

Article

Relationship between Psychological Distress, Basic Psychological Needs, Anxiety, Mental Pressure, and Athletic Burnout of Chinese College Football Athletes during the COVID-19 Pandemic

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Abstract: The rapid spread of the COVID-19 pandemic in early 2020 poses a significant threat to mental health, which may lead to psychological stress in a number of individuals. Athlete burnout is a common psychological phenomenon that has a negative influence on their sports career. The main purpose of this study was to evaluate the relationship between psychological distress and athletic burnout among Chinese college football athletes during the COVID-19 pandemic, and the mediating role of basic psychological needs, anxiety and mental pressure. In an online cross-sectional survey conducted in February 2022, the team coaches sent an electronic questionnaire to college football athletes. Participants completed questionnaires on relevant variables. Pearson correlation analysis and mediation effect analysis were carried out by using SPSS software and its plug-in process V3.3. The study included 672 participants and the results showed that: (1) psychological distress, basic psychological needs, anxiety, mental pressure and athletic burnout were significantly pairwise correlated, (2) mental pressure, anxiety and basic psychological needs play a mediating role between psychological distress and athletic burnout respectively, and (3) basic psychological needs and anxiety, basic psychological needs and mental pressure, anxiety and mental pressure, as well as mental pressure, anxiety and basic psychological needs respectively play a chain mediating role between psychological distress and athletic burnout. In conclusion, psychological distress during the COVID-19 pandemic is an important factor leading to athletic burnout among Chinese college football athletes and may further affect the level of athletic burnout through basic psychological needs, anxiety and mental pressure. The government and schools should strengthen the recognition of these factors in order to improve the situation of athletic burnout among Chinese college football athletes.

Keywords: psychological distress; athletic burnout; basic psychological needs; anxiety; mental pressure



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1. Introduction

Athletic burnout refers to athletes' psychological experience of avoiding their favorite sports activities due to long-term pressure and dissatisfaction, which is one of the important indicators of diagnosing their psychological fatigue and has a negative impact on their sports career [1]. The outbreak of the COVID-19 pandemic may cause distress or dissatisfaction among athletes [2] which will inevitably lead to certain athletic burnout and affect training and competition results. Most studies have shown that the COVID-19 outbreak has led to burnout in healthcare providers [3,4]; however, there is a lack of evidence that the COVID-19 pandemic affects athletic burnout among Chinese college football athletes. The talent identification of football athletes is a matter of widespread concern in society [5]. In recent years, there have been some studies on the career transition of athletes in different

periods and fields [6,7]. According to Wylleman and Lavalée's lifespan perspective on athletes' development, the transition to elite sports puts them under pressure to reconcile the demands of training and competition with those of the education system [8]. Mateu et al. (2020) first studied the transition of student-athletes from college to a specific degree and found that it generally coincided with the transition from junior to senior competition [9]. It is not uncommon for athletes to choose to study physical activity and exercise science courses in college, however, combining course study and training may increase their fatigue levels and may even lead to burnout [7]. What is more worrying is that the COVID-19 outbreak has led to athletes being exposed to stress from new environments and being more likely to develop cumulative mental health problems including psychological distress, especially in the context of closed campus management widely used by the Chinese government and universities. Under the influence of the COVID-19 epidemic, athletes may appear in adverse emotional states such as athletic burnout; therefore, seeking ways to reduce athletic burnout is an important guarantee to improve their sports performance and supply talent to the country.

