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Original article

THE IMPACT OF THE COVID-19 PANDEMIC ON MARTIAL ARTS ATHLETES

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Abstract

Objectives. The study analyzes the impact of the Covid-19 pandemic on the elite athletes practicing martial arts both in terms of fear and intolerance of uncertainty.

Methods of research. 30 athletes practicing martial arts participated in this study: 10- pankration, 10- judo and 10 - wrestling, aged from 15 to 35 years. The impact of Covid-19 pandemic on the elite martial arts athletes was assessed from the perspective of the two scales (Fear Scale and Intolerance Scale) obtained from Research Central. The Fear Scale related to Covid-19 includes 7 items and was created by Ahorsu et al. (2020). The Intolerance of Uncertainty Scale – short form - includes 12 items. Thus, the prospective anxiety and inhibitory anxiety were calculated. The athletes were assessed through the two scales, in a single ascertaining stage.

Results. Regarding the Fear of Covid-19 Scale (the reference range is between 7 and 35), the results indicate an increased fear of Covid-19: most athletes had results over 25. In the case of the Intolerance of Uncertainty Scale (reference ranges: from 12 to 28), the athletes obtained scores between moderate tolerance to uncertainty and increased tolerance to uncertainty (namely scores from 28 to 60). As for the two factors resulting from this scale: the prospective anxiety – the scores ranged from 25 to 38; for the second factor – inhibitory anxiety - the scores ranged from 19 to 35, which shows a prospective anxiety and a moderate to high inhibitory anxiety.

Conclusions. The COVID-19 pandemic is one of the most important sources of current uncertainty in the physical and mental health of the athletes and of the entire population too. The results of the study provided relevant information about the fear of Covid-19 pandemic and of intolerance of uncertainty as well. Thanks to this information, the athletes were offered methods to cope with the pandemic period, such as: relaxation techniques and breathing techniques meant to optimize and improve sports performance.

Key words: anxiety, combat sports, fear, mechanisms, performance

Introduction

Sport success among the athletes of similar level of skills can depend on the individual differences regarding the experienced stress and the coping strategies. Sport is probably one of the fields that the coronavirus pandemic affected the most (Çakir, 2020). Coaches represent significant values; their behavior, advice or aggressive manifestations can influence the mental health of athletes, especially the youngest ones. The COVID-19 pandemic has affected many areas of life, including sport, in particular by significantly decreasing the physical activity and by deteriorating the psychological well-being (Makarowski et al., 2020; Monterrosa Quintero et al., 2022; Predoiu et al., 2022).

Pandemic restrictions have severely limited the possibilities of the professional athletes to train and participate in competitions. This situation has caused an intense stress for many athletes who rely on sport as their main source of income (Makarowski et al., 2022). The existence of the pandemic makes the state of happiness of the athletes questionable; several studies have reported that the athletes experience loneliness, anxiety, stress and even depression (Wandik, Guntoro & Putra, 2021).

The sudden interruption of the training schedule because of the COVID-19 pandemic determines most of the athletes to set new goals for the season when the training will be resumed (Leguizamo et al., 2021). The combat sports athletes, who are supposed to compete according to their weight classes, by regulation, seem to be particularly affected (Herrera-Valenzuela et al., 2020; Levy, Tarver & Douglas, 2021). However, there are studies that aim at investigating the differences depending on competition level, extrinsic rewards and participation category of the athletes. These studies try to determine how the athletic identity, age, sport category and number of years of participation in sports interact with the psychological well-being (Uroh & Adewunmi, 2021).

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Fear is an adaptive defense mechanism that is fundamental to survival and involves several biological processes to provide a response to potentially threatening events. But when fear is excessive, it becomes harmful. During a pandemic, the fear increases the level of anxiety and stress (Ornell et al., 2020).

