motivation if the confinement were to be prolonged in the coming months?*», only 9.1% indicated that it would not affect them at all, while 48.9% of the cyclists indicated that it would affect them a lot or quite a lot on a motivational level if the confinement were to be prolonged. On the other hand, to the question «*do you use any kind of tutorial to train at home during the lock-in (youtube, facebook, instagram)*», 67.8% of the cyclists indicated that they were not using these tools.

The results showed that in the elite category, there were only significant differences in positive mood ($U = 119.5$ ($Z = 2.392$), $p = .017$, $r = 0.003$), energy ($U = 103.5$ ($Z = -2.877$), $p = .004$, $r = 0.03$), and difficulty following routines ($U = 110.5$ ($Z = 2.806$), $p = .005$, $r = 0.02$), respectively. That is, cyclists with higher levels of optimism in the elite category had higher scores in positive mood and energy and had less difficulties to follow routines during confinement than those with low optimism. In the case of master category, no differences were found depending on optimism. Means and stan-

dard deviations from all the variables are shown in table 1.

Furthermore, unlike the master and elite categories, in the sub23 category cyclists numerous significant differences depending on their level of optimism were found. Specifically, cyclists with low optimism indicated that they were more negatively affected by confinement ($U = 340.500$ ($Z = -3,108$), $p = .002$, $r = 0.03$), showing higher levels of irritability ($U = 422.00$ ($Z = -2,163$), $p = .031$, $r = 0.004$), sadness ($U = 419.0$ ($Z = -2,188$), $p = .029$, $r = 0.004$), energy ($U = 435.0$ ($Z = -1.975$), $p = .048$, $r = 0.001$) compared to those with high scores in optimism (except energy). In addition, they scored significantly less in support of others ($U = 432$ ($Z = -2,055$), $p = .040$, $r = 0.002$). Complementarily, those with low optimism scored higher on the perception of how confinement was affecting their professional future ($U = 388.5$ ($Z = -2.533$), $p = .011$, $r = 0.003$). Finally, these cyclists also had greater difficulty falling asleep ($U = 389$ ($Z = -2,544$), $p = .011$, $r = 0.003$), following daily routines ($U = 397$ ($Z = 2,428$), $p = .015$, $r = 0.003$) as well as have daily goals ($U = 389$ ($Z = -2.538$), $p = .011$, $r = 0.003$). Finally, no significant differences in training routines were found, with both groups showing similar levels of training.

Discussion

The goal of our study was to analyze the influence of optimism on the impact of confinement (during the first months of home quarantine due to COVID-19 in Spain) in competitive cyclists, depending on their sport category (*under23, elite and master*). For this, aspects such as the influence of confinement on the sports preparation, emotions and thoughts during the period of home isolation, mood, behaviors related to physical exercise and personal habits, as well as frequency and the duration of the training sessions and the perception of difficulties associated with it. After reviewing the literature, our hypotheses have focused on the fact that optimism acts as a mediating variable and those cyclists with lower levels of optimism will manifest a greater psychological impact, a worse mood, as well as a greater impact on their daily exercise habits and in their daily life, and also in their adherence to training.

Table 1.
Mean and standard deviation (SD) of the three groups, divided by low and high optimism, in the measured variables after one month of confinement.

	SUB23		ELITE				MASTER					
	Low Optimism (n=48)	High Optimism (n=25)	Low Optimism (n=28)	High Optimism (n=37)	Low Optimism (n=57)	High Optimism (n=70)	Mean	SD	Mean	SD		
MOOD												
Confinement feelings	2,23	1,17	1,32	1,06	2,24	1,03	1,80	0,95	1,90	1,06	1,97	1,259
The confinement situation is affecting her preparation as a cyclist	2,79	1,09	2,00	1,29	2,24	1,52	2,24	1,16	2,04	1,06	2,21	1,12
Thoughts about health	1,00	0,87	0,68	0,90	0,88	0,67	0,72	0,67	0,98	0,92	0,95	0,91
Negative thinking about sports future	2,02	1,22	0,96	0,97	1,18	0,95	0,72	0,73	0,67	0,85	0,88	0,93
Irritability	1,44	1,10	0,84	0,80	1,18	0,93	0,96	0,93	0,90	1,00	0,64	0,78
Fatigue	1,21	1,11	0,76	0,83	0,82	1,07	1,00	0,86	0,61	0,78	0,86	1,00
Energy	1,92	1,14	2,48	1,19	1,47	1,17	2,56	1,04	2,00	1,04	1,88	1,03
Others support	2,52	1,07	3,00	1,11	2,24	1,34	2,72	0,93	1,86	1,19	2,19	1,08
Tension	1,29	1,14	1,08	1,32	1,35	1,11	0,80	0,86	0,94	1,04	0,94	1,02
Sadness	1,56	1,23	0,96	1,17	1,76	1,30	1,08	1,07	1,29	1,15	1,08	1,02
PERCEIVED DIFFICULTIES												
Sleep Difficulties	1,71	1,45	0,84	1,14	0,88	1,16	0,72	0,89	0,98	1,10	0,91	1,12
Feeding difficulties	1,65	1,34	1,20	1,19	1,71	1,26	1,08	1,07	1,14	1,00	1,27	1,25
Daily routines difficulties	1,69	1,24	0,96	1,17	1,41	1,12	0,52	0,82	1,02	1,09	1,17	1,26
Training plan difficulties	1,08	1,23	0,84	1,06	1,53	1,46	0,88	1,29	1,43	1,29	1,48	1,40
Reaching aims difficulties	2,73	1,51	1,76	1,53	1,88	1,26	1,44	1,29	1,96	1,39	1,98	1,48
PANAS Positive	19,13	5,00	22,16	6,53	8,82	4,55	22,72	5,12	20,43	4,43	21,98	4,16
PANAS Negative	15,44	5,27	12,72	3,33	14,12	4,19	13,32	3,96	14,82	4,48	12,11	3,90
TRAINING VARIABLES												
Initial Training Difficulty	4,98	3,12	4,08	3,31	4,94	3,45	3,52	2,81	4,39	3,41	4,52	3,30
Current Training Difficulty	4,81	2,83	4,52	2,98	4,59	2,18	4,16	3,24	5,08	2,98	3,48	2,91
Training frequency before confinement	8,04	3,05	8,60	2,51	6,58	2,12	8,08	3,23	6,93	4,16	6,35	3,47
Training frequency during confinement	9,41	4,26	10,16	2,86	8,41	3,82	9,04	3,07	7,75	4,73	6,95	3,88