The outbreak and spread of COVID-19 in China at the end of 2019 caused a series of stressors [10] which affected the spatial self-regulation of athletes' social distance and personality. Individual burnout can have a significant impact on health and well-being. The psychological distress of the COVID-19 pandemic uncertainty can cause lasting damage to multiple body systems that protect and restore homeostasis and overload physiological systems to cope with additional distress, creating feelings of burnout [11]. A growing number of studies show that occupational health during a pandemic is more important than before. Evidence from studies on the impact of past epidemics (e.g., SARS, etc.) suggests that long-term psychological distress is significantly associated with mental health and job burnout [12,13]. This evidence could help to design interventions for athlete burnout during the pandemic. Weilenmann et al. found that individuals experienced increased levels of psychological distress during the COVID-19 pandemic, as well as high rates of burnout, which was significantly associated with adverse psychological problems [14]. People who reported burnout reported lower professional performance, lower job satisfaction, and greater personal distress [13]. Therefore, the study hypothesized the following:

Hypothesis 1 (H1). *Psychological distress was significantly correlated with athletic burnout.*

The basic psychological needs come from the theory of self-determination, which refers to the innate, intrinsic and necessary psychological needs of individuals, namely, need for competence, need for autonomy and need for relatedness [15]. The Chinese government has taken many measures, including forced isolation and a city-wide blockade, to prevent and control the spread of COVID-19 [16]. However, the emergence of COVID-19 and its consequences (the extremely high infection rate and relatively high mortality) have led to adverse psychological conditions such as worry and fear among individuals around the world [17,18]. Physical isolation may conflict with people's basic psychological needs and drive people away from each other, which may hinder individuals from seeking and developing relationships, as well as from regulating their behavior [19]. In recent years, the application of self-determination theory to explain athletic burnout has been welcomed by researchers [20]. Basic Psychological Needs Theory (BPNT) is a sub-theory of self-determination theory (SDT), in which scholars generally research athletic burnout [21,22]. Gonzalez et al.'s study found that the three demand satisfaction dimensions of basic psychological needs negatively predicted athletic burnout [23]. Similarly, a longitudinal study confirmed a significant negative correlation between basic psychological needs and exercise burnout [24]. Therefore, the study hypothesized the following:

Hypothesis 2 (H2). *Basic psychological needs will act as a mediator between psychological distress and athletic burnout.*

Research has confirmed that, globally, the COVID-19 pandemic has led to continued uncertainty and postponements and cancellations of matches [25], in addition to some stressors. Athletes may experience significantly higher levels of psychological distress during this period, which has been found to result in increased maladaptive levels of anxiety [26]. Subhas et al.'s study also found that COVID distress can significantly predict individual anxiety [27]. The positive relationship between anxiety and athletic burnout has also been confirmed in a large number of studies. The researchers found that anxiety can influence burnout in athletes and suggested that athletes be regularly offered relaxation and mindfulness interventions, which are beneficial to reduce their physical anxiety levels and improve their concentration, thereby reducing athletic burnout [28]. Sanchez-Romero et al. confirmed that anxiety plays a mediating role in the relationship between behavioral regulation and burnout, indicating that anxiety can affect burnout directly or indirectly through a mediating role [29]. Besides, some studies have shown that social isolation can produce several negative psychological effects, such as high levels of anxiety, stress, fear and even depressive symptoms, which may persist for a period of time [30,31]. Given the proposed relationships, the study hypothesized the following:

Hypothesis 3 (H3). *Anxiety will act as a mediator between psychological distress and athletic burnout.*

Mental pressure is a comprehensive performance of the body's response to stressors and is the physical and mental tension caused by the imbalance between the body's actual or recognized needs in the process of adapting to the environment and its coping ability [32]. It can be divided into benign pressure and bad pressure. In the context of COVID-19 prevention and control, individuals are not only physically exhausted, but also have to bear great pressure psychologically [33]. According to previous literature reports, working and living in a high-pressure environment for a long time can easily lead to negative emotions. Based on the interaction theory of stress, when individuals face stressful events, stable individual factors and external environmental factors jointly affect the cognitive assessment process of stress, and then produce subjective stress feelings and physical and mental stress responses, which will lead to the occurrence of bad emotions in the long run [34]. Burnout is the long-term accumulation of bad stress, which exceeds the individual's coping level, and eventually leads to individual emotional exhaustion, negative evaluation, and a reduced sense of achievement [35,36]. Therefore, the study hypothesized the following:

Hypothesis 4 (H4). *Mental pressure will act as a mediator between psychological distress and athletic burnout.*

