Revista de Psicología del Deporte/Journal of Sport Psychology Vol. 31. n.°2. 2022. pp. 132-141. ISSN 1132–239X ISSNe 1988–5636

Research on the Evaluation Model of Athletes Youth Mental Health Education in the context of Positive Psychology

Tian Zhang[1,2] , Zhanbiao Shi[1,2*]

Abstract
Athletes meet their satisfaction level instead of being parallel in the psychological process. This study portrait that Mental Health is impacted by the self-determination and motivation level of athletes. It was found that Mental Issues is mediated by the coach and athletes' relationship. Athletes might face problems such as mental stress, heavy burden, and psychological demands of training, which could create a significant impact on the Mental Health of athletes. Internal and External Stimulus is the type of self-motivation, and it is concerned with participating an athlete in an activity for the sake of amusement, interest, and satisfaction. This paper has two IV; Self-Determination and Motivation, and one DV (Mental Health). Whereas, the Coach-Athlete Relationship mediates the association between IV and DV. The data was collected from male and female athletes in between 18-35 age groups. The participants were selected randomly from various sport's training center. The selected data was collected and analyzed AMOS 26v. The research model is based upon self-determination theory. The results supported the hypothesis of study, and showed a significant fitness in model.
Keywords: Sports Activities, Evaluation Model, Sports Psychology, Positive Psychology, Mental Health, Mental Health Education, Performance Evaluation

Introduction

Recently, Mental Health Education and Positive Psychology have been trending research topics in the sports industry. Several studies have found a significant impact on the mental health in athletes' groups, which is a cause for concern. International competition in the sports industry has increased the mental pressure, and impacted the positive sports psychology in elite athletes. Therefore, the mental stress, heavy burden, and psychological demands of training create a significant impact on the Mental Health of athletes (Contreira et al., 2019). The frequency of diagnosable psychological problems in athletes varies from 4% to 68%, and the reported spread is a point of contention. In addition, the early competitive years of professional athletes coincide with the age of onset for identifying mental health problems (Rocchi & Pelletier, 2017).

This study portrait the Self-Determination Theory (SDT) by analyzing the Hierarchical Model of Intrinsic and Extrinsic Motivation (HMIEM). SDT is the most influential theory in analyzing motivation in competitive sports, which deals with the cause of the behavior and its precedent and consequences. According to Self-Determination Theory, different stimulus behaviors range from the most self-motivated to the least self-determined or from internal to external stimuli (Nishimura & Suzuki, 2016). Self-motivation occurs when players do something they want to do, not because they have to or under pressure (Balaguer et al., 2017). Internal Stimulus is the type of self-motivation, and it is concerned with participating an athlete in an activity for the sake of amusement, interest, and satisfaction. Based on prior suggestions, it is agreed that positive psychological interventions help players achieve their basic needs of attachment (relatedness), autonomy and competence (Vansteenkiste et al., 2020). While the positive activity model reflects the experience of positive emotions, thoughts and behaviors (alternative mechanisms) and the satisfaction of basic needs (as a method) (Kinoshita et al., 2021), the technique of self-determination claims that positive emotions, thoughts and behaviors lead towards better experiences.

Therefore, athletes meet their satisfaction level instead of being parallel in the psychological process (Ryan & Deci, 2000). Developing bright ideas (such as positive thinking about athletic competence) leads to the desire for competence. As a result, this develops more mastering thoughts in the mind and body language of an Athlete. However, participating in various Positive Psychological Interventions allow the athlete to boost pleasant feelings, thoughts, and behaviors and meet their requirements for autonomy, competence, and relatedness (Schüler et al., 2014). Extrinsic motivation refers to acts that are linked to a different consequence and are divided into four categories. These categories include External Regulation, Integrated Regulation, Identified Regulation, and Introverted Regulation. External Regulation refers to behaviors that are triggered by external factors (for example, a swimmer who engages in training to gain recognition from parents or coaches). Integrated Regulation is a form of self-made external stimulus (Kinoshita et al., 2021). This includes attitudes toward oneself and value system (for example, a basketball player who participates because participation in sports is by their values) (Nishimura & Suzuki, 2016). Whereas, Identified Regulation represents actions out of choice,

