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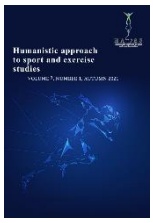

Original Article

Psychological Burnout in Elite Athletes with Disabilities: The Predictive Role of the Mood States and Mental Toughness

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Abstract: Psychological variables that affect mental health are divided into useful and harmful variables. Useful variables are beneficial for improving mental health and quality of life, and increasing well-being, for instance, happiness, calmness, vigor, and mental toughness. Harmful variables reduce mental health, quality, and enjoyment of life, for example, negative mood states, anxiety, and burnout. This study aimed to predict psychological burnout based on mood states and mental toughness of elite athletes with physical disabilities. Participants have included 150 athletes with physical disabilities (77women; 73men) competing at national or international Paralympic sports teams (mean age=42.34 ±7.44y, mean experience=8.38 ± 3.19 y) that were selected in the random method. Participants accomplished the Athlete Burnout Questionnaire, the 32-item Brunel Mood Scale, and the Sports Mental Toughness Questionnaire. Stepwise multiple linear regression analysis showed that happiness (moderate negative power, 51%), vigor (weak negative power, 28%), fatigue (weak positive power, 22%), mental toughness (medium negative power, 57%), and confidence (weak negative power, 29%) were able to predict the total burnout of the athletes with disabilities. These findings are essential for psychologists since developing and increasing the useful variables and inhibiting or decreasing the harmful variables for mental health can prevent sports burnout.

Keywords: Burnout; Disabled Athletes; Mental Health; Mental Toughness; Mood States;

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1. Introduction

1-1. Para-Sport Athletes

Several studies show that people with disabilities often have low motivation, self-confidence, self-esteem, high depression, and high levels of stress, leading to poor quality of life (Baĉanac, Milićević-Marinković, Kasum, & Marinković, 2014). Researchers have pointed out that sport is an essential factor that can positively cause to recover the psychological health of individuals with disabilities. It makes them stronger and more prepared to cope with different problems that have destroyed their self-esteem and confidence (Powell & Myers, 2017). Likewise, Baĉanac et al. (2014) showed that the psychological profiles (POMS) of athletes with and without disabilities are very similar. They found that athletes with disabilities and those without them have improved psychological skills for overcoming stress and optimized their competitive anxiety. In addition, their competitive experience had a positive correlation with their sport-confidence and psychological resilience (Powell & Myers, 2017). Evidence determined that Para-Sport athletes have developed individual traits, social support, mental toughness, resilience, optimism, and become strong in psychological skills and well-being (Macdougall, O'Halloran, Sherry, & Shield, 2016).

Despite certain advantages of sports and exercise for people with disabilities and Para-Sport athletes, sometimes these proceedings change in dimensions and aspects of championship sport. Many people with disabilities participate in physical activity and sports training programs for championship purposes (Lee & Uihlein, 2019). Participants in Para Sports may feel stress within some classification processes and tensions during the drug testing (Powell & Myers, 2017). These athletes may have limitations in physical and mobility aspects and some problems in transportation, physical pain, injury, trauma, recovery, dyspepsia, and difficulties with affect regulation (Macdougall et al., 2016). In addition, athletes with disabilities may be fighting a chronic injury as a "secondary disability." They should also be coping with their disabilities and sports burnout (Martin, 2012). Therefore, these pressures and troublesome conditions in championship sports and the struggle to gain medals may lead to psychological aftermath and then the sport's drop-out. Sports burnout and drop-out of athletes with disabilities are crucial problems. However, unfortunately, little attention has been paid to the mental exhaustion and burnout or sports dropout of athletes with disabilities in the past researches. For this reason, we explain the available evidence of burnout in athletes without disabilities because studies on athletes with and without disabilities have more similarities in sports psychological patterns than differences (Martin, 2012).

1-2. Sport Burnout

Various causes explain the reduced performance, burnout, or sports drop-out in high-performance athletes (Souza, Osiecki, Silva, Costa, & Stefanello, 2018). Nowadays, researchers have recognized burnout as a striking worry among athletes. It has been assumed that its prevalence is rising due to increased exercise loads and pressures in championship sports (Bicalho & Costa, 2018). Assessments showed that up to 10% of players might often experience medium levels of burnout symptoms (Madigan, Gustafsson, Smith, Raedeke & hill, 2019). The early definition of burnout by Maslach and Jackson [1986] described burnout as a cognitive-affective syndrome that involved emotional and physical exhaustion, a reduced sense of accomplishment, and sports devaluation (Gustafsson, DeFreese, & Madigan, 2017). These three main components can be related but are independent.