Many studies have shown that psychological distress, basic psychological needs, anxiety, mental pressure, and athletic burnout are significantly correlated with mental health [2,37–40]. Mental health can positively affect the sports performance of athletes [41]. Chinese college football athletes with high levels of psychological stress during the COVID-19 pandemic can be combined with the satisfaction of basic psychological needs and the reduction of anxiety and psychological pressure to reduce sports burnout, and ultimately enhance their mental health and sports performance. Given this, the study hypothesized the following:

Hypothesis 5 (H5). *Mental pressure, anxiety and basic psychological needs will jointly act as a chain mediator role in the relationship between psychological distress and athletic burnout.*

The association between psychological distress during the COVID-19 pandemic and athletic burnout and the psychological mechanisms underlying this association have been relatively understudied in previous research, especially in the context of China. To fill this research gap, this study conducted an in-depth investigation into the relationship between psychological distress and athletic burnout among the group of Chinese college football

athletes in the context of the current COVID-19 pandemic. The results of this study may provide evidence-based intervention for this group, which has practical value including reducing the burnout of college football athletes, improving their athletic performance, and providing evidence for national selection. The purpose of this study was to explore the relationship between psychological distress and athletic burnout among Chinese college football athletes during the outbreak of the COVID-19 pandemic. It is of practical significance to explore the mediating effects of basic psychological needs, anxiety and mental pressure, so as to enrich the research field of athletic burnout and supplement the research on athletic burnout of Chinese college football athletes and provide evidence and reference for the development of psychological intervention programs for college football athletes in China.

2. Materials and Methods

2.1. Participants and Procedures

The study was conducted in China during the COVID-19 pandemic in February 2022. The study adopted a cross-sectional design and invited Chinese college football athletes to participate in the survey. 35 teams were randomly selected from a total of 72 teams in the Chinese University Football League (including 16 from the University super League, 24 from the University First Division League and 32 from the University Second Division). Each team coach first informed participants of the purpose and procedure of the study, as well as their right to withdraw from the study at any time, and then sent an electronic questionnaire to all athletes via a link to the QR code. Before the survey was completed, each participant obtained informed consent online. A total of 694 college football players participated in the study. Participants who completed the questionnaire within 200 s and those who did not were excluded from the sample. According to the exclusion criteria, 672 participants were included with an effective recovery rate of 96.8%. This study was approved by the Ethics Committee of Shandong University (No. 2021-1-114).

2.2. Measures

2.2.1. Demographic Variables

Demographic characteristics were collected through several sociodemographic questions, including age, sex, urban–rural provenance and duration of sports careers.

2.2.2. The Event Impact Scale Revision (IES-R)

This study assessed the psychological distress during the COVID-19 pandemic on athletes using the Chinese version of the Event Impact Scale Revision (CIES-R), which is a self-administered questionnaire [42]. The original event impact Scale was developed by Horowitz in 1979 to assess post-traumatic reactions, including 15 items, invasion (intrusion) and avoidance. It was later revised by Weiss and Harman in 1997 as a revised version of the 22-item event impact Scale. It is rated from 0 to 4, with 0 being no impact and 4 being severe impact. The main statistical indicators were the total scores, which ranged from 0 to 88 points [43].

2.2.3. Basic Needs Satisfaction in General Scale (BNSG-S)

The fulfillment of psychological needs was measured by using the Chinese version of the Basic Needs Satisfaction in General Scale (BNSG-S) [44]. The scale consists of 21 items, which are divided into three subscales: competency needs, autonomous needs and belonging needs. Each subscale consists of 6–8 items, among which 5 items are reverse scoring. The questionnaire adopts the Likert 7-level scoring system. The higher the score is, the higher the satisfaction degree of basic psychological needs is.

2.2.4. Generalized Anxiety Disorder Scale (GAD-7)

The Chinese version of the Generalized Anxiety Disorder Scale was used to screen for anxiety and assess the severity of anxiety symptoms [45]. Anxiety screening, a total of

7 items, each item 0~3 points, the total score range of 0~21 points [46], the higher the score indicates the more serious anxiety, 0~4 is no anxiety; 5 to 9 are classified as mild anxiety; 10 to 14 are classified as moderate anxiety; a score of 15 or above is considered severe anxiety.