[1] Institute of psychology, Chinese Academy of Sciences, Beijing,100101,China.
[2] Department of psychology, University of Chinese Academy of Sciences, Beijing, 100049, China.
shizb@psych.ac.cn

even if they are not attractive in themselves (for example, a football player who acts as a force because, although he dislikes it, it needs to do that) (Benita et al., 2020).

However, Introverted Regulation occurs when an athlete becomes internal but does not acknowledge external pressure (such as a gymnast competing to avoid feelings of guilt or embarrassment) (Balcombe & De Leo, 2020). Furthermore, volunteer behavior of the athletes is covered by the autonomous motivation. Therefore, it includes internal movement, integrated code, and identifiable code. Controlled stimulation involves intrapersonal or interpersonal coercion and involves internal and external barriers (Liu et al., 2021). However, motivation has been described as a lack of will to act and is found at least at the self-inflicted end of the stimulus. HMIEM's model provides a platform that includes stimuli at the level of context (domain of life), global (personality) and situation (state). The HMIEM model claims that the extent to which socio-environmental factors meet basic psychological needs determines the extent to which the stimulus is self-determined, leading to cognitive, behavioral and affective outcomes (Gabana et al., 2020).

The above-mentioned motivational sequence at the context level is important in the present study. In sport's industry, the context motivation surrounds an individual's motivational behavior in the life of an athlete. The HMIEM model is supported by a large body of cross-sectional and longitudinal evidence (Van Zyl & Rothmann, 2019). The stimulating climate is an element of socio-environmental factors that play an important role in shaping teammates and sports structures during the formation of sports groups. As a result, the most important part of creating a mentally strong athlete is a corporative coach. Because a coach architects the climatic change in the sports (Ntomali et al., 2017).

The coach's emphasis is on the self-comparison skills of the athlete, which promotes a work-in-progress environment. On the contrary, their emphasis on results and standard comparisons promotes an ego-motivated environment. The most frequent concept of the stimulus environment in sports research is an achievement. An adaptive (more positive) work environment is associated with higher competence, inner motivation, and positive impact. In contrast, negative (or worst) outcomes are associated with the ego climate (Van Zyl & Rothmann, 2019). It includes negative effects, external stimuli, and demotivation. In terms of post-traumatic stress disorder, anxiety, sleep disturbance, insomnia, and depression, the meta-analytic diagnoses show that professional athletes have the same rate of mental disorders as the overall population (Ryan & Deci, 2017).

This is not surprising given the significant overlap between the active elite and the early onset of most mental illnesses. A growing body of statistics combines risk factors at general and specific level for various athletes with mental illness in elite athletes. In the sports industry, injuries, performance failure, reluctance, and overtraining syndrome are some of the sport's risk indicators for athletes (Balcombe & De Leo, 2020). For example, games that pose a greater risk than team sports (i.e., boxing). Danger signs might drag an athlete's major life events because of sleeplessness and lack of social support. These factors can affect the performance, severity and onset of certain mental health symptoms, but they can also help the athletes choose the best course of action (Bartholomew et al., 2017).

In the sports career of an athlete, the importance of risk variables varies with the progress. For example, supportive relationship of athletes with their parents and coaches provides them mental strength and motivation during the development at initial stages (Liu & Wu, 2021). Furthermore, training requirement, environment, and coaching connections strength the mental health and fitness of athletes, and strip away the mental burden (Ntomali et al., 2017). This results in high performance and elite phase for athletes. Traveling and environmental factors (such as environment of training centers) play a significant role in the mental health of athletes (Antonini Philippe et al., 2017). However, during traveling, athletes might face disruptive logistical challenges. For example, sleeplessness, sleep disturbance, or lack of sports adaption facilities (Rocchi & Pelletier, 2017). Factors such as lack of athletic identity, unexpected or unintentional retirement are associated with various psychological problems during the transition out of the sport. Due to de-classification (no longer matching the athlete's ranking criteria), voluntary retirement is a unique challenge for athletes (Gabana et al., 2020).