Burnout is a multidimensional psychophysiological syndrome in the physiological, behavioral, psychological, and environmental impacts of extreme state stress, and personal factors can produce burnout (Bicalho & Costa, 2018). Burnout causes many physical and psychological adverse effects on athletes' well-being, such as depression, anxiety, mood disturbance, and damaged performance (Madigan et al., 2019). In addition, Smith, Pacewizc, & Raedeke (2019) showed that burnout raises the risk of depression and destroys interpersonal relationships. Burnout can lead to adverse outcomes in sports, such as amotivation, displeasure, discontent, reduced attention and thought, and attitudes that mental and physical training for competitions have no benefits (Souza et al., 2018) and ultimately lead to sports drop-out (Gustafsson et al., 2017). On the other hand, Souza et al. (2018) indicated that burnout correlates more with psychological than performance variables. Many studies have shown that specific aspects of personality factors and self-determination are associated with athletes' burnout (Madigan et al., 2019).

1-3. Sport burnout and mood states

Moods have components of the negative states (such as depression, tension, fatigue, anger, and mental confusion) as well as positive ones (vigor, happiness, and calmness) (Lane & Terry, 2000). In a conceptual model, Lane and Terry (2000) described that a complex combination of these feelings constructs the mood states that can influence the performance of

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athletes. Depression has a central role in this model, and the term depressed mood generally is used to define unhappiness, dysphoria, or dissatisfaction (Lane & Terry, 2000). Also, much evidence has stated that moods influence people's cognitive assessment and behaviors (Espinosa, García, Sanchis, Fargueta, & Herráiz, 2017). Researchers showed that one of the essential precompetitive predictors of sports performance is mood states, as confident mood states optimize athletes' performance and regulate the thoughts and emotions needed before and through competition. For example, precompetitive fatigue and vigor are key elements adjusting sports performance (Koutsimani, Montgomery, Georganta, 2019). In particular, academics have shown that a mood profile with high vigor and lower levels of fatigue, anger, depression, tension, and confusion generates ideal performance (Brandt, Bevilacqua, & Andrade, 2017). Indeed, some previous studies have reinforced those athletes who lose races have negative moods. In this regard, Brandt et al. (2017) argued that vary in intensity or disturbance in mood states is probably produced by different factors such as the stress of the competitive contexts, result expectancies, plurality of events, inadequate time for recovering, overtraining, and various other conditions which might lead athletes to psychologically and physically overexert.

On the other hand, the cognitive-affective model (Smith, 1986) declared that burnout extends in response to chronic stress (see in Madigan, Rumbold, Gerber & Nicholls, 2020) in a threat, loss, harm, and challenging situation. This chronic stress increases depression (Gerber et al., 2018). Also, according to this model, sports burnout includes conditional, cognitive, physiological, and behavioral stages that athletes will appraise the balance among sports context demands and consequences of performance in the cognitive appraisal stage of burnout (Chang et al., 2017). In this regard, Chang et al. (2017) have shown that four forms of negative thoughts and life stress can affect the athletes' burnout. In another study, we saw that negative thoughts have related to depression, distressed mood, psychophysiological distress, and fatigue (Clark & Goosen, 2009). Therefore, we hypothesized that mood states would probably predict sports burnout by using the relationship between mood states, stress and depression, and the relationship between stress-burnout.

1-4. Sport burnout and mental toughness

Mental toughness is the quality of correctly handling the mood, attention, commitment, and concentration in various conditions (Liew, Kuan, Chin, & Hashim, 2019). In other words, mental toughness is a natural or improved psychological power that allows mentally tough performers to cope with control and consistency during the problematic conditions of sports (e.g., lifestyle, exercise, and competition aspects) better than others. More specifically, such athletes are more stable in focusing, determining, and controlling the environment under pressure (Gerber et al., 2018). Previous researchers found that mental toughness is a multidimensional personality variable that can protect elite athletes against negative psychosocial consequences. It helps persons successfully to strive in challenging situations, cope with the stressors, and impact the appraisal and checking of the environmental conditions to success. Since mentally tough persons can regulate their feeling excellently in stressful situations (Papageorgiou et al., 2019). For example, Madigan and Nicholls (2017) displayed that high mental toughness can negatively predict burnout symptoms and protect the athletes versus sports burnout among junior athletes. They also emphasized that a mentally tough mind is beneficial to preventing mental health problems when athletes face high-stress levels. Likewise, Gerber et al. (2018) reported that high mental tough young elite athletes could thwart the negative effect of stress on mental health.

