

León-Zarceño, E.; Moreno-Tenas, A.; Manchón, J.; Quiles Marcos, Y.; Quiles Sebastián, M.J. y García-Naveira, A. (202x) Positive Psychological Characteristics, Mental Health in High Skaters During COVID-19 Lockdown. Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte vol. X (X) pp. xx. <http://cdeporte.rediris.es/revista/> ___*

ORIGINAL

POSITIVE PSYCHOLOGICAL CHARACTERISTICS AND MENTAL HEALTH IN SKATERS DURING COVID-19 CONFINEMENT

CARACTERÍSTICAS PSICOLÓGICAS POSITIVAS Y SALUD MENTAL EN PATINADORES DURANTE CONFINAMIENTO POR COVID-19

León- Zarceño, E.¹; Moreno-Tenas, A.²; Manchón, J.²; Quiles Marcos, Y.¹; Quiles Sebastián, M.J.¹ and García-Naveira, A.³

¹ PhD in Psychology. Lecturer in Sport Psychology. Department of Behavioural Sciences and Health. Miguel Hernández University (Spain) eleon@umh.es, y.quiles@umh.es, mj.quiles@umh.es

² Psychologist. Lecturer in Sport Psychology. Department of Behavioural Sciences and Health. Miguel Hernández University (Spain) antonio.moreno@umh.es, jmanchon@umh.es

³ PhD in Psychology. Official College of Psychologists. Madrid (Spain) alejogarcianaveira@gmail.com

Spanish-English translator: Rocío Domínguez Castells, rociodominguezcastells@gmail.com

ACKNOWLEDGEMENTS: The authors would like to thank the athletes who agreed to participate in this study for their collaboration, as well as the Royal Spanish Skating Federation (RFEP, acronym in Spanish), Phil Boudreault and Mari Carmen Moles for their help in spreading the study for data collection.

Código UNESCO/UNESCO Code: 6199 Psicología del deporte / *Sport Psychology*

Clasificación del Consejo de Europa/Council of Europe classification: 15 Psicología del Deporte / *Sport Psychology*

Recibido 6 de mayo de 2021 **Received** May 6, 2021

Aceptado 2 de octubre de 2021 **Accepted** October 2, 2021

ABSTRACT

The aim of this study was to assess the emotional state, habits and routines (measured through an ad-hoc questionnaire), personality traits (LOT-R, PFRS and COPE-28) and mental health (EBP and GHQ-12) of 71 Spanish high-performance skaters (38 men and 33 women) during COVID-19 confinement.

The results indicate a good adaptation of the athletes at the cognitive, emotional and behavioural levels during the confinement. Skaters stand out for optimism, resilience and an active coping style, which may be positive regulators of the behavioural response. Distress is associated with lower resilience and greater avoidance coping. Women presented worse emotional response and greater difficulty to sleep than men. It was concluded that the athletes examined presented a positive profile that makes them cope adequately with confinement, in which potential gender differences need to be considered.

KEYWORDS: COVID-19, Athletes, Mental Health, Coping, Emotions

RESUMEN

El objetivo de este estudio es evaluar el estado emocional, hábitos y rutinas (medido con un cuestionario ad hoc), características de personalidad (LOT-R, PFRS y COPE-28) y salud mental (EBP y GHQ-12) en 71 patinadores españoles de alto rendimiento (38 hombres y 33 mujeres) durante el confinamiento por la COVID-19. Los resultados indican una buena adaptación de los deportistas a nivel cognitivo, emocional y conductual durante el confinamiento. Los patinadores destacan por el optimismo, la resiliencia y un estilo de afrontamiento activo, que pueden ser moduladores positivos de la respuesta comportamental. El distrés se asocia a una menor resiliencia y mayor evitación del afrontamiento. Las mujeres obtienen una peor respuesta emocional y mayor dificultad para dormir que los hombres. Se concluye que los deportistas evaluados poseen un perfil positivo que les hace afrontar el confinamiento adecuadamente, en el que se requiere atender las posibles diferencias de género.

PALABRAS CLAVE: COVID-19, Deportistas, Salud Mental, Afrontamiento, Emociones

1 INTRODUCTION

On 11 March 2020, the World Health Organization (WHO) declared the COVID-19 pandemic due to the imminent risk, since it had produced an alarming number of infections and deaths worldwide, resulting in a threat for human society in terms of health (general, physical and psychological), economy and lifestyle (Cao et al., 2020; Casagrande et al., 2020; Woods et al., 2020). The most affected countries declared a home lockdown, free circulation within cities was limited, certain spaces were closed (sport facilities, parks, playgrounds, etc.), and social distancing and hygiene measures were established, apart from other restrictions (Horesh et al., 2020; Lesser & Nienhuis, 2020; López-Bueno et al., 2020).

In particular, COVID-19 confinement has caused the interruption of the regular physical activity and sports practice, since physical activity, training and competitions were cancelled (Ferreira-Júnior et al., 2020; Moscoso, 2020; Samuel et al., 2020). One of the population groups that have been most largely affected by home lockdown is high-performance athletes, since sports activity is

their profession. As a consequence, they have incurred economical loss, considerable changes in their lifestyle and daily routines, reduction in frequency, intensity and duration of the training sessions, limitation and change of training site, uncertainty about the competition calendar, concern about their sports career, low perception of interpersonal relationships (family, friends and training or team mates), etc. (González-Hernández et al., 2021; Mon-López et al., 2020; Pillay et al., 2020).

This scenario may have a two-fold impact on a high-performance athlete's mental health and emotional response. This is due to the global confinement, like for the rest of the population, but also due to other factors specific to the high-performance sport context that, as mentioned above, may affect these individuals and their habits, routines and training programmes (León et al., 2021).

During the confinement, around 30% of the population has suffered from anxiety, stress, depression, psychological distress, adjustment disorder, mood disorder or insomnia (Brooks et al., 2020; Gómez-Salgado et al., 2020; Ramírez-Ortiz et al., 2020; Rossi et al., 2020; Xionga et al., 2020). These authors explained that the factors that had the greatest influence on the physical and psychological health of the confined population were to stay at home, the loss of habits and routines, uncertainty, the fear of becoming infected, their working situation and psychosocial stress. High-performance athletes are also vulnerable to the psychological consequences of the lockdown, such as stress, anxiety, depression and impaired psychosocial functioning (di Fronso et al., 2020; Hossien et al., 2020; Pillay et al., 2020), especially when they do not have distress tolerance, personal coping resources or experience in sport (González-Hernández et al., 2021).

Other aspects related to confinement are the worsening of healthy habits (e.g. reduction of physical activity, bad nutrition and irregular sleeping patterns), the increased exposure to electronic devices (e.g. television, computer, video games and mobile phones), boredom, alcohol and tobacco use, etc. (Brand et al., 2020; Choi & Bum, 2020; Constant et al., 2020; Ingram et al., 2020; Jiménez-Pavón et al., 2020). These issues were also observed to some extent among high-performance athletes, who presented worsened healthy habits, such as sleeping patterns or nutrition, which are important factors in an athlete's preparation (Mon-López et al., 2020; Pillay et al., 2020).

Some authors have already warned about the importance of examining the impact of COVID-19 confinement taking into account the differences between men and women (Ruiz-Cantero, 2021). Studies tend to indicate that women presented poorer general mental health (e.g. anxiety, stress and depression) and worse emotional response (e.g. anguish, anger and irritability) than men (Alsalhe et al., 2020; Fu et al., 2020; Pieh et al., 2020; Rossi et al., 2020; Xionga et al., 2020). This difference has also been detected in high-performance sport, where women showed worse emotional response and management than men, with a negative effect on mental health, psychological well-being, interpersonal relationships, healthy habits and sport behaviour

patterns (Clemente-Suárez et al., 2020; di Fronso et al., 2020; León et al., 2021; Mon-López et al., 2020).