Positive psychology experts advocate for a shift in modern psychology from focusing solely on repairing impairments and deficits and building positive qualities such as strengths, optimism, and resilience, which all serve as protective factors against mental health issues (Kao & Tsai, 2016). According to Csikszentmihalyi (2000), "is not merely the study of pathology, weakness, and injury; it is also the study of strength and virtue." Treatment entails "nurturing what is best, not just mending what is broken." Some positive psychology methods are based on cognitive-behavioral therapy, with programmed behavioral skills over cognitive skills, high session dosages, and individual interventions showing greater effectiveness than group or self-help formats (Kim & Cruz, 2016). These findings align with preventative studies in college students looking at strength-based mental health programs, particularly cognitive-behavioral therapies.

Positive psychology and cognitive behavior therapy, for example, combine well with athletic training since both promote strengths, motivation, and continual self-improvement. While positive psychology may not be sufficient as a stand-alone treatment when psychiatric symptoms are severe, it may undoubtedly be used to supplement comprehensive, evidence-based interventions that increase strengths and wellbeing across the mental health spectrum (Lu, 2021).

Literature Review

Positive psychology experts advocate for a shift in modern psychology from focusing solely on repairing impairments and deficits and building positive qualities such as strengths, optimism, and resilience, which all serve as protective factors against mental health issues. According to Csikszentmihalyi (2000), "is not merely the study of pathology, weakness, and injury; it is also the study of strength and virtue." Treatment entails "nurturing what is best, not just mending what is broken." Some positive psychology methods are based on cognitive-behavioral therapy, with programmed behavioral skills over cognitive skills, high session dosages, and individual interventions showing greater effectiveness than group or self-help formats. These findings align with preventative studies in college students looking at strength-based mental health programs, particularly cognitive-behavioral therapies (Talha et al., 2022). Positive psychology and cognitive behavior therapy, for example, combine well with athletic training since both promote strengths, motivation, and continual self-improvement.

While positive psychology may not be sufficient as a stand-alone treatment when psychiatric symptoms are severe, it may undoubtedly be used to supplement comprehensive, evidence-based interventions that increase strengths and wellbeing across the mental health spectrum (Chen, 2017). However, in an ego-stimulating environment, coaches often use of pressure and control to influence behavior, which is inconsistent with self-determination and basic psychological needs of athletes. Such an environment has nothing to do with either adaptive outcomes or detrimental outcomes (Talha et al., 2022). In previous research, the purpose of reviewing the sports psychology among athletes was to: find and categorize the factors affecting the mental health of athletes from 1998 to 2018, and critically review articles and highlight research gaps and future challenges (Schüler et al., 2014). Specific and most common risk factors that affect the mental health of athletes are potentially adjustable. These factors might include coaching styles, training requirements, environment of coaching centers, coaching methods, and competition criteria (Doob, 2018).