As we mentioned in the previous section, burnout is the product of chronic stress; thus, personal aspects related to stress influence burnout (Madigan et al., 2020). Mental toughness as a personal factor may be a protective factor because it makes athletes less prone to stress. Mental toughness may prevent the athlete's stress in two ways. Firstly, it could affect the primary appraisal of stressful conditions as challenging rather than a minatory situation (Papageorgiou et al., 2019). Secondly, it may also influence secondary appraisal in the selection processes of the effective coping strategy. Concerning its inherent nature, Madigan and Nicholls (2017) have theorized that mental toughness is the main factor in the progress of sports burnout than other similar features (e.g., resilience or grit). In this regard, Gucciardi and Gordon (2009) displayed that mental toughness negatively correlates with a burnout in cricket players. In addition, Gerber et al. (2015) showed that students with lower mental toughness and higher stress levels stated higher symptoms of burnout. In contrast, they have not observed a significant interaction between mental toughness and stress predicting sports burnout. One non-sport context study indicated that insufficient mental toughness and physical training are possible risk factors for academic burnout (Cheung and Li, 2019). Consequently, following these relationships, we aimed to examine the association of mental

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toughness with sports burnout in athletes with disabilities.

1-5. Objectives

According to the mentioned theoretical and empirical background, personality factors are associated with athlete burnout. Therefore, the current study selected those psychological characteristics critical to achievement and success in championship sports, including mood states and mental toughness. On the other hand, many athletes worldwide are athletes with disabilities, but we could not find any studies about sports burnout of para-sport athletes. Therefore, we aimed to investigate if mood states and mental toughness can predict the sports burnout of athletes with disabilities. The present study was an essential work toward supplying significant psychosocial descriptive data about the role of mood states and mental toughness in burnout of athletes with disabilities. Sport psychologists can guide athletes with disabilities to modify and improve personal traits in sport and life (Martin, 2012). Therefore, sports psychologists need to understand the individual quality of their athletes and the relationships between the psychological components to help them. Moreover, the coaches and sports psychologists using the information of the current study can assist athletes in providing the particular standards of performance in overtraining loads and little time recovering conditions. They can regulate the increased negative affect and the enfeebled mood changes and handle the situations and stresses that can impair psychological health and lead to burnout (Cheung and Li, 2019). Therefore, the present study's object was to predict sports burnout of athletes with disabilities based on mood states and mental toughness.

2. Methods

2-1. Participants

We used the available sampling method. Participants have included 150 athletes with disabilities (77 women and 73 men), competing at Paralympic sports national or international teams of the X sports federation for disabled (based on the classification system of the International Paralympic Committee for details regarding eligible impairments; IPC, 2016). Participants had a somatic deficiency with no secondary deficiency (e.g., sensory or intellectual impairment). The participants' ages ranged from 30 to 53 years. They played in both the individual (N = 72, 48%) and team (N = 78, 52%) sports at the Paralympics (volleyball, basketball, tennis, archery, swimming). The participants were athletes with one of the five physical disability types: spinal Bifida, paraplegia, cerebral palsy, amputee, and spinal cord injured. There was also a varied range of severity of disability as recognized by their sport classification groups revealing their level of sports performance. We checked the participants before complicating the questionnaire that they had the study inclusion criteria such as age range (from 30 to 53 years), experience years (over seven years), disability type (physical), and competition level (national team).

2-2. Research Tools

2-2-1. Demographic questionnaire.

Participants completed a demographic questionnaire, including sport type, disability type and classification, age, gender, disability sports experience, and level of competition.

2-2-2. Athletes' burnout**.**

We used the Athlete Burnout Questionnaire (ABQ) that Raedeke & Smith (2001) established its psychometric properties based on Raedeke's definition (1997). They reported acceptable internal consistency reliabilities for the three subscales of burnout with using Cronbach's alpha: physical and emotional exhaustion (α = .91); sport devaluation (α = .90); reduced sense of accomplishment (α = .85). Participants answered the 15 questions on a five-point Likert scale (1 = rarely; 5 = almost always). The scoring of items 1 and 14 was inverse. We obtained the value for each subscale from the arithmetic mean of the five-item scores corresponding to each subscale and calculated a total score of burnouts by averaging all the 15 items (Fagundes et al., 2021). The higher the scores of total items, the higher the amount of burnout. The reliability of the Persian version of the athlete burnout questionnaire with Cronbach's alpha method was 0.70 to 0.81. Confirmation factor analysis (CFI = 0.96, RMSEA = 0.06, TLI = 0.97), Convergent (0.37 to 0.58) and construct (0.25 to 0.39) validities were confirmed the validity of the Persian version of athlete burnout questionnaire (Hajloo, Sobhi, Babaei, Sadeghi, 2016).