2.2.5. Perceived Stress Scale (PSS-10)

The Perceived Stress Scale, originally compiled by Cohen et al. [32], has a total of 10 items and is used to evaluate the degree of stress felt by individuals. The scale [47] adopts a Likert 5-level scoring system, with 0–4 points representing “never” to “always” respectively, and the total score ranges from 0 to 40 points. The higher the score, the greater the pressure felt. It was introduced into China in 2003 by Yang et al., and the study showed that the Chinese version of PSS-10 showed good internal consistency reliability and structural validity in Chinese population samples.

2.2.6. Athlete Burnout Questionnaire (ABQ)

Athletic burnout was measured by the Chinese version of the Athletes’ Psychological Fatigue Questionnaire (ABQ) [48], which was originally developed by Raedeke et al. in 2001 [1], with a total of 15 items, including 3 dimensions of emotional and physical exhaustion, reduced sense of achievement and negative evaluation of sports. Each dimension had 5 items and was scored by a Likert 5-point scale. The total scores of each dimension were 25 points, and the higher the score was, the higher the fatigue degree was.

2.3. Statistical Analysis

SPSS 22.0 was used for data analysis. Pearson correlation analysis was adopted between both factors of psychological distress, basic psychological needs, anxiety, mental pressure and athletic burnout. The SPSS macro PROCESS with 95% confidence interval based on 5000 bootstrap samples and was used to test the model. According to Hayes’ statistical principle, model 6 was used to test the chain mediation effect. Bootstrap repeated sampling for 5000 times was used to obtain the parameter estimation and 95% confidence interval, which did not contain 0, indicating significant statistical significance. Moreover, we used structural equation model (SEM) made by AMOS 22.0 software to verify the proposed model.

3. Results

3.1. Common Method Bias Testing

In this study, Harman single factor method was used to test whether there was a common method bias. The results showed that there were 11 factors with characteristic roots greater than 1, among which the variance explained by the first factor was 24.72%, less than the critical value of 40%, so the common method bias of this study was not significant.

3.2. Demographic Variables

Among the 672 participants, most of them (45.5%) are aged between 19 and 20 years. Of the athletes, 62.1% were female and 37.9% were male. A total of 54.6% grew up in urban and 45.4% were in rural ones. In addition, athletes with a duration of sports careers of 6–10 years accounted for the highest proportion (59.2%).

3.3. Correlation Analysis

Descriptive statistics and a correlation matrix for psychological distress, basic psychological needs, anxiety, mental pressure, and athletic burnout are presented in Table 1. As can be seen, the correlation results showed that psychological distress was positively correlated with anxiety ($r = -0.507, p < 0.001$), mental pressure ($r = 0.434, p < 0.001$) and athletic burnout ($r = 0.296, p < 0.001$), and was negatively correlated with basic psychological needs ($r = -0.264, p < 0.001$). Athletic burnout was positively correlated with anxiety ($r = 0.355, p < 0.001$) and mental pressure ($r = 0.327, p < 0.001$), and negatively correlated with anxiety ($r = -0.530, p < 0.001$). In addition, anxiety was negatively related to basic

psychological needs ($r = -0.355, p < 0.001$) and positively corrected with mental pressure ($r = 0.440, p < 0.001$).

Table 1. Descriptive statistics and correlation matrix.

Variables	1	2	3	4	5
1 Psychological Distress	1.000	-	-	-	-
2 Basic Psychological Needs	-0.264 **	1.000	-	-	-
3 Anxiety	0.507 **	-0.355 **	1.000	-	-
4 Mental Pressure	0.434 **	-0.062	0.440 **	1.000	-
5 Athletic Burnout	0.296 **	-0.370 **	0.355 **	0.327 **	1.000
M	1.77	4.69	1.41	23.59	2.37
SD	0.62	0.79	0.51	7.75	0.67

Note: M = mean; SD = standard deviation; ** $p < 0.01$.