Such plans require intervention at sports or environmental, organizational levels, and individual athlete. In this context, the spectrum of risk indicators will be better addressed through a precise framework for the mental health of athletes developed within the broader 'ecological' context of the elite sports context (Pitts, 2017). Ecosystems can help explain the relationship between an individual's characteristics or experiences (called combating "ontogenetic" elements or the use of matter) and the larger social and cultural contexts in which they live (Toffoletti & Thorpe, 2018). This includes the family / loved one's 'microsystem' in the case of coaches (es), teammates (when appropriate), and elite athletes. The macrosystem consists of national and international sports organizations, the media and the larger society, while the ecosystem consists of athletes' sports, rules and regulating bodies. Gratitude and other positive emotions can help people become more resilient. Resilience is defined as "a person's ability to adapt to adversity with competence after being agitated by demonstrating relatively constant levels of psychological and physical functioning." Because of their ability to experience pleasant emotions even during difficult circumstances, people with stronger resilience worry less and recover faster from adversity (Pharr et al., 2020). Such people are still affected by negative emotions, yet they can remain flexible in the face of adversity. Thus, interventions aimed at cultivating a grateful mindset have the potential to boost athletes' resiliency by assisting them in reflecting on the benefits they have received, eliciting more positive emotions, identifying lessons learned, and viewing challenges as opportunities for growth through cognitive reframing. Athletes' athletic performance improves when they can assess obstacles with a resilient mentality. More resilient athletes are better able to manage their thoughts and emotions, allowing them to adjust to the ever-changing circumstances of sport (Ozturk & Kilic, 2018).

Because gratitude interventions promote social relationships and foster socially inclusive behaviors, they may also help improve interpersonal dynamics within the sports environment (e.g., team cohesiveness, coach-athlete relationship). Gratitude treatments can help athletes "come together" with the rigours of sport in a team context, which has been identified as a more efficient approach to cope with collective stressors (Garit et al., 2021). Gratitude may increase team resilience through communal coping, a practical technique to dealing with collective stressors (e.g., competition, adversity) that can help with stress management, problem-solving, and emotion regulation through building relationships during difficult times (Patel et al., 2020).

Personal-disclosure mutual-sharing (PDMS) therapies, in which people freely share personal tales with teammates, have also been shown to improve athletes' interpersonal relationships and performance. Relational characteristics such as team cohesion and the coach-athlete relationship may be targeted by gratitude interventions involving voluntary personal disclosure and group discussion (Rodrigues et al., 2020). The concept of mental fitness and positive psychological needs counters the broader environmental issues that create the risk of becoming pathological. So that, athletes should focus on their performance and their career. In contributing or maintaining the mental health of athletes, other conditions may be more powerful. These conditions might resolve the misuse of social media, financial constraints, and bad relationships with coaches or parents. When it comes to the holistic framework of

sustaining or contributing to the mental health of athletes, researchers should acknowledge the early interventions (Kader et al., 2021). These interventions can improve the mental health of athletes in less financial expenditure, generate quick responses to overcome the mental health problems, identify their symptoms, and help athletes maintain their overall performance.

The steps to prevent this framework are to reduce the chances of developing or reducing mental health symptoms' potential outcomes and effects. The aim of providing early interventions and treatments is to identify and prevent emerging mental health problems. Therefore, this can provide continuous care to the mental illness. This could help an athlete recover and prevent a recurrence, especially through ongoing medical care with a mental health professional (Ryan et al., 2018). The current study covers the mental health education and evaluation model for elite athletes. Previous studies provide guidelines, intervention criteria, and treatments to support the well-being of athletes. Furthermore, previous studies suggest plans for system optimization and early intervention services for the mental health of athletes. Therefore, the meta-analyzes have largely agreed that athletes have a broad-based equal risk of mental disorders (such as anxiety and depression) as common as the general population (Garit et al., 2021). More precisely, rates of depression and anxiety and post-traumatic stress and sleep disorders can be compared. Athletes are exceptional because mental health is a stigma and has little recognition of mental illness, and they are likely to experience both positive sports psychology and good mental health. As general and specific risk factors are associated with the mental disorders in athletes, researchers need a complete method for early interventions (Rodrigues et al., 2020). AIS Mental Health References was used to intervene using athletes' limited psychological processes and hybrid models of care (web-based counselling, face-to-face, or telephonic consultancy). The aim of implementing the Early Intervention Model and AIS is to engage with the referred practitioner and the athlete to meet the functional recovery needs and mental health. In elite athletes, the mental health study has evolved into the psychology branch (Garit et al., 2021). The recent studies have covered the importance and emergence of sports psychology. In result sports psychology was also linked with the clinical psychology (Arraya & Porfírio, 2017). The positional statement and experts stated that the individual, cultural, and environmental factors affect the fitness and mental health of athletes.