2-2-3. Mood states.

The moods were assessed using the 32-item Brunel Mood Scale (BRUMS). Lane, Soos, Leibinger, Karsai, and Hamar (2008) confirmed its psychometric properties. This version of BRUMS is a shortened form of the Profile of Mood States (POMS) that measures anger, depression, confusion, tension, fatigue, vigor (from the POMS), and happiness and calmness (from the UWIST) to present a more balanced assessment of moods and emotions. Lane et al. (2008) reported internal consistency reliabilities for the all subscales with using

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Cronbach's alpha: anger (α = .82); depression (α = .75), confusion (α = .77), tension (α = .74), fatigue (α = .82), vigor (α = .81), happiness (α = .83) and calmness (α = .81). Questions have been ranked on a five-point Likert scale ranging from "not at all" (0) to "extremely" (4). This instrument has not a total score for mood state. The reliability (internal consistency) of the Persian version of the Brunel Mood Scale with Cronbach's alpha method was 0.78, and time reliability was 0.88. Confirmation factor analysis (CFI = 0.95, RMSEA = 0.07, TLI = 0.94) were confirmed its' validity (Farokhi, Moteshareie, Zeidabady, 2013).

2-2-4. The Sport Mental Toughness Questionnaire-14.

Sheard, Golby, and Wersch (2009) provided the Sports Mental Toughness Questionnaire (SMTQ-14) and confirmed its validity and reliability. The questionnaire has 14 items and three components. Cronbach's alpha showed acceptable internal consistency reliabilities for all of the subscales: constancy = .74, confidence = .80, control = .71. Items are rated on a four-point Likert scale ranging from "not at all true" (1) to "very true" (40. The scoring of items 2, 4, 7, 8, 9, and 10 are inverse. Each subscale is calculated by summation of its items (confidence, 1, 5, 6, 11, 13, 14; constancy, 3, 8, 10, 12; control, 2, 4, 7, 9) and the total mental toughness value is computed by the summation of all 14 items of the scale (Sheard et al., 2009). The reliability (internal consistency) of the Persian version of the Sports Mental Toughness Questionnaire with Cronbach's alpha method was 0.87, and time reliability was 0.85. Confirmation factor analysis (CFI = 0.97, RMSEA = 0.07, TLI = 0.96) and divergent validity (P = 0.002) were confirmed its' validity (Kashani, Shiri, Manaseri, 2015).

2-3. Procedure

The research group contacted the manager or coach of a targeted athlete or team in the initial. They described the general purpose of the study and asked permission to invite / her athletes as participants. During the screening session, the researchers informed the participants that the nature of the study was voluntary and made sure their information would be completely anonymous and confidential to prevent the effects of social desirability. Participants were advised to answer honestly, and there were no correct or incorrect answers. After these explanations, participants concerned about cooperating in this study gave written consent that the university approved by the ethics committee (Declaration of Helsinki). They signed it and completed the questionnaire package. An assistant researcher wrote their answers for athletes who required help because their disability (e.g., Spasticity) made writing difficult.

2-4. Data Analysis

The G-power application confirmed that the sample size was sufficient for statistical power in multiple linear regression. We analyzed the data using the SPSS (version 24.0; IBM Corp, Armonk, NY) and calculated the descriptive statistics such as means, standard deviations, frequencies, and additional descriptive statistics. We performed Pearson correlation and multiple linear regression (Stepwise method) analysis in the present study. Multiple linear regression analysis was used to determine whether the athletic mood states and mental toughness might predict the total burnout of athletes with disabilities. All assumptions associated with multiple linear regression analyses (normality, linearity, homoscedasticity, multicollinearity, independence of residuals) were investigated. We used Cronbach's alpha to evaluate the internal consistency reliabilities of the total burnout (0.70), total mental toughness (0.73), and all of the subscales of three variables were above 0.70. The acceptance criterion in this study was Cronbach's alpha ≥ 0.70. The significance level was set at $p \leq 0.05$.

3. Results

3-1. Demographics, descriptive statistics, and correlations

Participant demographic data, descriptive analysis, and correlations of psychological variables (burnout, mood states, and mental toughness) in this study have been presented in Table 1 & 2 respectively. The participants were athletes with one of the five physical disability types: spinal Bifida (N = 42), paraplegia (N = 28), cerebral palsy (N = 31), amputee (N = 22), and spinal cord injured (N = 27). No gender differences regarding burnout (t_{148} = .52, P = .60), total mental toughness (t_{148} = .71, P = .47), happiness (t_{148} = 1.72, P = .08), calmness (t_{148} = .44, P = .66), vigor (t_{148} = .14, P = .88), fatigue (t_{148} = 1.28, P = .20), confusion (t_{148} = .20, P = .83), tension (t_{148} = 1.32, P = .18), depression (t_{148} = .30, P = .76), anger (t_{148} = .08, P = .93) were identified ($p \geq 0.05$). There has not age difference between male and female (t_{148} = 1.35, P = 1.77).