As a positive aspect, it must be highlighted that certain personal and previous general health factors can reduce acute psychological responses and facilitate the adaptation to changes during confinement. These can be personality traits (emotional stability, extroversion, kindness, responsibility and resilience), active coping strategies (solution-oriented and social support), good mental health, healthy habits and psychological well-being (AL-Omiri et al., 2021; Constant et al., 2020; Fu et al., 2020; Jungmann et al., 2020; Liu et al., 2021; Ye et al., 2020).

In this regard, high-performance athletes may have some advantage to cope with confinement since, during their sports career, they have already developed certain personality traits, psychological well-being and dedication to sport that protect their mental health and fosters sports performance. Among the personal variables, we can highlight optimism (García-Naveira, 2018; García-Naveira et al., 2015; Ortín et al., 2013), resilience (Bicalho et al., 2020; Reche et al., 2016; Trigueros et al., 2020) and task-solution-oriented active coping strategies (Aguinaga et al., 2021; García-Naveira, 2015; Reche et al., 2018).

The importance of examining high-performance athletes' mental health and psychological well-being must be emphasised. High-performance athletes present high values of psychological well-being. Sport may be a means to satisfy intrinsic and extrinsic motivation, personal growth, sport development and interpersonal relationships, among other aspects (García-Naveira, 2016; Garcia-Naveira et al., 2017; Rivas et al., 2012; Romero et al., 2013; Romero et al., 2010).

By contrast, the high-performance sport may cause poorer perceived emotional health due to the high demands, injuries, competitive stress, etc. Therefore, not all sports practice can be considered healthy (García-Naveira, 2016; Garcia-Naveira et al., 2017; Rivas et al., 2012). This aspect is not frequently present in amateur athletes, who presented a positive relationship between sports practice and a good perceived psychological health (García-Naveira & Locatelli, 2014).

These issues have been observed in high-performance athletes during confinement, including resilience (Gupta & McCarthy, 2021); active coping strategies at the cognitive and behavioural levels, such as planning (León et al., 2021); emotional self-regulation (Clemente-Suárez et al., 2020; Mon-López et al., 2020); online social support from coaches and other professionals (di Fronso et al., 2020); positive re-evaluation, acceptance and planning (Szczypińska et al., 2021); and psychological well-being (León et al., 2021). Furthermore, perseverance in training may be an effective regulator of uncertainty, anxiety, stress and negative emotions in general, helping to cope with this complex situation in a more adaptive manner (Jaenes et al., 2020; Pillay et al., 2020; Rubio et al., 2021).

Given the relevance of the high-performance athletes' population, it was essential to assess how they were feeling during the confinement period, since the athletes suffered from the negative effects of both the social context and the standstill in sport. The aims of this study were to assess the emotional state, habits and routines, personality traits (optimism, resilience and coping skills) and mental health (psychological well-being and psychological distress/discomfort) of high-performance athletes during confinement due to the COVID-19 pandemic. Furthermore, another aim was to analyse the differences in these variables based on gender and to examine which factors predict an athlete's mental health during home lockdown.

2 MATERIAL AND METHOD

2.1 Design

A cross-sectional, descriptive, correlational study was designed. The athletes were assessed during the state of alarm caused by COVID-19.

2.2 Participants

The sample was composed of 71 Spanish high-performance athletes (38 men and 33 women) from the Royal Spanish Skating Federation (RFEP, acronym in Spanish), who were confined during the COVID-19 pandemic. As regards the sport modality (see <https://fep.es/website/index.asp>), 49 athletes practised inline hockey, (69.0%), 10 roller hockey (14.1%), 7 inline freestyle (9.9%), 4 speed skating (5.6%) and 1 inline alpine skating (1.4%). The mean age was 23 years old (Mean=22.56 years, $SD=4.93$; range=18-46).

2.3 Instruments

2.3.1. Sociodemographic variables, sport characteristics, and effect of the confinement on sport routines and emotional, cognitive and behavioural aspects.

An *ad hoc* questionnaire with sociodemographic variables was designed to collect data regarding age, gender, sport modality and level of studies. Besides, another *ad hoc* questionnaire was built to assess cognitive (e.g. 'You spend a long time thinking of negative things about your future sports career or what may happen this season'), emotional ('The confinement situation makes you feel...'), and e.g. 'Fatigued', 'Energetic'), behavioural and sport aspects ('The confinement situation is making it difficult for you to...', and e.g. 'Follow eating guidelines' or 'Follow a training programme') related to their circumstances during the confinement. Answers were provided on a five-point scale ranging from Nothing (0) to Very much (4). Thus, the minimum score was 0 points and the maximum was 4.

2.3.2. *Mental Health*

Psychological distress

Psychological distress is an indicator of an individual's emotional health that can be defined as a state of emotional discomfort combined, sometimes, with somatic symptoms (Padrón et al., 2012). It refers to a negative or excessive response to potentially stressful factors, of either biological, physical or psychological nature.

Emotional health was assessed by means of the Spanish version (Sánchez-López & Dresch, 2008) of the 12-item General Health Questionnaire (GHQ-12, Goldberg & Hillier, 1979). It consists of 12 items and a Likert-type answering scale ranging from 0 to 3 points. The assessment can be conducted using two dimensions (Werneke et al., 2000), although previous studies have also applied it using only one dimension (Padrón et al., 2012). The second option has been chosen for the present research. Here, the higher the score in this dimension, the poorer the perceived emotional health and the higher the psychological distress. The minimum score was 0 points and the maximum was 36. When interpreting mental health results, a score lower than 12 indicates good perceived health, 12-25 indicates poor perceived health and 25-36 indicates very poor perceived health.

Cronbach's Alpha was used to determine GHQ-12 internal consistency. The resulting value was .82, indicating satisfactory internal consistency. Slightly lower values were previously obtained for the general population, where Cronbach's Alpha was .76 (Sánchez-López & Dresch, 2008) and for a population of athletes, where Cronbach's Alpha was between .72 and .74 (García-Naveira, 2016; García-Naveira et al., 2017). Cronbach's Alpha in this study was .87 ($\omega=.87$).

Psychological well-being

Psychological well-being is an indicator of an individual's mental health that is directly related to one's personal experience and the resulting optimum life functioning that everyone considers most appropriate based on their needs and wishes (Van Dierendonck, 2004).

Psychological well-being was assessed using the Spanish version (Escala de Bienestar Psicológico, EBP, Díaz et al., 2006) of the Scale of Psychological Well-Being (SPWB, Van Dierendonck, 2004). It consists of a 39-item questionnaire, with a Likert-type answering scale ranging from 1 to 6. The scale has 6 dimensions: Self-acceptance (from 6 to 36 points: people try to feel well with themselves even when being aware of their own limitations), Positive Relationships (from 6 to 36 points: keeping stable social relationships and having friends they can trust), Autonomy (from 8 to 48 points: establishing their own beliefs—self-determination—and keeping independence and personal authority), Environmental Mastery (from 6 to 36 points: personal ability to choose or create favourable environments to satisfy their own wishes and

needs), Personal Growth (from 7 to 42 points: developing their potential by growing as a person and taking their abilities to the maximum) and Life Purpose (from 6 to 36 points: setting goals, defining aims that give meaning to their lives). The higher the score in every dimension, the better the perceived psychological well-being.

EBP presented good internal consistency for all dimensions, with values ranging between $\alpha = .71$ and $\alpha = .84$, both in the original version (Díaz et al., 2006) and when applied to sport (García-Naveira, 2016; García-Naveira et al., 2017). Cronbach's alpha coefficient was calculated for every dimension in the present study: Self-acceptance = .81 ($\omega = .83$), Positive Relationships = .87 ($\omega = .89$), Autonomy = .70 ($\omega = .71$), Environmental Mastery = .55 ($\omega = .60$), Life Purpose = .74 ($\omega = .76$) and Personal Growth = .53 ($\omega = .63$).

2.3.3. *Personality Traits*

Optimism

Optimism reflects the extent to which people hold generalised favourable expectancies for their future (Scheier et al., 1994).