The need for more uniformity in the concept, evaluation and reporting of the Mental Health Awareness Program is an important suggestion. According to the report, "there is no evidence-based or consensus-based guideline for diagnosing and treating mental health symptoms and disorders in top athletes." Pre-systematic reviews have shown that caution is needed in the program with fair, high-quality techniques to determine effective evidence and theory-based interventions (Włach-Bišta, 2015). A blind randomized longitudinal study with high sample numbers and results measured with certified measuring instruments that cause changes in mental health literacy behavior when needed. There is little data and discussion on how technology can establish and test research or mental health awareness, prevention and intervention measures (Baryeh et al., 2021). There are applications for a deeper understanding of sports as a subculture within society and future research that focuses on positive mental health outcomes in subgroups of athletes. Investigations into athletic identity, individual and subgroup roles, and cultural characteristics revealed further difficulties with seeking help. Ciutadella discovered that certain features in elite sports culture make athletes more likely to have mental health symptoms and disorders (Toffoletti & Thorpe, 2018). Bad stains, limited mental health literacy, past negative experiences seeking mental health treatment, busy schedules, and hyper-masculinity were all cited as barriers for athletes' mental health care (Casals & Finch, 2017). According to previous research, high-performance male athletes are 52% less likely to experience mild or severe depression than their female counterparts. The hidden link between the stigma of being perceived as weak and the manifestations of mental health symptoms and diseases is key to the idea that immediate anti-stigma interventions can be a good first step towards overcoming obstacles to seeking help (Khalil et al., 2021). Further studies are needed to provide more targeted and individualized treatment for specific subgroups. For example, it was suggested that gender differences be further explored (samples of older, more representative female athletes are required) (Fiorilli et al., 2021).

Research Framework

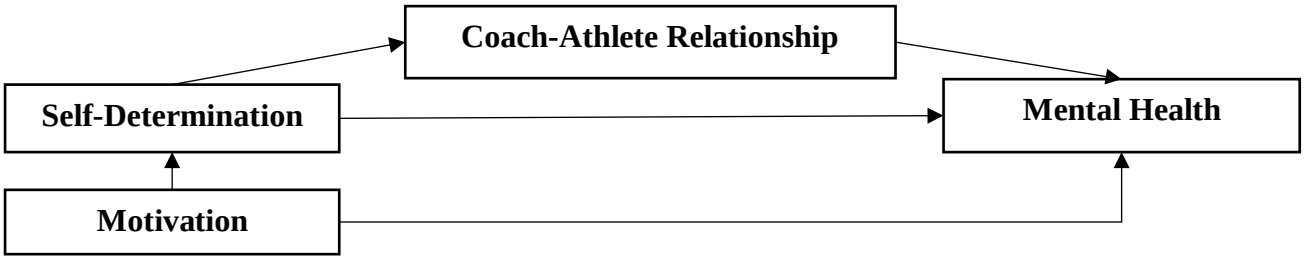

Figure 1: Research Model

Figure below shows the research model of the study. In this model, Self-Determination, and Intrinsic Motivation and Extrinsic Motivation are the independent variables. Furthermore, Mental Health is used as dependent variable. Whereas, the Coach-Athlete Relationship is considered as a mediating variable.