3.4. Regression Analysis

Table 2 demonstrates the regression coefficients of the chain mediating role of the anxiety, mental pressure and mental pressure between psychological distress and athletic burnout. After controlling the variables such as age, sex, urban–rural provenance, and duration of sports careers, the analysis revealed that basic psychological needs was negatively related to psychological distress ($r = -0.263, p < 0.001$). Anxiety was negatively related to basic psychological needs ($r = -0.235, p < 0.001$) and positively related to psychological distress ($r = 0.443, p < 0.001$). Moreover, psychological distress ($r = 0.302, p < 0.001$), basic psychological needs ($r = 0.135, p < 0.001$) and anxiety ($r = 0.331, p < 0.001$) were positively related to mental pressure. Psychological distress ($r = 0.049, p < 0.001$), anxiety ($r = 0.126, p < 0.001$) and mental pressure ($r = 0.236, p < 0.001$) were positively related to athletic burnout, while basic psychological needs ($r = -0.306, p < 0.001$) was negatively correlated with athletic burnout. The mediation pathway model is illustrated in Figure 1. The structural equation model was used to verify the model, and the fitting index was: $\chi^2/df = 1.9$. CFI = 0.99; GFI = 0.99; NFI = 0.99; RMSEA = 0.04, indicating that the model has good fitting effect. Path coefficients showed that after including the mediators of basic psychological needs, anxiety and mental pressure, the direct effect of psychological distress on mental health was not significant. Therefore, the association between psychological distress and mental health was fully achieved through these three mediators.

Table 2. Descriptive statistics and correlations of scale composite scores.

Criterion	Predictors	Goodness-of-Fit Indices			Regression Coefficients	
		R	R ²	F	β	t
Basic psychological needs	Psychological distress	0.300	0.090	13.175 ***		
					-0.263	-7.117 ***
Anxiety	Psychological distress Basic psychological needs	0.563	0.317	51.370 ***	0.443	13.314 ***
					-0.235	-7.007 ***
Mental Pressure	Psychological distress Basic psychological needs Anxiety	0.530	0.281	37.138 ***	0.302	7.843 ***
					0.135	3.765 ***
					0.331	8.318 ***
Athletic Burnout	Psychological distress Basic psychological needs Anxiety Mental Pressure	0.503	0.253	28.098 ***	0.049	1.183
					-0.306	-8.312 ***
					0.126	2.946 ***
					0.236	5.950 ***
Athletic Burnout	Psychological distress	0.301	0.903	13.227	0.295	7.966 ***

Note: *** $p < 0.001$. Demographic variables as covariance.