It was assessed through the Spanish version (Otero et al., 1998) of the revised Life Orientation Test (LOT-R; Scheier et al., 1994). LOT-R consists of 10 items (4 control items) and participants are requested to indicate the extent to which they agree or disagree with every statement on a 5-point scale, ranging from 0 (strongly disagree) to 4 (strongly agree). From the 6 items, 3 are written in a positive direction (optimism) and 3 in a negative direction (pessimism). It is possible to keep both components separately (optimism vs. pessimism) by adding up the items of every sub-scale and obtaining a score ranging from 0 to 12 points.

LOT-R presented good internal consistency for the general population, Cronbach's alpha coefficient yielding a value of .76 for optimism and .64 for pessimism (Otero et al., 1998). Similar values were obtained for a population of athletes, Cronbach's alpha coefficient yielding values between .71 and .73 for both sub-scales (García-Naveira, 2015, 2018; García-Naveira et al., 2015). For the present sample, Cronbach's alpha coefficient was .71 ($\omega = .77$) for optimism and .75 ($\omega = .77$) for pessimism.

Resilience

Resilience refers to people's ability to overcome adversity during their lives (Rutter, 1987) and that allows them to withstand the trauma experienced and to recover from it (Finez & Morán, 2017).

Resilience was assessed by means of the Spanish version (León et al., 2020) of the Protective Factors for Resilience Scale (PFRS) (Harms et al., 2017). It examines the protective factors that contribute to an individual's good functioning despite having been through stressful experiences. It is composed

of 15 items and 3 sub-scales: Personal Resources (individual resources, such as believing in themselves), Social Resources—Family (referring to the family as security and protective factor against adversity) and Social Resources—Peers (friends as a source of support and protection). In this research, the participants were asked to indicate to what extent they agreed with different aspects related to their experience during the pandemic. The questionnaire was answered on a 7-point Likert-type scale, ranging from 1 (strongly disagree) to 7 (strongly agree). The total score of every sub-scale ranges from 5 to 35. A high score indicates a high number of resources in every sub-scale.

The questionnaire presented good internal consistency for the general population, Cronbach's alpha coefficient yielding a value of .78 for Personal Resources, .81 for Social Resources—Family and .84 for Social Resources—Peers (León et al., 2020). For the present sample, Cronbach's alpha coefficient was .89 for Personal Resources sub-scale ($\omega=.90$), .89 for Social Resources—Family ($\omega=.91$) and .88 for Social Resources—Peers ($\omega=.88$).

Coping Strategies

Coping strategies refer to the different ways people respond to stressful events (Carver, 1997). In general, coping refers to the group of thoughts and actions that enable people to handle difficult situations.

Coping strategies were assessed by means of the short Spanish version (COPE-28, Morán et al., 2009) of the Brief COPE inventory (Carver, 1997). It is composed of 28 items and a four-point Likert-type answering scale, ranging from 0 (Never) to 3 (Always). For this study, a second-order factor correction consisting of 4 sub-scales was used: Cognitive Coping (scores from 0 to 30: use of strategies based on planning, active coping, disconnecting), Support Coping (scores from 0 to 18: to cope using the available sources of support), Avoidance Coping (scores from 0 to 30: use of strategies to avoid the situation) and Spiritual Coping (scores from 0 to 6: use of strategies based on religion). The higher the score on each scale, the greater the use of that coping strategy.

The questionnaire presented good internal consistency for the general population; Cronbach's alpha coefficient was .74 for Cognitive Coping, .74 for Support Coping, .71 for Avoidance Coping and .80 for Spiritual Coping (Morán et al., 2010). Cronbach's alpha coefficient for the present sample was .61 for Cognitive Coping ($\omega=.64$), .75 for Support Coping ($\omega=.76$), .60 for Avoidance Coping ($\omega=.72$) and .64 for Spiritual Coping ($\omega=.65$).

2.4 Procedure

Approval was obtained from the university ethics committee (record 2020.E.223.OIR; 2020.225.E.OIR) and the Spanish Skating Federation was requested authorisation for the assessment. An online questionnaire battery was created, and only the researchers could access the results. The questionnaires were administered in the first two weeks of May during the

confinement, approximately two months after the beginning of the confinement. A link to the online questionnaire was directly (researcher–athlete) or indirectly (researcher–coach–athlete) sent to the participants through e-mail, Facebook or WhatsApp. The participants were informed on the general aim of the study, that participation was voluntary and the answers would be kept confidential, according to the guidelines of the Declaration of Helsinki on research involving human subjects published by the World Medical Association (WMA, 2013). The assessment started once informed consent was obtained.

2.5 Statistical Analysis

Descriptive and frequency analyses of the sociodemographic and sport variables were conducted. A descriptive analysis of the scores and sub-dimensions of the psychological questionnaires was performed; the mean, standard deviation and 95% confidence interval were calculated. Student's t test for independent measures was applied to examine the gender differences and the adaptation to the confinement, and the effect size was calculated. The relationships between variables were calculated through Pearson correlation coefficient and stepwise multiple regression was conducted to examine the relationship between psychological adjustment and the rest of the variables analysed. The statistical package IBM SPSS Statistics 25 was used for the statistical analyses. Significance level was established at .05.

3 RESULTS

The questionnaire's descriptive statistics and the results from the gender difference analysis for the different aspects affected by the confinement are presented in Table 1.

Table 1. Descriptive statistics of cognitive, emotional and behavioural aspects affected by the confinement divided by gender and mean differences

	Total (n = 71)	Men (n = 38)	Women (n = 33)	t	d
	M (SD)	M (SD)	M (SD)		
<i>Negative thoughts about their own or others' health</i>	1.03 (.88)	.79 (.81)	1.30 (.88)	-2.55*	.61
<i>Negative thoughts about their future sports career</i>	1.73 (1.06)	1.47 (1.03)	2.03 (1.02)	-2.28*	.54
The confinement makes them feel...					
<i>Annoyed</i>	1.45 (1.11)	1.08 (.97)	1.88 (1.11)	-3.24**	.77
<i>Fatigued</i>	1.28 (.97)	1.13 (.91)	1.45 (1.03)	-1.40	.33
<i>Energetic</i>	1.83 (.97)	2.05 (.93)	1.58 (.97)	2.12*	.50
<i>Supported by others</i>	2.34 (1.08)	2.58 (.92)	2.06 (1.20)	2.06*	.49
<i>Tense</i>	1.49 (1.11)	1.21 (.96)	1.82 (1.19)	-2.38*	.57
<i>Sad</i>	1.46 (1.11)	1.11 (.98)	1.88 (1.11)	-3.12**	.74
The confinement is making it difficult for them to...					
<i>Fall asleep</i>	1.80 (1.34)	1.47 (1.25)	2.18 (1.36)	-2.29*	.55
<i>Follow eating guidelines</i>	1.11 (1.19)	0.95 (1.04)	1.30 (1.33)	-1.26	.30
<i>Keep a daily routine</i>	1.51 (1.28)	1.42 (1.18)	1.61 (1.39)	-0.61	.14

<i>Follow a training programme</i>	1.49 (1.28)	1.42 (1.27)	1.58 (1.30)	-0.51	.12
<i>Have a goal</i>	1.76 (1.40)	1.61 (1.33)	1.94 (1.48)	-1.00	.24

Note: M=Mean; SD=Standard Deviation; *Significant at $p < .05$; **Significant at $p < .01$

When considering the group of athletes as a whole, the scores on the cognitive, emotional and behavioural aspects affected by the confinement (negative thoughts, negative emotions and perceived difficulties) were below the mean of every item's answering range (0 to 4), except for the variable 'supported by others', which had positive connotation and was above the middle point. The variable 'energetic', despite being something desirable, was also slightly below the mean. These data reveal that confinement had a mild-to-moderate impact on the athletes.

Significant gender differences were observed in the cognitive, emotional and behavioural aspects included in the questionnaire, showing a larger impact on women. Thus, women presented more negative thoughts about their future sports career and about their own or others' health. Moreover, they felt more annoyed, sadder, tenser, less energetic, less supported by others, and they also reported greater difficulties to fall asleep. All the differences detected presented a medium effect size (Cohen, 1988).