If it were not for the feeling of fear, we would not be able to protect ourselves from the dangers that occur and can have serious consequences. Fear represents the biochemical and also emotional response of the human being in front of a danger (Brătianu, 2015; Steimer, 2022). Although it is a negative and, generally, unpleasant emotion, fear is useful because it plays an important role in the safety and integrity of the humans. Fear mobilizes the energy of the body for reacting to danger. As a biochemical response, fear causes physical, bodily reactions such as sweating, an increased heart rate or a high level of adrenaline (Oosterwijk, S., 2010). This reaction is known as a “fight or flight” type response, in which the body prepares either to fight (namely to face the danger) or to flee in order to save itself (Bracha, H. S., 2004; Milosevic, 2015; Van Duinen, 2010). This type of reaction is indispensable for the evolution and survival of human species. As an emotional response, fear can be accompanied by feelings of tiredness, sadness, sense of control loss or acute feeling of imminent danger (Fontes-Perryman & Spina, 2022; Bowman, 2001; Horwitz & Wakefield, 2012; Roberts, 2013).

Uncertainty is a cognitive state generated by the nature of events that occur in the surrounding reality and by the incomplete information and knowledge about an object or event (Beghetto, 2022).

Cognitive uncertainty expresses our inability to fully know things and events in the nature and social environment in which we live (Enke & Graeber, 2019; Mushtaq, Bland & Schaefer, 2011). This can be objective but also subjective. When speaking about objective uncertainty, we refer to the ratio between the quantity and quality of the knowledge necessary for making a decision. When we discuss about subjective uncertainty, we refer to the perception of the decision maker in terms of level of certainty or uncertainty (Brătianu, 2015).

The intolerance of uncertainty is defined as an assembly of negative cognitive, emotional and behavioral responses, caused by the awareness of the ignorance related to certain aspects of life in certain situations. Intolerance of uncertainty is a dispositional characteristic and refers to the tendency to negatively react (emotionally, cognitively and behaviorally) to uncertain situations and events (Robichaud, 2013). Thus, a high level of intolerance can lead to generalized anxiety. People with intolerance of uncertainty have strong reactions when exposed. They worry and back off, they avoid or eliminate uncertainty. If highly intolerant to uncertainty, a person can show a variety of time-consuming and tiring behaviors that can cause stress and anxiety (Chen & Hong, 2010; Yook, Kim, Suh & Lee, 2010). Anxiety is a psychological, physiological and behavioral state induced in animals and humans by an actual or potential threat to well-being or survival. It is characterized by increased stimulation, expectancy, autonomous and neuroendocrine activation and specific behavior patterns (Steimer, 2022).

This period, which we are all going through, the pandemic caused by Covid-19 virus, shows us that uncertainty is an inevitable part of life, because we have no way to predict or control the future. We are only able to control what we currently have or do as much as we are allowed by the information we detain. Some people have learned how to live in these conditions, but the uncertainty is intolerable for many persons (Wu et al., 2021; Del Valle et al., 2020).

People with intolerance of uncertainty have a higher level of anxiety because it is very difficult for them not to know something for sure. They associate uncertainty with a negative result, with something threatening and with the lack of control. Their core belief is that if something is not sure, it means that will end badly and they will be not able to cope. The lack of certainty for these persons can lead to excessive worrying about any kind of possibility. Fearing that everything could go wrong, they will try to prevent any problematic situation that could arise and they will always look for the perfect solution. The endless search for certainty only fuels the worries and increases the anxiety level (Green et al., 2022).

The study analyses the impact of the Covid-19 pandemic on the high-performance athletes practicing martial arts both in terms of fear and intolerance of uncertainty.

Methods

The research involved 30 athletes who practice martial arts, aged between 15 and 35 years. The study was carried out throughout one month (March 2021), in collaboration with the Romanian Federation of Pankration Athlima. The research monitored to what extent the fear and intolerance to uncertainty affect sports performance during Covid-19 pandemic and tried to find optimization mechanisms.

The research was conducted in accordance with the Helsinki Declaration and was approved by the local ethics committee of the Doctoral School of Sports Sciences and Physical Education, University of Pitești.

In order to be able to observe the impact of Covid-19 pandemic on the high-performance athletes who practice martial arts, the athletes were assessed according the two scales obtained from Research Central: *Fear of Covid-*

19 scale, which includes 7 items, created by Ahorsu et al., 2020 and the *Intolerance of Uncertainty Scale* – short version. This one contains 12 items enabling the calculation of two factors: one factor is the prospective anxiety and the other factor is the inhibitory anxiety. The assessment of the athletes was carried out in a single stage, by means of the two scales mentioned above.