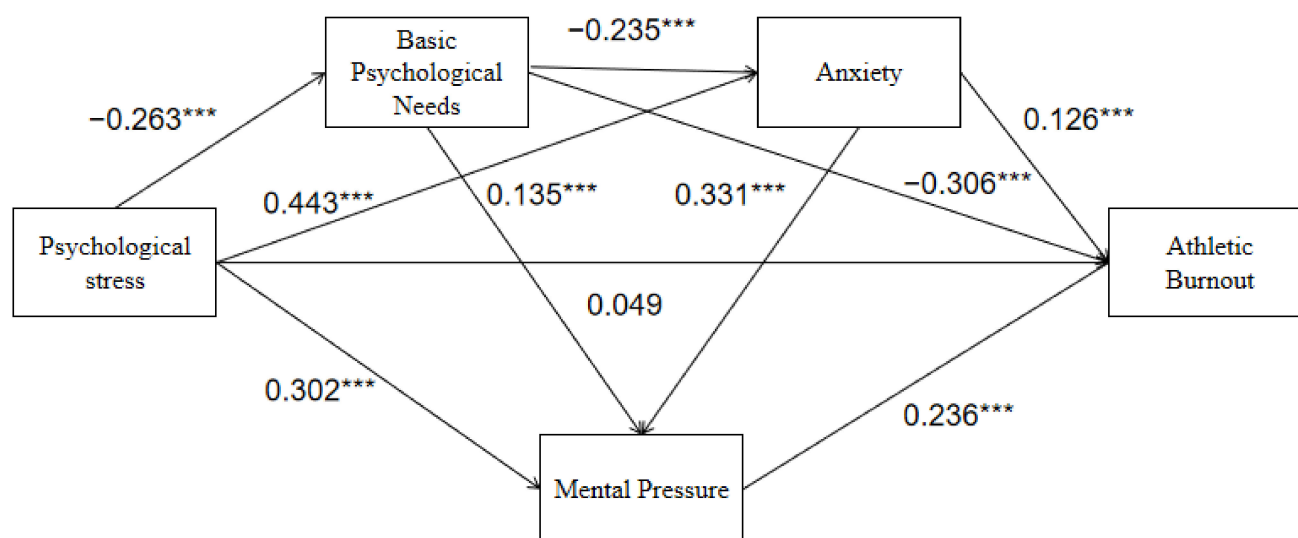


Figure 1. Mediation of basic psychological needs, anxiety and mental pressure between psychological distress and athletic burnout. Notes: *** $p < 0.001$.

3.5. Mediation Analysis

To examine whether the mediation effects of basic psychological needs, anxiety, and mental pressure are significant, we conducted a bootstrap estimation procedure with 5000 bootstrap samples. According to the bootstrap test, when the path coefficient of a 95% CI did not include 0, the mediating effect was significant. The path coefficient of the 95% CI for the paths did not include 0. As shown in Table 3, the significance of the direct effect of psychological distress on athletic burnout ($r = 0.053$) did not remain when the mediators (basic psychological needs, anxiety and mental pressure) were included in the model. Psychological distress was found to indirectly affect athletic burnout through three significant mediation pathways: (1) basic psychological needs ($B = -0.088$, 95% CI = 0.056, 0.126), (2) anxiety ($B = 0.061$, 95% CI = 0.019, 0.103), (3) mental pressure ($B = 0.077$, 95% CI = 0.043, 0.115), (4) basic psychological needs and anxiety ($B = 0.009$, 95% CI = 0.003, 0.016), (5) basic psychological needs and mental pressure ($B = -0.009$, 95% CI = -0.017 , -0.003), (6) anxiety and mental pressure ($B = 0.038$, 95% CI = 0.021, 0.057), (7) basic psychological needs, anxiety and mental pressure ($B = 0.005$, 95% CI = 0.003, 0.009).

Table 3. The indirect effects of psychological distress on athletic burnout with basic psychological needs, anxiety and mental pressure as mediators ($n = 672$).

Effect Types	Path	95% CI	Effect
Direct effect	Psychological Distress→Athletic Burnout	(−0.035, 0.140)	0.053
Indirect effect	Psychological Distress→Basic Psychological Needs→Athletic Burnout	(0.056, 0.126)	0.088
	Psychological Distress→Anxiety→Athletic Burnout	(0.019, 0.103)	0.061
	Psychological Distress→Mental Pressure→Athletic Burnout	(0.043, 0.115)	0.077
	Psychological Distress→Basic Psychological Needs→Anxiety→Athletic Burnout	(0.003, 0.016)	0.009
	Psychological Distress→Basic Psychological Needs→Mental Pressure→Athletic Burnout	(−0.017, −0.003)	−0.009
	Psychological Distress→Anxiety→Mental Pressure→Athletic Burnout	(0.021, 0.057)	0.038
	Psychological Distress→Basic psychological needs→Anxiety→Mental Pressure→Athletic Burnout	(0.003, 0.009)	0.005
Total indirect effect	-	(0.207, 0.329)	0.268
Total effect	-	(0.242, 0.400)	0.321

Note: Demographic variables as covariance.