Table 2 shows the descriptive statistics of the different measuring scales (LOT-R, PFRS, COPE-28, EBP and GHQ-12) considering the whole sample and divided by gender. The mean of every scale's answering range was used in order to describe the general profile of the complete sample. As regards the personality traits, the athletes showed high scores in optimism, medium in pessimism and high in all resilience factors (personal and social resources). In regard to coping styles, they presented medium scores in cognitive coping and social support and low scores in avoidance coping and spiritual coping. When referring to mental health, medium and high scores were obtained in the psychological well-being sub-scales, and medium scores were found in psychological distress.

Regarding gender differences, women presented greater psychological distress than men, while the latter showed to have a clearer life purpose (EBP) than women, both with medium effect size (Cohen, 1988).

Table 2. Descriptive statistics for optimism, resilience, coping strategies, psychological well-being and psychological distress divided by gender and mean differences

	Total (n = 71)	Men (n = 38)	Women (n = 33)		
	M (SD)	M (SD)	M (SD)	t	d
LOT-R					
<i>Optimism</i>	10.79 (2.14)	11.18 (1.92)	10.33 (2.31)	1.70	.40
<i>Pessimism</i>	7.42 (1.91)	7.24 (1.88)	7.64 (1.95)	-0.88	.21
PFRS					
<i>Personal Resources</i>	28.09 (5.21)	28.95 (5.27)	27.09 (5.04)	1.51	.36
<i>Social Resources—Family</i>	32.31 (3.80)	32.90 (3.28)	31.64 (4.27)	1.40	.33
<i>Social Resources—Peers</i>	28.73 (5.39)	28.61 (5.37)	28.88 (5.49)	-0.21	.05
COPE-28					

<i>Cognitive Coping</i>	16.44 (3.73)	17.03 (3.23)	15.76 (4.18)	1.44	.34
<i>Social Support Coping</i>	9.59 (3.32)	9.16 (2.92)	10.10 (3.71)	-1.19	.28
<i>Avoidance Coping</i>	10.11 (3.82)	10.00 (4.03)	10.24 (3.62)	-0.27	.06
<i>Spiritual Coping</i>	0.56 (1.03)	0.74 (1.16)	0.36 (0.82)	1.55	.37
<i>EBP – Psychological well-being</i>					
<i>Self-acceptance</i>	28.16 (4.90)	28.90 (4.49)	27.30 (5.28)	1.37	.33
<i>Positive Relationships</i>	28.28 (6.52)	28.50 (6.71)	28.03 (6.39)	0.30	.07
<i>Autonomy</i>	31.48 (6.04)	32.68 (4.05)	30.09 (6.06)	1.84	.44
<i>Environmental Mastery</i>	26.62 (4.11)	26.87 (4.05)	26.33 (4.23)	0.54	.13
<i>Personal Growth</i>	34.95 (3.66)	34.97 (3.79)	34.94 (3.55)	0.04	.01
<i>Life Purpose</i>	27.94 (4.52)	28.97 (4.37)	26.76 (4.45)	2.11*	.50
<i>GHQ – Psychological Distress</i>	13.85 (6.11)	12.11 (6.35)	15.85 (5.21)	-2.69**	.64

Note: M=Mean; SD=Standard Deviation; *Significant at $p < .05$; **Significant at $p < .01$; LOT-R: revised Life Orientation Test; PFRS: Protective Factors for Resilience Scale; COPE-28: coping strategies inventory; EBP: Escala de Bienestar Psicológico (Scale of Psychological Well-Being); GHQ: General Health Questionnaire

The relationships between the variables assessed (LOT-R, PFRS, COPE-28, EBP and GHQ-12) and the different emotions and perceptions affected by the confinement (annoyed, fatigued, lack of energy, lack of support from others, tense and sad) were examined. Optimism, resilience, active coping strategies and psychological well-being were negatively related to the negative emotional responses, while pessimism, passive coping strategies and psychological distress were positively related to them. The strength of these correlations was low or moderate (Table 3).

Table 3. Correlations between optimism, resilience, coping strategies, psychological well-being, psychological distress and the emotions produced by the confinement.

	Annoyed	Fatigued	Energetic	Supported by others	Tense	Sad
<i>LOT-R</i>						
<i>Optimism</i>	-.35**	-.23	.39**	.12	-.35**	-.21
<i>Pessimism</i>	.35**	.30*	-.27*	-.22	.33**	.20
<i>PFRS</i>						
<i>Personal Resources</i>	-.44**	-.27*	.44**	.30*	-.43**	-.31**
<i>Social Resources—Family</i>	-.30*	-.13	.29*	.36**	-.30*	-.37**
<i>Social Resources—Peers</i>	-.21	-.13	-.02	.15	-.14	-.35**
<i>COPE-28</i>						
<i>Cognitive Coping</i>	.01	-.08	.10	.24*	.04	.01
<i>Social Coping</i>	.19	.07	.11	.21	.30*	.13
<i>Avoidance Coping</i>	.28*	.07	-.15	-.11	.44**	.19
<i>Spiritual Coping</i>	.03	-.02	.16	.10	-.05	-.15
<i>EBP</i>						
<i>Self-acceptance</i>	-.43**	-.27*	.21	.15	-.45**	-.36**

<i>Positive Relationships</i>	-.18	-.23	.09	.15	-.16	-.34**
<i>Autonomy</i>	-.23*	-.06	.28*	.17	-.21	-.36**
<i>Environmental Mastery</i>	-.32**	-.19	.24*	.32**	-.36**	-.28*
<i>Personal Growth</i>	-.12	-.03	.21	.26*	-.21	-.09
<i>Life Purpose</i>	-.30*	-.22	.36**	.28*	-.29*	-.25*
GHQ – Psychological Distress	.64**	.33**	-.39**	-.30*	.73**	.63**

Note: *Significant at $p < .05$; **Significant at $p < .01$; LOT-R: revised Life Orientation Test; PFRS: Protective Factors for Resilience Scale; COPE-28: coping strategies inventory; EBP: Escala de Bienestar Psicológico (Scale of Psychological Well-Being); GHQ: General Health Questionnaire

As regards the relationships between the variables assessed (LOT-R, PFRS, COPE-28, EBP and GHQ-12) and the perceived behavioural difficulties (eating guidelines, daily routines, training programme and having a goal), Table 4 shows that optimism, resilience and active coping strategies were negatively related to the perceived difficulties concerning habits and routines. Furthermore, pessimism, passive coping strategies and psychological distress were positively related with the perceived difficulties. The strength of these correlations was low or moderate.

Table 4. Correlations between the behavioural aspects affected by the confinement and optimism, pessimism, resilience, coping strategies, psychological well-being and psychological distress

	Fall asleep	Eating guidelines	Daily routine	Training programme	Have a goal
LOT-R					
<i>Optimism</i>	.02	-.14	-.10	-.14	-.31**
<i>Pessimism</i>	.10	.17	.09	.24*	.19
PFRS					
<i>Personal Resources</i>	.08	-.17	-.30*	-.26*	-.31**
<i>Social Resources—Family</i>	-.01	-.27*	-.25*	-.37**	-.37**
<i>Social Resources—Peers</i>	.23	.20	.07	-.11	-.09
COPE-28					
<i>Cognitive Coping</i>	-.01	-.01	.15	.18	-.05
<i>Social Coping</i>	.10	.21	.22	.24*	.19
<i>Avoidance Coping</i>	.17	.04	.24*	.34**	.16
<i>Spiritual Coping</i>	-.11	-.03	-.15	.13	-.07
EBP					
<i>Self-acceptance</i>	.06	.04	-.15	-.14	-.19
<i>Positive Relationships</i>	.09	.14	.01	-.04	-.12

<i>Autonomy</i>	-.05	-.08	-.15	-.02	-.16
<i>Environmental Mastery</i>	-.07	-.20	-.31**	-.16	-.28*
<i>Personal Growth</i>	.21	-.07	-.03	-.09	-.07
<i>Life Purpose</i>	.02	-.20	-.27*	-.13	-.16
GHQ	– .19	.28*	.49**	.48**	.50**
Psychological Distress					

Note: *Significant at $p < .05$; **Significant at $p < .01$; LOT-R: revised Life Orientation Test; PFRS: Protective Factors for Resilience Scale; COPE-28: coping strategies inventory; EBP: Escala de Bienestar Psicológico (Scale of Psychological Well-Being); GHQ: General Health Questionnaire

Lastly, a regression analysis was conducted taking the GHQ-12 score as the dependent variable, which refers to the athletes' emotional health (Table 5). The different sub-scales of coping strategies, optimism, pessimism and resilience were included as independent variables. The model explained 54% of the variance of the psychological distress; it was negatively explained by the personal resources and family social resources sub-scales of the resilience scale, and positively explained by the avoidance coping sub-scale of the coping strategies scale. The lack of personal resources or family social resources, as well as the use of avoidance strategies, is a predictor of worse psychological adjustment.