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Table 1. Demographics data for athletes with disabilities (N = 150)

Demographic indexes	Mean age ± SD	Mean Exp. ± SD	N	(%)
Gender				
Women	43.14 ± 6.96	8.13 ± 3.15	77	(51.3)
Men	41.49 ± 7.87	8.64 ± 3.24	73	(48.7)
Total	42.34 ± 7.44	8.38 ± 3.19	150	(100)
Age				
30-39 years			54	(36.0)
40-49 years			53	(35.3)
50-53 years			43	(28.7)
Years of experience				
1-5 years			48	(32.0)
6-10 years			52	(34.6)
11-15 years			50	(33.3)
Level of competition				
National			87	(58.0)
International			63	(42.0)
Type of sport				
Individual			72	(48.0)
Team			78	(52.0)

The Pearson correlation results indicated a moderate and positive relationship between burnout and fatigue, confusion, and depression; moreover, burnout has a moderate and negative association with happiness, calmness, vigor, confidence, constancy, control, and total mental toughness (Table 2&3).

Table 2. Descriptive statistics and correlation coefficients of the dimension of burnout with mood states

	Happiness	calmness	vigor	fatigue	confusion	Tension	Depression	Anger
Exhaustion	-.43**	-.35**	-.34**	.47**	.21**	.17*	.23**	.19*
Reduced sense	-.45**	-.44**	-.42**	.24**	.06	.001	.03	.29
Devaluation	-.19*	-.27**	-.22**	.19*	.04	.05	.08	.07
Total burnout	-.51**	-.50**	-.47**	.45**	.16*	.12	.18*	.14
M	10.85	10.19	11.54	2.55	2.53	2.80	1.72	1.81
SD	3.22	3.47	2.81	2.60	2.35	2.27	1.86	1.78

Note. M = mean; SD = standard deviation; * p≤0.05; ** p≤0.01

Table 3. Descriptive statistics and correlation coefficients of the dimension of burnout with mental toughness.

	Confidence	Constancy	Control	Mental toughness	Total burnout
Exhaustion	-.38**	-.24**	-.24**	-.43**	.80**
Reduced sense	-.42**	-.26**	-.07	-.39**	.59**
Devaluation	-.38**	-.05**	-.24**	-.36**	.69**
Total burnout	-.55**	-.26**	-.27**	-.57**	1
M	19.09	12.73	9.97	41.78	1.70
SD	3.43	1.95	2.54	5.49	0.32

Note. M = mean; SD = standard deviation; * p≤0.05; ** p≤0.01

Investigating all assumptions associated with multiple linear regression analyses (normality, linearity, homoscedasticity, multicollinearity, independence of residuals) showed no considerable problems in the collected data. The Kolmogorov-Smirnov test was used to scan the normality of dependent variables (P>0.05), homoscedasticity, and linearity of variables; assumptions were admissible consistent with a scatter plot of the residuals. Moreover, tolerance statistics were examined to explore whether the data were marked by

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multicollinearity and whether the acquired amount was within appropriate limits (Table 4 & 5). The Durbin-Watson test for independence of residuals was in a suitable range (1.50 - 2.50).

3-2. Predictions for the effects of mood states on burnout

Concerning the first purpose, stepwise multiple linear regression (forward) was used to confirm if subscales of mood state (predictor variables) would predict total burnout (criterion variable) in the athletes with disabilities. The results indicated that some subscales of mood state can significantly predict the total burnout of the athletes with disabilities in three models (model 1: R = .51; R^2 = .26; $F_{(1,148)}$ = 52.59; p≤ 0.05, model 2: R = .56; R^2 = .32; $F_{(2,147)}$ = 35.00; p≤ 0.05; and model 3: R= .59; R^2 = .35; $F_{(3,146)}$ = 27.23; p≤ 0.05; Durbin-Watson = 1.5). In terms of the explanatory power of mood state prediction models, the adjusted determination coefficients (R^2_{Adj}) were 25% (model 1), 31% (model 2), and 34% (model 3). we can annotate that some subscales of mood states can explain 25% to 34% of the variations in total burnout. These models have a good explanatory power to explain the variance of total burnout. Hence, Table 3 shows the coefficients of prediction equations (partial regression coefficient) for total burnout in three models generated with subscales of the mood states value. Analysis of these models shows that happiness (51%, model 1), vigor (28%, model 2), and fatigue (22%, model 3) can predict the variance of total burnout of the athletes with disabilities (p≤ 0.05, see Table 4).