The impact of the Covid-19 pandemic on the martial arts elite athletes was studied from the perspective of the Intolerance to uncertainty and the Fear of Covid-19 in order to optimize and improve sports performance during the pandemic.

Results

The obtained results provided significant information that helped to identify the mechanisms that athletes can use to optimize and improve sports performance during the Covid-19 pandemic. The majority results were as follows: in the case of the Fear of Covid-19 scale, the reference range being rated between 7 and 35 (fig.1), most athletes had results over 25, proving an increased fear of Covid-19. The Intolerance of Uncertainty Scale had the following reference intervals: between 12 and 28 – low tolerance to uncertainty; between 28 and 44 - moderate tolerance to uncertainty; between 44 and 60 – increased tolerance to uncertainty. The athletes obtained scores between moderate tolerance to uncertainty and increased tolerance to uncertainty: the scores ranged from 28 to 60 (fig.2).

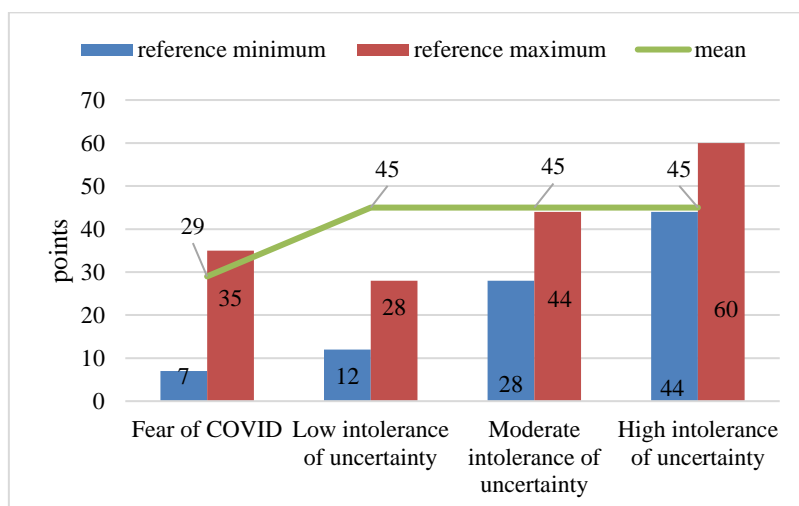


Fig. 1. Fear and intolerance

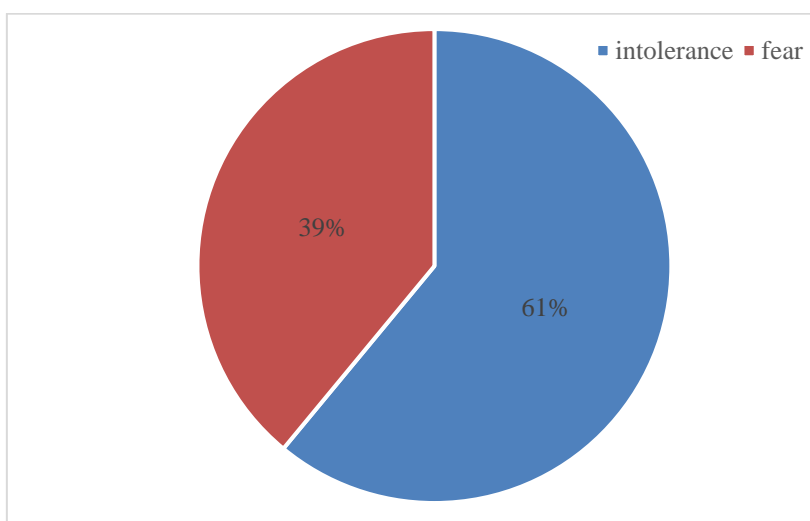


Fig. 2. Fear of Covid-19 vs Intolerance of Uncertainty

Regarding the two factors calculated within the "Intolerance of Uncertainty Scale", the following results were obtained: in the case of the "prospective anxiety" - with reference range between 7 and 35 – the athletes' scores

were between 25 and 38 respectively; in the case of the second factor “inhibitory anxiety”, with a reference range from 5 to 25 (fig.3), the scores of the athletes ranged from 19 to 35. These values highlight a moderate to high prospective anxiety and inhibitory anxiety (fig. 4).