The findings indicate that the youngest cyclists, those belonging to the u23 category (18-22 years), who show the lowest levels of optimism, present the greatest impact on the situation of home confinement. This age-related trend has been highlighted by other studies with younger athletes (Ortín et al., 2011). Research has found numerous significant differences, in aspects such as the presence of negative thoughts about their sporting future, in comparison with u23 cyclists with high levels of optimism as well as with respect to the rest of the categories (elite and master) regardless of the levels of optimism of each subgroup. Their mood is the most affected, they have the highest levels of irritability and sadness, and on the contrary, lower levels of perception of energy or of support from others. These scores are consistent with the high scores obtained on the PANAS negative affect scale. At the level of behaviors related to physical exercise and daily routine, they report difficulties in falling asleep, in following daily routines and in orienting themselves to achieving the established objectives. In the rest of the variables, no significant differences were found.

In the case of cyclists in the elite category, those with the highest optimism values obtained the highest scores in perceived energy and positive affect on the PANAS scale. On the contrary, those who are less optimistic show the greatest difficulties in following daily routines. In the case of cyclists in the master category, the analyzes did not find significant differences.

These results imply important derived practical implications, not to mention those related to performance (Gordon, 2008; Sánchez & Mendez, 2009) the assimilation of training loads (Aranzana et al., 2018) or their contribution to broader concepts such as mental toughness (Nicholls et al., 2008). Thus, it is essential to insist on preparation and psychological intervention with competition cyclists, especially with those that the research places in a vulnerable position (in our study, cyclists in the sub23 category and with low levels of optimism). The age and the sporting moment in which they are, waiting for their transfer to continental teams, pro teams or world teams, could interact with the trait of optimism, in this case low, to generate situations of maladjustment to periods of confinement home, or those in which the plan and dynamics of training and competitions must be abruptly and unexpectedly interrupted. This type of situation compromises your sporting aspirations, putting your professional future at risk.

Another implication is that in the same life

circumstance, sport category or age and optimism have different impacts and responses (Ortín et al., 2013; Ortín et al., 2011), so it is important to pay special attention to these variables.

It follows from here, on the one hand, the need to have specialized sports psychology professionals within the sports coaching staff of cycling teams, especially in those teams with riders in pre-professional categories, as evidenced in other sports (Rochniak et al., 2020). As well as one of the challenges for the future, which consists in contrasting whether optimism and its relationship with the different responses and symptoms of athletes are replicated in other sports (Guicciardi & Pazzona, 2020) and in similar categories or, on the contrary, if these data affect in a particular way to cycling.

Conclusions

Therefore, among the most important conclusions of this study are that, during covid-19 lock-up, younger cyclists may be affected in terms of their level of optimism. Also, the cyclists in the U23 category have shown greater negative thoughts about their sporting future, greater negative affect and an emotional state characterized by high irritability and sadness and low perception of energy and social support, along with greater difficulties in sleeping, complying with set goals and following daily routines. Finally, on the contrary, faced with the same situation of impossibility of continuing with training and competitions in the open air normally, cyclists like the elite, when they present high levels of optimism, have shown higher scores of energy perception as well as a greater positive affect.

Certainly, we cannot ignore the important role that positive psychology variables played during the first COVID-19 sanitary alert lockdown in specific populations such as bicyclists.

Ethics approval and consent to participate

The studies involving human participants were reviewed and approved by University Miguel Hernández Ethics Committee. The patients/participants provided their written informed consent to participate in this study.

Author contributions

EL-Z and AM-T conceived, designed the experiments and performed the experiments; MS-R analyzed the

data; All authors contributed reagents and materials and wrote the paper.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest

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