Table 5. Regression analysis

Predictors	R ² /r	Change in R ²	F	β
Psychological Distress (GHQ-12)				
	.54/.74		26.43**	
PFRS <i>Personal Resources</i>		.44		-.50**
COPE-28 <i>Avoidance Coping</i>		.06		.25**
PFRS <i>Social Resources (Family)</i>		.04		-.23*

Note: *Significant at $p < .05$; **Significant at $p < .01$; PFRS: Protective Factors for Resilience Scale; COPE-28: coping strategies inventory; GHQ: General Health Questionnaire

4 DISCUSSION

The results brought to light that these athletes suffered a low-to-moderate impact on their daily routines (sleep, eating and training programme) and negative emotions (tense, sad, lack of energy, fatigued and annoyed) during the confinement. Besides, they reported having felt supported by others during this period. These results are in keeping with those obtained from federation athletes, who presented emotional and behavioural responses adapted to the confinement situation due to COVID-19 (León et al., 2021), but disagree with those found in the general population (Brand et al., 2020; Choi & Bum, 2020; Constant et al., 2020; Ingram et al., 2020; Jiménez-Pavón et al., 2020), and with other studies involving high-performance athletes (Mon-López et al., 2020; Pillay et al., 2020), where certain behavioural changes (eating and rest) were detected during the home lockdown.

These data could be related to the role of training perseverance as an emotional and behavioural regulator in the high-performance athlete (Jaenes et al., 2020; Pillay et al., 2020), as well as with the athletes' personality traits and mental health. These topics will be discussed below.

With regard to training in the present sample, although the athletes had to completely stop training in their usual environment during the confinement, a small-size area, i.e., 10 square metres (a room or garage), is enough for roller skaters to perform certain semi-static exercises (spins, steps, pirouettes or even spin jumps). Therefore, even if in a very rudimentary way, some roller skaters had the possibility to continue doing specific training. Probably thanks to that, the athletes stayed physically and mentally stimulated.

It must be noted that, when we speak about following a training programme, we refer to one's perception of the programme within the confinement, established either by the athletes or with assistance from their coaches (this was not recorded). In this exceptional situation, the skaters perceived that they kept the training programmes *in situ* (adapted to the confinement situation), which were not comparable to their usual training programmes without confinement. In the future, it would be interesting to record and assess the impact of the training programmes designed, coaches' involvement and supervision (strength training programme, transference exercises that can be performed at home, explanatory videos, online sessions, etc.).

With regard to the personality traits, this group of athletes presented high scores in optimism and resilience, medium scores in active coping strategies and low scores in passive coping strategies. These findings are in line with studies conducted in high-performance athletes that highlighted variables such as optimism (García-Naveira, 2018; García-Naveira et al., 2015; Ortín et al., 2013), resilience (Bicalho et al., 2020; Reche et al., 2016; Trigueros et al., 2020) and active coping strategies (Aguinaga et al., 2021; García-Naveira, 2015; Reche et al., 2018), which were associated with higher sport performance and better mental health protection. As it was observed, they were even maintained during the confinement, despite having spent two months in lockdown and not being able to train normally.

In the present study, a coping strategy style specific to this sample was detected, which consisted of moderate cognitive and social coping and low avoidance and spiritual coping. This seemed to help them during the home lockdown situation. These results are in accordance with studies that reported that high-performance athletes used active coping strategies during the confinement (e.g. problem solving and positive re-evaluation), applying resources to find a solution to the situation and to minimise the effects of stressing factors by directly addressing them (Clemente-Suárez et al., 2020; di Fronso et al., 2020; León et al., 2021; Mon-López et al., 2020; Szczypińska et al., 2021).

With regard to mental health, the athletes obtained high and medium scores in psychological well-being. High-performance athletes are characterised by high psychological well-being (García-Naveira, 2016; Garcia-Naveira et al., 2017;

Rivas et al., 2012; Romero et al., 2013; Romero et al., 2010). Therefore, this characteristic may have regulated the impact of this stressful confinement situation and allowed them to keep optimal levels of psychological well-being (León et al., 2021).

Furthermore, although high performance is not always considered to be healthy at the emotional level (García-Naveira, 2016; Garcia-Naveira et al., 2017; Rivas et al., 2012), the skaters presented a medium level of psychological distress. This may be because they were not exposed to the high sports demands, potential injuries or competition stress, or because they already presented good emotional health prior to the confinement situation. Either way, although the home lockdown and its consequences may have been a stressing factor (Di Cagno et al., 2020), it seems not to have had a large impact on the athletes' emotional health, as suggested by González-Hernández et al. (2021), due to their personal traits and resources. In spite of the above, it would have been interesting to have the athletes' pre-pandemic behavioural and health data in order to analyse the potential changes during the confinement (Alarcón & Hall-López, 2020; Zamarripa et al., 2021).

This circumstance becomes especially relevant and several questions arise with regard to competitive/non-competitive periods, and return-to-competition periods. The non-competitive periods during the season are, in fact, time intervals used to reduce the athlete's emotional stress level, so that they can recover from the central fatigue accumulated over competitions (as well as from the effects that emotional stress has on the body, especially at the metabolic and muscular levels). The 3 or 4 months of confinement could be considered as a non-competitive period within the season, which would mean 8 months of competition followed by 4 months of home lockdown. That is, 12 months in a row under a constant emotional distress level. How has this fact affected the skaters' performance after the confinement? What about their future sports career, injuries, or withdrawal from sport? And their mental health? All these topics could be addressed in future studies.

Regarding mental health predictors, apart from the role of optimism and active coping strategies in the positive emotion regulation and the development of habits and routines during the confinement, resilience (in particular, personal resources and family social resources) was also a noteworthy factor in the athletes' emotional health. On one hand, as mentioned above, high-performance athletes are characterised by high resilience, which is not only associated with better performance but also protects psychological health. On the other hand, resilience is a personality trait that high-performance athletes used during the confinement to adapt to the situation (Bicalho et al., 2020; Gupta & McCarthy, 2021). In this regard, the athletes have shaped their personality over many years of training thanks to high levels of discipline and responsibility, the acknowledgement of their own abilities, great tolerance to adversity and a high concentration capacity, together with family support and team cohesion. Now they have put all this into practice during the home lockdown.

It must also be highlighted that psychological distress is positively associated with the avoidance coping strategy. The use of avoidance strategies focused on distancing and denial have been associated in the literature with poorer health (Lazarus & Folkman, 1986). This is because, by means of these strategies, the individual 'distances themselves' from the problematic situation. However, avoidance is not the solution to the problem, but the softening of the momentary emotional response.