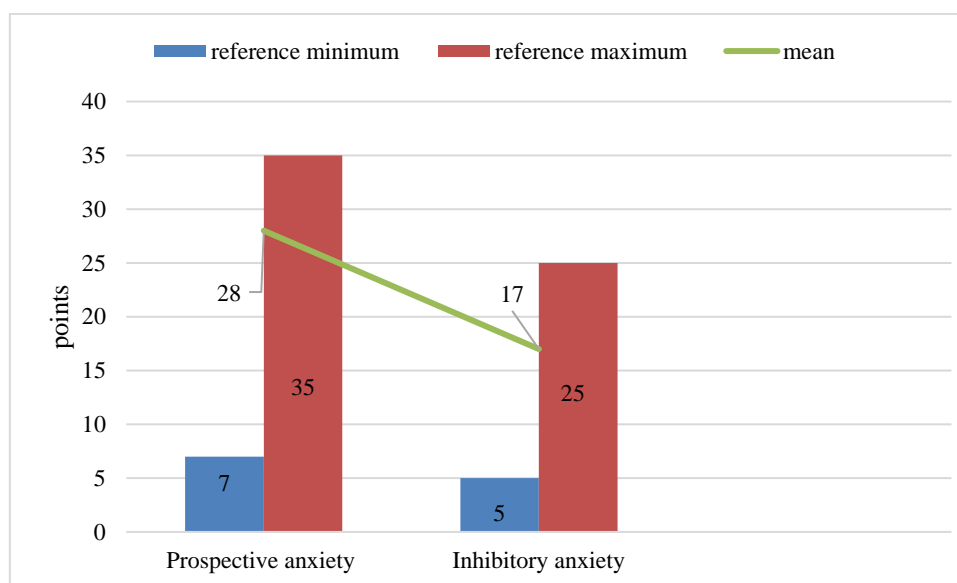


Fig. 3. Prospective anxiety and Inhibitory anxiety

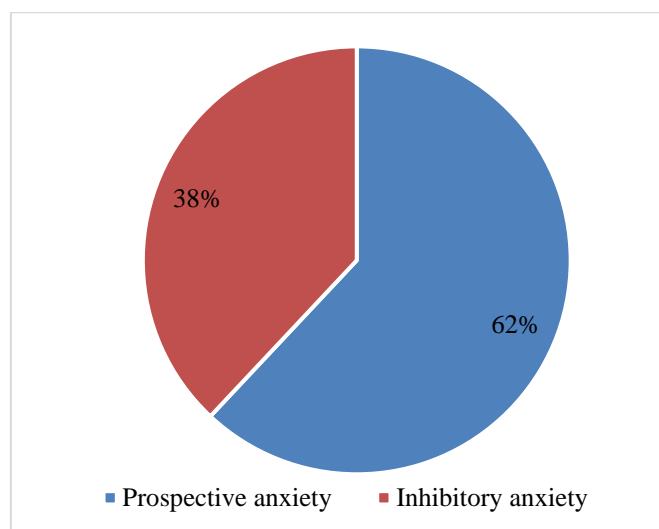


Fig.4. Prospective anxiety vs Inhibitory anxiety

Discussions

Pandemic effects do not entail an increase of the subjectively perceived psychological stress among the martial arts athletes in countries differently affected by the pandemic. As the pandemic may have long-term effects, further research is needed to monitor the athletes' stress level after its ending (Makarowski et al., 2020). Since the outbreak of the Covid-19 pandemic, economic and psycho-social disturbances have been caused in all countries until the moment when the normalization process has begun. The cancellation of sports competitions with a large number of spectators was an important decision made to protect the public health and to reduce the spreading of the pandemic (Çakir, 2020).