Table 4. Stepwise multiple linear regression of mood states on total burnout of athletes with disabilities

Criterion variable	predictors	*B*	SEE	*β*	*t*	*Sig.**	*95% CI*	*PC*	*T*
Burnout	Model 1		.28						
	Happiness	-.05		-.51	-7.25	.001	-.06 – -.03	-.51	1.0
	Model 2		.27						
	Happiness	-.03		-.36	-4.66	.001	-.05 – -.02	-.31	.74
	Vigor	-.03		-.28	-3.62	.001	-.05 – -.01	-.24	.74
	Model 3		.26						
	Happiness	-02		-.27	-3.26	.001	-.04 – -.01	-.21	.62
	Vigor	-02		-.25	-3.24	.001	-.04 – -.01	-.21	.72
	Fatigue	.02		.22	2.87	.005	-.01 – -.04	.19	.73

Note. B = unstandardized coefficient; SEE = standardized error of the estimate; β = standardized coefficient; CI = 95% confidence interval for B; PC = partial correlation; T = tolerance collinearity statistic; * *p≤0.05*

3-3. Predictions for the effects of mental toughness on burnout

Regarding the second purpose, a stepwise multiple linear regression (forward) was used to confirm if subscales of mental toughness (predictor variables) would predict total burnout (criterion variable) in the athletes with disabilities. The results indicated two significant models (model 1: R = .57; R^2 = .32; $F_{(1,148)}$ = 71.55; p ≤ 0.05, and model 2: R = .60; R^2 = .36; $F_{(2,147)}$ = 41.34; p ≤ 0.05; Durbin-Watson = 1.9) and the adjusted determination coefficients (R^2_{Adj}) were 32% (model 1), and 35% (model 2). we can interpret that those subscales of mental toughness can explain 32% to 35% of the variance of total burnout. This model has a good explanatory power to explain the variations in total burnout. Table 5 shows the regression coefficients for total burnout in two models generated with subscales of mental toughness value. Analysis of this model shows that total mental toughness (57%, model 1) and confidence (29%, model 2) can predict the variance of total burnout of the athletes with disabilities (p≤ 0.05).

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Table 5. Stepwise multiple linear regression of mental toughness on total burnout of athletes with disabilities.

Criterion variable	predictors	*B*	SEE	β	*t*	*Sig.**	*95% CI*	*PC*	*T*
Burnout	Model 1		.27						
	Mental toughness	-.03		-.57	-8.45	.001	-.04 – -.02	-.57	1.0
	Model 2		.26						
	Mental toughness	-.02		-.34	-3.34	.001	-.03 – -.01	-.26	.40
	Confidence	-.02		-.29	-2.79	.006	-.04 – -.01	-.22	.40

Note. B = unstandardized coefficient; SEE = standardized error of the estimate; β = standardized coefficient; CI = 95% confidence interval for B; PC = partial correlation; T = tolerance collinearity statistic; * $p \leq 0.05$

4. Discussion

The primary purpose of the present study was to investigate the role of mood states and mental toughness as the predictive variables of the total burnout of athletes with disabilities. The Pearson correlation test results indicated that six subscales of mood states, such as fatigue, confusion, depression (positively), happiness, calmness, and vigor (negatively), correlated with total burnout of athletes with disabilities. Total mental toughness and its subscales indicated a moderate and negative correlation with real burnout in athletes with disabilities. Moreover, multiple linear regression analysis showed three predictive models of mood states. We observed that happiness was present in all three models, and it predicted the total burnout negatively with moderate power. Furthermore, the results showed that vigor (negatively) and fatigue (positively) predicted the total burnout of athletes with disabilities in models 2 and 3. Likewise, total mental toughness had a moderate and negative role in predicting total burnout in two models, and confidence (model 2) had low and negative power in predicting the total burnout in athletes with disabilities.

In summary, consistent with our hypothesis, three mood states and mental toughness had a proportion of total burnout variance of athletes with disabilities. Present evidence confirmed that when negative moods (fatigue, confusion, and depression) of athletes with disabilities increase, maybe total burnout rises slightly. When positive moods (happiness, vigor, and calm) increase, total burnout decreases moderately. In addition, High levels of mental toughness and subscales can reduce the total burnout of athletes with disabilities.