4. Discussion

A rigorous review of existing literature showed that limited studies have investigated the relationship and specific pathways between psychological distress and athletic burnout

among Chinese college football athletes during the COVID-19 pandemic. This study used a chain mediation model to explore the effects of basic psychological needs, anxiety and mental pressure on the athletic burnout of Chinese high-level college football players. The results supported these hypotheses and verify the mediating role of basic psychological needs, anxiety and mental pressure in the relationship between psychological distress and athletic burnout.

Interestingly, a key finding of the study was that psychological distress had a significant positive effect on athletic burnout after controlling for gender, age, urban and rural origin, and duration of sports careers. These results reinforce the relationship between psychological distress and athletic burnout [49]. We further extend this conclusion to Chinese college football athletes. Lack of social interaction, increased economic uncertainty and access to social media are among the factors that could work against college football athletes as some universities in China have adopted closed-door management measures to slow the spread of COVID-19 [50,51]. Experts suggest that school closures can have profound social, economic and psychological effects (including psychological distress) on students [52]. Athletic burnout, which can affect the mental health and sports performance of high-level college soccer players, has received widespread attention as China focuses on identifying talent in young football athletes. College football athletes, whose psychological quality is relatively weak compared with adults, are more likely to suffer from sports burnout when facing the negative impact of COVID-19. Bai et al. implied that direct exposure to high levels of psychological distress during the COVID-19 pandemic appears to increase the risk of burnout [53]. The findings of the study by Karakose et al. suggest that there is a significant relationship between COVID-19-related psychological distress and COVID-19-related burnout, with increased levels of psychological distress leading to increased burnout in individuals [11,54]. Thus, psychological distress could play a negative role in reducing athletic burnout.

Furthermore, many studies have revealed that basic psychological needs, anxiety, mental pressure and athletic burnout were both correlated. A moderate to strong negative relationship was found between basic psychological needs and anxiety [55]. It is also possible for individuals to experience pressure and burnout due to inadequate responses to basic psychological needs [56,57]. Studies have confirmed that repeated stress can trigger a range of mental illnesses, including anxiety [58,59]. The COVID-19 pandemic will have a severe and profound psychological impact on college football athletes, exacerbated by factors such as restrictions on practice, isolation times and cancellations of games. Psychological consequences of COVID-19 for athletes include anxiety, which is significantly associated with athletic burnout [60]. Furthermore, According to Smith's cognitive-emotional stress model of athletic burnout, high situational demands (e.g., executive pressure) exceed the resources available to the athlete, leading to the onset of the burnout process [61].

Another important finding is the chain mediating effect of mental pressure, anxiety and basic psychological needs in the relationship between psychological distress and athletic burnout of Chinese college football athletes. The results showed psychological distress indirectly affects athletic burnout through seven pathways: basic psychological needs, anxiety, mental pressure and the chain mediating effect of basic psychological needs, mental pressure and anxiety, basic psychological needs and mental pressure, mental pressure, anxiety and basic psychological needs. The current study demonstrated that basic psychological needs played a partial mediating role in the relationship between psychological distress and exercise burnout (Path 1), accounting for 32.8% of the total indirect effects, which was larger than the mediating role of anxiety (22.8%) and psychological stress (28.7%), suggesting that basic psychological needs were an important predictor of exercise burnout. According to self-determination theory [15,21], the satisfaction of basic psychological needs helps to promote an individual's internalization of external motivation and improve the level of self-determination motivation. However, the obstruction of basic psychological needs will promote the transformation of motivation to a non-self-deterministic direction, and even lead to no motivation, which is directly related to the degree of satisfaction and