There were found out the following important results: according to the *Fear of Covid-19 Scale*, the results show an increased fear of Covid-19 (fig. 2). The authors of a study tested whether the embodied fear knowledge can trigger reactions of the body and amplify the following bodily reactions to fear stimuli. As expected, the authors observed embodied fear reactions while the participants to the study deciphered fear sentences or saw fearful pictures. These reactions took place in the absence of a subjective fear experience. The specialists' findings highlight that embodied emotion knowledge intensifies the subsequent emotional responding (Oosterwijk,

Topper, Rotteveel & Fischer, 2010). On the *Intolerance of Uncertainty Scale*, the reference ranges show a low tolerance to uncertainty, a moderate tolerance to uncertainty and a high tolerance to uncertainty (fig.1). Regarding the two factors specific to the Intolerance of uncertainty, there were analyzed the reference minimum and reference maximum values of the prospective anxiety and inhibitory anxiety (fig.3). It was also made a comparison between the percentage values of these two types of anxiety (fig. 4). The relationship between the competitive anxiety and the coping strategies in young athletes was examined too. It was found out that there is a significant interdependence between anxiety and the performance level in situations of competitive stress (Radochoński et al., 2011). It was also proposed a model for the relationships between the positive emotions, hope (pathways and emotional strength), sense of control, self-handicapping and pre-competitive anxiety in the high-performance martial arts athletes (Yang, Wen & Xu, 2020).

It was emphasized that a slightly above average level of verbal aggression is a specific characteristic of the successful martial arts coaches. Furthermore, it was pointed out that the implicit aggression is a better predictor of sports performance than the explicit aggression (verbal one) (Predoiu et al., 2022). It was also analyzed the relationship between perfectionism, trait anxiety and mental health indicators (mood, depression, state anxiety and stress) in high-performance athletes during the confinement caused by the COVID-19 pandemic (Leguizamo et al., 2021). Concerning the body mass of the combat sports athletes before and during confinement, it was noticed that the athletes increased their body mass over the quarantine period. Therefore, it is necessary to develop a strategy of training and diet (Herrera-Valenzuela et al., 2020). To assess the dynamics of the perceived stress as well as the coping strategies during the different waves of the COVID-19 pandemic, a longitudinal study was carried out. For this purpose, the Perceived Stress Questionnaire and the COPE license were used on a group of professional athletes from Poland, Romania and Slovakia, in 2020. The dynamics of the coping strategies – focused on emotions and issues– were also discussed among Polish, Romanian and Slovak athletes. Coaches and sports psychologists can modify the stress perceived by the athletes, while simultaneously promoting efficient coping strategies (Makarowski et al., 2022). Another study was conducted through online questionnaires and interviews with taekwondo coaches and athletes. The research focused on discussing how the practice of taekwondo changed during the COVID-19 pandemic and what types of taekwondo training are preferred by the athletes during local confinement. The results reveal the persistent fear of coronavirus in a large part of taekwondo athletes (Mihaylov, 2020). Some demographic, physical and psychosocial parameters during the COVID-19 lockdown were analyzed in the Spanish teenagers. The study aimed at the levels of self-concept and the way in which the practice of martial arts or any physical activity before confinement could have influenced the self-concept in that period (Lindell-Postigo et al., 2020). In terms of mental strength, significant variations in self-confidence and control were found out, depending on the type of sport practiced. Also, the size of the control has important variations determined by the competitors' level (El Moutaraji, Lotfi & Talbi, 2021).

Conclusions

This study was intended to help and support the high-performance athletes in successfully dealing with training sessions and competitions during the Covid-19 pandemics when everything has changed. The athletes must not be affected by the training sessions that are held with fewer athletes and by the competitions that take place without spectators.

The COVID-19 pandemic is one of the most important sources of current uncertainty in the physical and mental health of the athletes and of the entire population as well in terms of human relationships, economy and all areas of life. Uncertainty generates negative reactions at an emotional, cognitive and behavioral level. As everybody wants predictability, control and security feelings, the ambiguous and uncertain situations related to Covid-19 pandemic can be interpreted as threatening and processed in a catastrophic direction.

The results of the study provided relevant information related to the fear of Covid-19 pandemic and the intolerance to uncertainty. These results helped to offer some methods enabling the athletes to cope with this period, such as: relaxation techniques and breathing techniques meant to optimize and improve sports performance throughout the Covid-19 pandemic.

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