In line with the relationship of mood states or mental toughness with the burnout of athletes with disabilities, past research did not exist exactly, but some studies were conducted on this subject. Hence, a possible explanation for our results may be related to the fact that contribution to the adapted sport of persons with physical disabilities causes fewer secondary health problems. For example, reduced depression and anxiety (Shapiro and Martin, 2014), higher levels of positive moods, perceptions of athletic identity and physical competence, peer interactions, and quality of social life across various contexts, extended and improved social support, and overall enjoyment of life (Shapiro & Martin, 2010a). Such development of health and positive self-appraisals gained through sports experiences can moderate any difficulties of disability and improve approaches, expectations, and beliefs about the values and welfares derived from sports participation (Shapiro and Malone, 2016). Also, it established that sport and exercises, in many forms, produce mood benefits in domains including a decrease in psychological distress, anxiety, fatigue, negative affect, depression, and an increase in the positive attitudes of well-being in disabled athletes (Shapiro, and Malone, 2016). In this line, Demirel (2019) showed that athletes with disabilities having medals had diminished scores of social appearance anxiety than the disabled athletes without a medal. These findings suggest that sports competence can further develop the mental health of successful athletes. Some previous studies indicated that athletes with disabilities, compared to athletes without disabilities, are more confident in their performance. They show less competitive anxiety, minor concern, higher global self-esteem, and strong achievement motivation (Baĉanac et al., 2014). Therefore, they are psychologically stronger and have developed valuable life skills that will support them to effectively cope with different challenges and stresses in sports and other life conditions. Past researches reveal that the sport-confidence of disabled athletes improves along with their competitive experience, which is essential for reinforcement of their confidence in their psychological resilience, physical skills, and training. In addition, Baĉanac et al. (2014) confirmed that the

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best results of all athletes, whether they are with disabilities or not, require similar psychological elements: a strong sense of confidence in the performance of physical skills, an excellent level of global self-esteem, and confidence in their psychological resilience.

We can divide the psychological variables that affect mental health into two categories: useful and harmful. Useful variables improve mental health and quality of life and increase well-being, including happiness, calmness, vigor, mental toughness, satisfaction, mindfulness, intrinsic motivation, optimism, self-confidence, and perceptions of adequate social support. On the other hand, harmful psychological variables reduce mental health, quality of life, and the enjoyment of life for individuals. For instance, these variables include depression, anxiety, mental exhaustion, confusion, and withdrawal from friends. According to this classification, sports burnout consists of three dimensions (emotional and physical exhaustion, a reduced sense of accomplishment, and sport devaluation) and is a variable that reduces the quality of exercise, performance, and continuing competition. Therefore, psychological burnout is a harmful variable that sports psychologists tend to prevent, and if it occurs in an athlete, they want to reduce or eliminate it. Hence, as a general result of this classification, it can be said that the variables that are useful for mental health should naturally have a negative relationship with sports burnout, namely, increasing those causes to reduce the burnout.

Conversely, harmful variables should be directly related to sports burnout; increasing those causes increases burnout. Previous research on sports burnout has found these relationships, and the results of our study are in line with this classification and study. Therefore, happiness, calmness, vigor, mental toughness, and confidence are negatively correlated with sports burnout and could negatively predict it. However, fatigue, confusion, and depression positively correlated with sports burnout, and fatigue could predict it positively. Therefore, improving methods to help athletes' positive thoughts and decrease negative thoughts will diminish sports burnout (Chang et al., 2017).

However, there was a lack of research on burnout in athletes with disabilities. Therefore, we have justified the present study results by citing reports showing that the profile of athletes with and without disabilities is almost the same (Vancini et al., 2019). In a meta-analysis, Koutsimani et al. (2019) showed that depression and anxiety correlate with burnout. Athletes who are more depressed or anxious (trait anxiety) may also be more likely to increase burnout. In this line, several researchers found that a person who has burnout often feels weakness and a loss of motivation and experiences a decreased sense of achievement. A depressed mood secludes him/herself from friends and colleagues and, in some cases, leaves sports ultimately (Vancini et al., 2019). Also, Francisco and colleagues studied Spanish athletes and showed that perceived stress predicted 43% of the total burnout variance. Furthermore, perceived stress and burnout accounted for 50% of the depression variance (Souza et al., 2018). As a whole, these findings align with that classification, and our results are in this line. Additionally, consistent with that category, there is a negative correlation between burnout dimensions and intrinsic motivation. Some researchers indicated that leading athletes to sports could help define burnout, thus leading to an internalization of motivation that can decrease burnout syndrome. Also, as previously stated, there is a negative correlation between burnout dimensions and coping with stressful situation strategies (Koutsimani et al. 2019), dispositional mindfulness, perceptions of adequate social support (Barrett et al., 2016), and optimism and perceived stress interaction of athletes' resilience and coaches' social support on the stress-burnout relationship (Lu et al., 2016). In this regard, Scotto et al. (2020) reported that athletes with a higher sports sense of the community profile, who was happy and emotionally joined in the sports community, had a lower total burnout score. As can be seen, our results, like these findings, are in line with that classification. Also, Andrade et al. (2019) confirmed that athlete burnout is a complicated syndrome that can appear for different reasons, depending on the athlete's personality profile and life experiences in the sport.