burnout individuals experienced in the activity. In general, an environment that can meet the three basic psychological needs will promote the internalization of external motivation, keep individuals in a positive psychological state, promote individuals to adhere to a certain activity for a long time and produce more positive behavioral results. The study also revealed the mediating effect of anxiety underlying psychological distress and athletic burnout relationships (Path 2), accounting for 22.8% of the total indirect effect. We speculate that the psychological distress caused by COVID-19 may make athletes feel restless about the relevant restrictions, resulting in psychological anxiety, fatigue and even athletic burnout [26,40,62]. In addition, the study also revealed the mediating effect of mental pressure underlying psychological distress and athletic burnout relationships (Path 3), accounting for 28.7% of the total indirect effect. In the context of COVID-19 prevention and control, athletes are not only physically tired, but also have to bear great pressure on their psychological defense. As a result, they are more likely to have a negative training stress response, from initial fatigue to burnout. Our results also support the cognitive-affective stress model, which suggests that athletic burnout can be interpreted as an adverse reaction to stressors [61]. Moreover, Job-Demands-Resources Model suggests that any occupation contains the variable of work demands (i.e., stressors), such as those caused by the COVID-19 pandemic, that drain an individual's physical and mental resources, leading to health problems including burnout [63].

Finally, there existed other paths (psychological distress→basic psychological needs→athletic burnout; psychological distress→anxiety→athletic burnout; psychological distress→mental pressure→athletic burnout; psychological distress→basic psychological needs→anxiety→mental pressure→athletic burnout) (Path 4–7), accounting for 15.7% of the total indirect effect, which showed psychological distress influenced the athletic burnout through basic psychological needs, anxiety and mental stress. Basic psychological needs, anxiety and mental pressure jointly influence athletic burnout. Under the adverse impact of the COVID-19 pandemic, improvement of the sense of athletic burnout contributes to reducing negative emotions and improving the mental health and sports performance among Chinese college football athletes. After controlling for age, sex, urban–rural provenance, and duration of sports careers, our study also found that the psychological distress of Chinese college football athletes did not directly affect athletic burnout but indirectly affected it through the mediating effect of basic psychological needs, anxiety and mental pressure. This is consistent with previous studies [11,20,26,33]. Measures should be taken to meet athletes' basic psychological needs, which could effectively stimulate their training and competition motivation, promote the internalization of external motivation, and overcome the lack of motivation caused by the COVID-19 distress to alleviate athletes' anxiety. When athletes feel less anxious, they may be less stressed and thus maintain a better mental state and reduce athletic burnout in the uncertain environment of the COVID-19 pandemic.

The study deeply explores the mechanism of psychological distress on athletic burnout from the perspective of college football athletes and enriches the content of positive psychology. It turns out that basic psychological needs, anxiety and mental pressure have an important role between psychological distress and athletic burnout, which provides a useful reference for the construction of a structural model of athletic burnout in the future. The current study has several limitations. First, the results of this study are based on the survey conducted through online self-report, and there may be subjective answers deviating from objective facts. Second, the cross-sectional design adopted in this study could not clarify the causal relationship between variables. Longitudinal studies should be designed to complement and validate the validity and reliability of our findings. Finally, the mediating variables in this study are basic psychological needs, anxiety and mental pressure, while other variables may mediate psychological distress and athletic burnout.

5. Conclusions

Psychological distress is a possible psychological state for college football players in this challenging period of COVID-19. This paper provides a certain understanding of the

relationship between psychological distress and athletic burnout among Chinese college football athletes. This study reveals the relationship between psychological distress and athletic burnout, as well as the mediating role of basic psychological needs, anxiety and mental pressure. Specifically, the results showed that psychological stress was positively correlated with anxiety, mental pressure and athletic burnout, and negatively correlated with basic psychological needs. In addition, psychological distress may indirectly affect athletic burnout through basic psychological needs, anxiety and mental pressure. The joint path plays an important role in the total indirect effect based on the mediating effect. In summary, psychological distress during the COVID-19 pandemic negatively affected Chinese football athletes' athletic burnout through increasing their levels of anxiety and athletic burnout, as well as decreasing the satisfaction of basic psychological needs. Given this, governments or educators can take targeted interventions to reduce the level of athletic burnout among Chinese college football athletes during the COVID-19 pandemic.

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Informed Consent Statement: Participants were informed that participation in the study was voluntary and that completing the questionnaire via online platform indicated their informed consent to participate this study.

Data Availability Statement: The data presented are available on request from the corresponding author.

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Conflicts of Interest: The authors declare no conflict of interest.

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