As regards gender differences, female high-performance athletes presented more negative thoughts about their health and future, they felt more irritated, tenser and sadder, they reported greater difficulties to fall asleep, and they perceived less support, felt less energetic and presented higher psychological stress than their male counterparts. These data agree with studies conducted with the general population (Alsashe et al., 2020; Fu et al., 2020; Pieh et al., 2020; Rossi et al., 2020; Xionga et al., 2020) and athletes populations (Clemente-Suárez et al., 2020; di Fronso et al., 2020; León et al., 2021; Mon-López et al., 2020), which reported that confinement affected women to a greater extent than men in terms of mental health, emotional response, healthy habits and (general and sport) behavioural patterns. On one hand, there may be pre-existing gender differences associated with certain personality traits (e.g. neuroticism), coping strategies (e.g. emotional self-management), social stereotypes (e.g. roles and tasks at home) or sport inequalities (e.g. salary differences) that made women's emotional response slightly more intense and more badly adjusted during the confinement. On the other hand, in the light of the moderately adjusted profile of the present sample, as suggested by Szczypińska et al. (2021), the high-performance athlete profile is more determining than gender.

To conclude, the results of this study need to be cautiously interpreted, since it presents certain limitations, including those inherent to the use of self-reports, online assessment, sample size, participants' age, personal and sport circumstances, different stages within confinement, previous assessment of personality traits and mental health, etc., which could be borne in mind in future studies. Besides, the participants were skaters of different skating modalities, and they presented specific characteristics that may not represent other groups of high-performance athletes.

As regards the data practical application, it is noteworthy to highlight the importance of psychological assistance during the confinement and the COVID-19 pandemic, both at the personal and sport levels, in order to cope with the various circumstances an individual may experience. To do so, collaboration is required from the relevant sport and institutional bodies in order to design psychological support programmes that help generate spaces where the athletes can share their emotions and where their habits and training programmes can be monitored. Other ideas would be to organise support groups of team mates and training staff, to provide guidance and advice to families, or to address gender differences.

To this end, possible actions include: conducting regular checks with athletes, offering appointments with a sport psychologist through various telepsychology

tools, and encouraging athletes to keep social interaction with family, friends and team mates through the phone or video chat.

Finally, the psychologist could assess the personality profiles and mental health before (as a positive indicator of coping), during (monitoring) and after the confinement (return to activity, assessment and monitoring), as well as develop the athletes' resilience. Moreover, it is essential to take care of the athletes' psychological well-being and emotional health. Thus, individual assistance is needed to analyse their personal and sport situation, adherence to training and healthy habits, and the difficulties encountered, as well as to train their emotional self-management in order to soften the confinement's emotional impact.

5 CONCLUSIONS

Competition sport, well understood, can provide the athlete with various benefits from several perspectives. It contributes, together with nutrition, to the development of the musculoskeletal system and body weight control; it promotes the assimilation of fundamental values such as discipline, respect, effort or frustration tolerance; it helps to stand pain (associated with high-intensity efforts, traumas or injuries), fatigue, low performance, bad results; and it even helps to cope with negative emotional states such as sadness, derived from all these unpleasant issues. Furthermore, as mentioned above, this is related to the development of certain personality traits, like resilience, as a result of the interaction among the subject's genetics, the context and their sport experiences (García-Naveira & Ruiz-Barquín, 2013).

It is concluded that high-performance athletes presented good behavioural adaptation and mental health during the COVID-19 confinement, possibly because certain personality traits (optimism, resilience and active coping strategies), among other qualities, acted as positive regulators in this potentially stressful situation.

Lastly, it would be advisable to train these factors in order to cope with various stressful situations derived from sport, life or future extraordinary events like, for example, home lockdown caused by new pandemics. This psychological training could be extended to the general population, as they may not have such a positive psychological profile, since they have not had the formative background and experiences specific to high-performance sport; and to women, who showed worse emotional and behavioural responses.

REFERENCES

Aguinaga, Í., Herrero-Fernández, D., y Santamaría, T. (2021). Factor protector de las estrategias de afrontamiento y la cohesión de grupo sobre el bienestar psicológico ante situaciones de ansiedad competitiva en futbolistas. *Cuadernos de Psicología del Deporte*, 21(1), 86-101. <https://doi.org/10.6018/cpd.414281>

- Alarcón Meza, E., & Hall-López, J. (2020). Actividad física en estudiantes deportistas universitarios, previo y en el confinamiento por pandemia asociada al COVID-19 (Physical activity in university student athletes, prior and in confinement due to pandemic associated with COVID-19). *Retos*, 39, 572-575. <https://doi.org/10.47197/retos.v0i39.81293>
- Alsálhe, T., Aljaloud, S., Chalghaf, N., Guelmami, N., Alhazza, D., Azaiez, F., y Bragazzi, N. (2020). Moderation effect of physical activity on the relationship between fear of covid-19 and general distress: a pilot case study in arabic countries. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2020.570085>
- AL-Omiri, M., Alzoubi, I., Nazeh, A., Alomiri, A., Maswady, M., y Lynch, E. (2021). COVID-19 and personality: a cross-sectional multicenter study of the relationship between personality factors and COVID-19 related impacts, concerns, and behaviors. *Frontiers in Psychiatry*, 12. <https://doi.org/10.3389/fpsyg.2021.608730>
- Bicalho, C.C.F., Melo, G.F., y Noce, F. (2020). Resilience of athletes: a systematic review based on a citation network analysis. *Cuadernos de Psicología del Deporte*, 20(3), 26-40.
- Brand, R., Timme, S., y Nosrat, S. (2020). When pandemic hits: exercise frequency and subjective well-being during COVID-19 pandemic. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2020.570567>
- Brooks, S.K., Webster, R.K., Smith, L.E., Woodland, L., Wessley, S., Greenberg, N., Rubin, G.J. et al. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet*, 395(10227), 912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8).
- Cao, W., Fang, Z., Hou, G., Han M., Xua, X., Dong, J., y Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287(112934). <https://doi.org/10.1016/j.psychres.2020.112934>.
- Carver, C. S. (1997). You want to measure coping but your protocol's too long: consider the Brief COPE. *International Journal of Behavioral Medicine*, 4(1), 92-100.
- Casagrande, M., Favieri, F., Tambelli, R., y Forte, G. (2020). The enemy who sealed the world: Effects quarantine due to the COVID-19 on sleep quality, anxiety, and psychological distress in the Italian population. *Sleep Medicine*, 75, 12-20. <https://doi.org/10.1016/j.sleep.2020.05.011>
- Clemente-Suárez, V. J., Fuentes-García, J. P., de la Vega, R., y Martínez-Patiño, M. J. (2020). Modulators of the personal and professional threat perception of Olympic athletes in the actual COVID-19 crisis. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2020.01985>
- Choi, C. y Bum, C. H. (2020). Changes in the type of sports activity due to COVID-19: hypochondriasis and the intention of continuous participation in sports. *International Journal of Environmental Research and Public Health*, 17, 2-11. <https://doi.org/10.3390/ijerph17134871>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd). Hillsdale, NJ: Erlbaum.
- Constant, A., Conserve, D., Gallopel-Morvan, K., y Raude, J. (2020). Socio-cognitive factors associated with lifestyle changes in response to the COVID-19 epidemic in the general population: results from a cross-