4-1. Conclusion

Our findings confirmed that some mood states (happiness, vigor, and fatigue) and mental toughness could predict the total burnout of athletes with disabilities. We believe that these results are essential for sports psychologists and coaches. They should know that developing and increasing the useful variables and inhibiting or decreasing the harmful variables for mental health can prevent somewhat sports burnout in athletes with disabilities. Moreover, sports psychologists should not neglect the importance of mood states and mental toughness to keep athletes with disabilities in the sport. Sport

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psychologists can play a crucial role in helping athletes with disabilities attain high personal quality in sport and life.

We should note that the current research's significant limitations were the difficult availability and the small number of athletes with disabilities in clubs. In addition, despite substantial advances in athlete burnout research, none of the burnout models includes the interaction between personality profiles and environmental conditions, an essential deficiency in sports burnout research. Therefore, we recommend that future researchers employ athletes with and without disabilities to define these interactions for developing more positive outcomes of mental health and well-being for sports participants.

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دوره ۲ - شماره ۲ - بهار ۱۴۰۱ (۲۰۰-۱۸۸)

فصلنامه رویکرد انسانی در مطالعات ورزشی

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فرسودگی روان‌شناختی در ورزشکاران نخبه با ناتوانی جسمی: نقش پیش‌بینی کننده حالات خلقی و سرسختی روانی

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این نماد به معنای مجوز استفاده از اثر با دو شرط است یکی استناد به نویسنده و دیگری استفاده برای مقاصد غیرتجاری.

چکیده: متغیرهای روان‌شناختی مؤثر بر سلامت روان به دو دستهٔ مفید و مضر تقسیم می‌شوند. متغیرهای مفید به بهبود سلامت روان و کیفیت زندگی کمک می‌کنند و موجب افزایش بهزیستی، شادی، آرامش، نشاط و سرسختی ذهنی نیز می‌شوند. متغیرهای مضر باعث کاهش سلامت روان، کیفیت و لذت از زندگی، و افزایش حالات خلقی منفی، اضطراب و فرسودگی روانی می‌شوند. این مطالعه با هدف پیش‌بینی فرسودگی روانی ورزشی بر اساس حالات خلقی و سرسختی ذهنی ورزشکاران نخبه دارای ناتوانی جسمی انجام شد. شرکت‌کنندگان شامل ۱۵۰ ورزشکار دارای ناتوانی جسمی (۷۷ زن؛ ۷۳ مرد) بودند که از تیم‌های ملی پارالمپیک (میانگین سنی ۷.۴۴ ± ۴۲.۳۴ سال، میانگین تجربه ۳.۱۹ ± ۸.۳۸ سال) به روش تصادفی انتخاب شدند. شرکت‌کنندگان پرسش‌نامه فرسودگی روانی ورزشکاران، مقیاس خلقی برونل (۳۲ سوالی) و پرسش‌نامه سرسختی ذهنی ورزشی را تکمیل کردند. تجزیه و تحلیل رگرسیون خطی چندگانه به روش گام به گام نشان داد که متغیرهای شادی (توان متوسط منفی، ۵۱٪)، سرزندگی (توان ضعیف منفی، ۲۸٪)، خستگی (توان ضعیف مثبت، ۲۲٪)، سرسختی ذهنی (توان متوسط منفی، ۵۷٪) و اطمینان (توان ضعیف منفی، ۲۹٪) توانستند فرسودگی کلی ورزشکاران دارای ناتوانی جسمی را پیش بینی کنند. این یافته‌ها برای روان‌شناسان ورزشی ضروری است، زیرا توسعه و افزایش متغیرهای مفید و مهار یا کاهش متغیرهای مضر برای سلامت روان می‌تواند تا حدودی از فرسودگی ورزشی جلوگیری نماید.

واژه‌های کلیدی: فرسودگی روانی ورزشی؛ سرسختی ذهنی ورزشی؛ حالات خلقی؛ سلامت روان؛ ورزشکاران ناتوان جسمی؛

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