- sectional study in France. *Frontiers in Psychology*.
<https://doi.org/10.3389/fpsyg.2020.579460>
- Díaz, D., Rodríguez-Carvajal, R., Blanco, A., Moreno-Jiménez, B., Gallardo, I., Valle, C., y Van Dierendonck, D. (2006). Adaptación española de las escalas de bienestar psicológico de Ryff. *Psicothema*, 18, 572-577.
- di Cagno A, Buonsenso A, Baralla F, Grazioli E, Di Martino G, Lecce E, Calcagno G, Fiorilli G. (2020) Psychological Impact of the Quarantine-Induced Stress during the Coronavirus (COVID-19) Outbreak among Italian Athletes. *Int J Environ Res Public Health*. 17(23):8867. doi: 10.3390/ijerph17238867.
- di Fronso, S., Costa, S., Montesano, C., Di Gruttola, F., Ciofi, E. G., Morgilli, L., et al. (2020). The effects of COVID-19 pandemic on perceived stress and psychobiosocial states in Italian athletes. *International Journal of Sport and Exercise Psychology*. <https://doi.org/10.1080/1612197X.2020.1802612>
- Ferreira-Júnior J., Freitas E., y Chaves, S. (2020). Exercise: A Protective measure or an “open window” for COVID-19? A mini review. *Frontiers in Sports and Active Living*. <https://doi.org/10.3389/fspor.2020.00061>
- Fínez, M. J. y Morán, C. (2017). Resiliencia y autovaloraciones esenciales: estudio comparativo en adolescentes y jóvenes. *Psychology, Society & Education*, 9(3), 347-356. <https://doi.org/10.25115/psyse.v9i3.857>
- Fu, W., Wang, C., Zou, L., Guo, Y., Lu, Z., Yan, S., y Mao, J. (2020). Psychological health, sleep quality, and coping styles to stress facing the COVID-19 in Wuhan, China. *Translational Psychiatry*, 10(225). <https://doi.org/10.1038/s41398-020-00913-3>
- García-Naveira, A. (2015). Optimismo, estrategia de afrontamiento, afectividad y satisfacción en la vida en atletas adolescentes de rendimiento. *Anuario de Psicología*, 45(2), 161-175.
- García-Naveira, A. (2016). Percepción del bienestar y de la salud psicológica, y la eficacia de un programa de intervención en coaching en deportistas de rendimiento. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte*, 11(2), 211-219.
- García-Naveira, A. (2018). Optimismo, autoeficacia general y competitividad en jóvenes atletas de alto rendimiento. *Cultura, Ciencia y Deporte*, 37(13), 71-81.
- García-Naveira, A., García-Mas, A., Ruiz-Barquín, R. y Cantón, E. (2017). Programa de intervención basada en el coaching en jóvenes deportistas de alto rendimiento, y su relación con la percepción de bienestar y salud psicológica. *Revista de Psicología del Deporte*, 26(2), 37-44.
- García-Naveira, A., y Ruiz-Barquín, R. R. (2013). La personalidad del deportista: una revisión teórica desde la perspectiva de rasgos / The personality of the athlete: a theoretical review from the perspective of traits. *Revista Internacional de Medicina y Ciencias de la Actividad Física y del Deporte*, 13(51), 627-645.

- García-Naveira, A., Ruiz-Barquín, R., y Ortín, F. (2015). Optimismo y competitividad en jóvenes atletas de rendimiento. *Revista Latinoamericana de Psicología*, 47(2), 124-135. <https://doi.org/10.1016/j.rlp.2014.08.001>
- García-Naveira, A. y Locatelli, L. (2014). Psychological benefits in Physical Activity and sports. En Raul Wolfe (Ed.), *Psychological Benefits in Physical Activity and Sport* (pp. 91-103). Publisher: Nova, Editors.
- Goldberg, D. P., y Hillier, V. F. (1979). A scale version of the General Health Questionnaire. *Psychological Medicine*, 9, 139- 145.
- Gómez-Salgado, J., Andrés-Villas, M., Domínguez-Salas, S., Díaz-Milanés, D., y Ruiz-Frutos, C. (2020). Related Health Factors of Psychological Distress During the COVID-19 Pandemic in Spain. *International Journal of Environmental Research and Public Health*, 17(11), 3947. <http://dx.doi.org/10.3390/ijerph17113947>
- González-Hernández, J., López-Mora, C., Yüce, A., Nogueira-López, A., y Tovar-Gálvez, M.I. (2021). "Oh, my god! my season is over!" COVID-19 and regulation of the psychological response in spanish high-performance athletes. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2021.622529>
- Gupta, S. y McCarthy, P. (2021). Sporting resilience during COVID-19: What is the nature of this Adversity and how are competitive elite athletes adapting? *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2021.611261>
- Harms, C., Pooley, J.A., y Cohen, L. (2017). The Protective Factors for Resilience Scale (PFRS): *Development of the scale*. *Cogent Psychology*, 4(1). <https://doi.org/10.1080/23311908.2017.1400415>
- Horesh, D. y Brown A.D. (2020). Traumatic stress in the age of COVID-19: A call to close critical gaps and adapt to new realities. *Psychological Trauma: Theory, Research, Practice, and Policy*, 12(4), 331-335. <https://doi.org/10.1037/tra0000592>
- Hossien, A., Gazerani, P., Moghadam, A., y Jaenes, J. C. (2020). Addressing potential impact of COVID-19 pandemic on physical and mental health of elite athletes. *Brain, Behavior, and Immunity*, 87, 147–148. <https://doi.org/10.1016/j.bbi.2020.05.011>
- Ingram, J., Maciejewski, G., y Hand, C. (2020). Changes in diet, sleep, and physical activity are associated with differences in negative mood during COVID-19 lockdown. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2020.588604>
- Jaenes, J. C., García-González, P., González-López, J., Costa-Aguado, M., García-Ordoñez, J., y Mehrsafari, A. (2020). ¿El entrenamiento, un moderador de reacciones emocionales en el confinamiento por COVID-19 en deportistas de alto rendimiento? *Revista Andaluza de Medicina del Deporte*, 13(3), 120-121. <https://doi.org/10.33155/j.ramd.2020.06.003>
- Jiménez-Pavón, D., Carbonell-Baeza, A., y Lavie, C. J. (2020). Physical exercise as therapy to fight against the mental and physical consequences of COVID-19 quarantine: special focus in older people. *Progress in Cardiovascular Diseases*, 63(3), 386-388. <https://doi.org/10.1016/j.pcad.2020.03.009>

- Jungmann, S. y Witthöft, M. (2020). Health anxiety, cyberchondria, and coping in the current COVID-19 pandemic: which factors are related to coronavirus anxiety? *Journal of Anxiety Disorders*, 73. <https://doi.org/10.1016/j.janxdis.2020.102239>
- Lazarus, S. y Folkman, S. (1986). *Estrés y procesos cognitivos*. Barcelona: Martínez Roca.
- Lesser, I. y Nienhuis, C. (2020). The impact of COVID-19 on physical activity behavior and well-being of Canadians. *International Journal of Environmental Research and Public Health*, 17, 3899. <https://doi.org/10.3390/ijerph17113899>
- León, E., Neipp López, M. del C., y Nuñez, R. M. (2020). Propiedades psicométricas de la versión española de la Escala de Factores Protectores de la Resiliencia. *Anales de Psicología*, 36(3), 468-474. <https://doi.org/10.6018/analesps.406231>
- León, E., Moreno-Tenas, A., Boix-Vilella, S., García-Naveira, A. y Serrano, M. (2021). Habits and psychological factors associated with changes in physical activity due to COVID-19 confinement. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2021.620745>
- Liu, S., Lithopoulos, A., Zhang, C., Garcia-Barrera, M., y Rhodes, R. (2021). Personality and perceived stress during COVID-19 pandemic: Testing the mediating role of perceived threat and efficacy. *Personality and Individual Differences*, 168. <https://doi.org/10.1016/j.paid.2020.110351>
- López-Bueno, R., Calatayud, J., Casaña, J., Casajús, J. A., Smith, L., Tully, M. A., Andersen, L. L., y López-Sánchez, G. F. (2020). COVID-19 confinement and health risk behaviors in Spain. *Frontiers in Psychology*, 11(1426), 1-10. <http://doi.org/10.3389/fpsyg.2020.01426>
- Mon-López, D., García-Aliaga, Ginés, A., y Muriarte, D. (2020). How has COVID-19 modified training and mood in professional and nonprofessional football players? *Physiology & Behavior*, 227, 1-6. <https://doi.org/10.1016/j.physbeh.2020.113148>
- Morán, C., Landero, R. y González, M. (2009). COPE-28: un análisis psicométrico de la versión en español del Brief COPE. *Universitas Psychologica*, 9(2), 543-552.
- Moscoso-Sánchez, D. (2020). El contexto del deporte en España durante la crisis sanitaria de la COVID-19. *Sociología del Deporte*, 1(1), 15-19. <http://doi.org/10.46661/socioldeporte.5000>
- Ortín, F. J., De la Vega, R., y Gosálvez, J. (2013). Optimismo, ansiedad-estado y autoconfianza en jóvenes jugadores de balonmano. *Anales de Psicología*, 29(3). <https://doi.org/10.6018/analesps.29.3.175751>
- Otero, J. M., Luengo, A., Romero, F., Gómez, J. A. y Catro, C. (1998). *Psicología de la personalidad. Manual de prácticas*. Barcelona: Ariel Practicum
- Padrón, A., Galán, I., Durbán, M., Gandarillas, A., y Rodríguez-Artalejo, F. (2012). Confirmatory factor analysis of the General Health Questionnaire (GHQ-12) in a population of Spanish adolescents. *Quality of Life Research*, 21, 1291-1298.
- Pieh, C., Budimir, S. y Probst, T. (2020). The effect of age, gender, income, work, and physical activity on mental health during coronavirus disease (COVID-

- 19) lockdown in Austria. *Journal of Psychosomatic Research*, 136, 1-9. <https://doi.org/10.1016/j.jpsychores.2020.110186>
- Pillay, L., van Rensburg, D. C., van Rensburg, A. J., Ramagole, D., Holtzhausen, L., Dijkstra, H. P., et al. (2020). Nowhere to hide: the significant impact of coronavirus disease 2019 (COVID-19) measures on elite and semi-elite South African athletes. *Journal of Science and Medicine in Sport*, 23, 670–679. <https://doi.org/10.1016/j.jsams.2020.05.016>
- Ramírez-Ortiz, J., Castro-Quintero, D., Lerma-Córdoba, C., Yela-Ceballos, F., y Escobar -Córdoba, F. (2020). Consecuencias de la pandemia COVID-19 en la Salud Mental asociadas al aislamiento social. *SciELO Preprints*, 1–21. <https://doi.org/10.1590/SCIELOPREPRINTS.303>
- Reche, C., Gómez-Díaz, M., Martínez-Rodríguez, A., y Tutte, V. (2018). El optimismo como contribución a la resiliencia deportiva. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte*, 13(1), 131-136.
- Reche, C., Tutte, V., y Ortín, F. (2016). Resiliencia, optimismo y burnout en judokas de competición uruguayos. *Revista Iberoamericana de Psicología del Ejercicio y el Deporte*, 9(2), 271-286.
- Rivas, C., Romero, A., Pérez-Llantada, M. C., López, A., Portau, M., Molina, I., González, J. y García-Mas, A. (2012). Bienestar psicológico, salud general, autonomía percibida y lesiones en futbolistas. *Revista de Psicología del Deporte*, 21 (2), 365-371.
- Rocha, B., Pérez, K., Rodríguez-Sanz, M., Borrell, C. y Obiols, J. (2011). Propiedades psicométricas y valores normativos del General Health Questionnaire (GHQ-12) en población general española. *International Journal of Clinical and Health Psychology*, 11, 125-139.
- Romero, A., Zapata, R., García-Mas, A., Brustad, R., Garrido, R. y Letelier, A. (2010). Estrategias de afrontamiento y bienestar psicológico en jóvenes tenistas de competición. *Revista de Psicología del Deporte*, 19(1), 117-133.
- Romero, A., Zapata, R., Letelier, A., López, I. y Garcia-Mas, A. (2013). Autonomy, coping strategies and psychological well-being in young professional tennis players. *Spanish Journal of Psychology*, 16(e75), 1-11. <https://doi.org/10.1017/sjp.2013.70>
- Rossi, R., Socci, V., Talevi, D., Mensi, S., Niolu, C., Pacitti, Di Marco, F., Rossi, A., Siracusano, A., y Di Lorenzo, G. (2020). COVID-19 pandemic and lockdown measures impact on mental health among the general population in Italy. *Frontiers Psychiatry*, 7. <https://doi.org/10.3389/fpsy.2020.00790>
- Rubio, V., Sánchez-Iglesias, I., Bueno, M., y Martín, G. (2021). Athletes' psychological adaptation to confinement due to COVID-19: a longitudinal study. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2020.613495>
- Ruiz-Cantero, M.T. (2021). Las estadísticas sanitarias y la invisibilidad por sexo y de género durante la epidemia de COVID-19. *Gaceta Sanitaria*, 35(1), 95-98. <https://doi.org/10.1016/j.gaceta.2020.04.008>
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 57, 316-331. <http://dx.doi.org/10.1111/j.1939-0025.1987.tb03541.x>

- Samuel, R., Tenenbaum, G., y Galily, Y. (2020). The 2020 Coronavirus pandemic as a change-event in sport performers' careers: conceptual and applied practice considerations. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2020.567966>
- Sánchez-López, M. P., y Dresch, V. (2008). The 12-item General Health Questionnaire (GHQ-12): reliability, external validity, and factor structure in the Spanish population. *Psicothema*, 20(4), 839-843
- Scheier, M. F., Carver, C. S. y Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self mastery and self esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67, 1.063-1.078.
- Szczyplińska, M., Samełko, A. y Guskowska, M. (2021). Strategies for coping with stress in athletes during the COVID-19 pandemic and their predictors. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2021.624949>
- Trigueros, R., Aguilar-Parra, J.M., Álvarez, J.F., Cangas, A.J., y López-Liria, R. (2020). The effect of the motivation on the resilience and anxiety of the athlete. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*, 20(77), 73-86. <https://doi.org/10.15366/rimcafd2020.77.005>
- Van Dierendonck, D. (2004). The construct validity of Ryff's scale of psychological well-being and its extension with spiritual well-being. *Personality and Individual Differences*, 36(3), 629-644. [https://doi.org/10.1016/S0191-8869\(03\)00122-3](https://doi.org/10.1016/S0191-8869(03)00122-3)
- Werneke, U., Goldberg, D. P., Yalcin, y Üstün, B. T. (2000). The stability of the factor structure of the General Health Questionnaire. *Psychological Medicine*, 30, 823-829.
- Woods, J., Hutchinson, N., Powers, S., Roberts, W., Gomez-Cabrera, M., Radak, Z., Berkes, I., Boros, A., Boldogh, I., Leeuwenburgh, C., Coelho-Júnior, H., Marzetti, E., Cheng, Y., Liu, J., Durstine, J., Sun, J., y Ji, L. (2020). The COVID-19 pandemic and physical activity. *Sports Medicine and Health Science*. <https://doi.org/10.1016/j.smhs.2020.05.006>
- World Medical Association (WMA, 2013). World Medical Association declaration of Helsinki ethical principles for medical research involving human subjects. *Clinical Review & Education*, 310(20), 2191-2194.
- Xionga, J., Lipsitzc, O., Nasric, F., Luic, L., Gillc, H., Phanc, L., Chen-Lic, D., Iacobuccic, M., Hoe, R., Majeedc, A., y McIntyrea, R. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders*, 277. <https://doi.org/10.1016/j.jad.2020.08.001>
- Ye, Z., Yang, X., Zeng, C., Li, X., Wang, Y., Shen, Z., y Lin, D. (2020). Resilience, social support, and coping as mediators between COVID-19-related stressful experiences and acute stress disorder among college students in China. *Applied Psychology: Health and Well-Being*. <https://doi.org/10.1111/aphw.12211>
- Zamarripa, J., Marroquín-Zepeda, S., Ceballos-Gurrola, O., Flores-Allende, G., & García-Gallegos, J. (2021). Nivel de actividad física y conductas sedentarias antes y durante el confinamiento a causa del COVID-19 en adultos mexicanos. (Level of physical activity and sedentary behaviors

before and during confinement due to COVID-19 in Mexican adults). *Retos*, 42, 898-905. <https://doi.org/10.47197/retos.v42i0.87278>

Número de citas totales / Total references: 77 (100%)

Número de citas propias de la revista / Journal's own references: 2 (2.5%)

[Rev.int.med.cienc.act.fis.deporte](#)- vol. X - número X - ISSN: 1577-0354