Methodology

To analyze the mental health education among youth athletes, this research paper has developed an evaluation model based upon the Self-Determination Theory. In this paper, Self-Determination (SLD), and Motivation (MT) are Independent Variables, and Mental Health (MNH) is used as Dependent Variable. Whereas, the Coach-Athlete Relationship (CAR) is a mediating variable in research model. For this research, (Contreira et al., 2019) scale has been adopted. This paper has collected the data from male and female athletes in China. To better analyze the Self-Determination and Mental Health of athletes, the questionnaire has used 2 items for Self.Detr (Lonsdale et al., 2008) and 2 items for Motivation. The variable-Self-Determination has been measured by adopting the scale of (Monteiro et al., 2020; Sheehan et al., 2018). Whereas, Mental health has been measured by using the (Ng et al., 2011; Purcell et al., 2019). The questionnaire was distributed by using google forms. The participants of the research were from the Shanghai Yangpu Amateur Athletic School, National Training Center, and Sports School in Hangzhou. There were females and male athletes in our respondents.

Analysis and Discussion

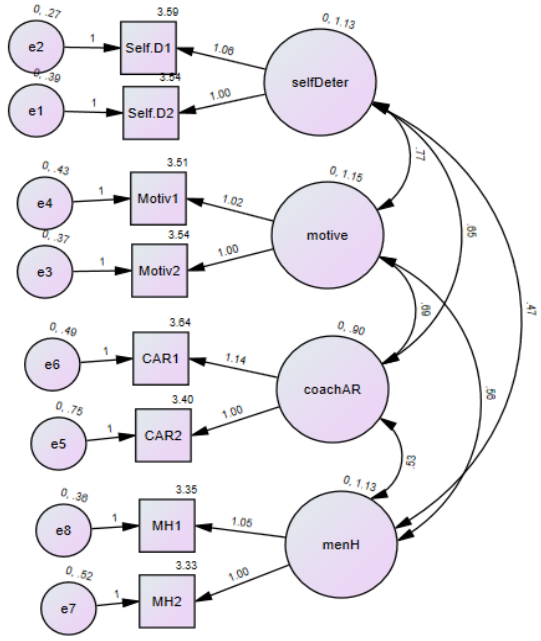

Figure 2:CFA

CFA

Figure 2 shows the (CFA) Confirmatory Factor Analysis of the study, which was run to identify the factors loading of items and variables in the model. The results of the Confirmatory Factor Analysis are shown in table underneath. The values which are extracted from the result of confirmatory factor analysis are fine and showing that the model is fit and acceptable because the required values showing in the result.

Table 1 shows the sample mean of the data collected. Whereas, the chi-square value is 22.006, which indicates that the collected data is reliable for the study. With the probability of 0.003.

Table 1

Sample Means

MH1	MH2	CAR1	CAR2	Motiv1	Motiv2	Self.D1	Self.D2
3.355	3.331	3.642	3.399	3.507	3.537	3.588	3.544

Assessment of Normality

Table 2 shows the normality of the data collected. The value of minimum and maximum statistics is in between 1 to 5, this shows that the collected data from the respondents are acceptable.

As the table shows that the value of Skewness and

Kurtosis in between -3 to +3, and near to 0, this means that the collected data is normal and valid.

Table 2

Normality Assessment

Variable	Min	Max	Skew	Kurtosis
MH1	1.000	5.000	-.518	-.904
MH2	1.000	5.000	-.471	-.970
CAR1	1.000	5.000	-.693	-.774
CAR2	1.000	5.000	-.572	-.878
Motiv1	1.000	5.000	-.746	-.639
Motiv2	1.000	5.000	-.713	-.589
Self.D1	1.000	5.000	-.617	-.822
Self.D2	1.000	5.000	-.687	-.639
Multivariate				22.865

Table 3 shows the sample correlation of the data. The results indicate that all items are positively correlated with each other. Furthermore, the Eigenvalues of the data were 4.211, 1.186, .786, .724, .372, .267, .258, and .196.

Table 3

Sample Correlation

	MH1	MH2	CAR1	CAR2	Motiv 1	Motiv 2	Self.D 1	Self.D 2
MH1	1.000							
MH2	.728	1.000						
CAR1	.381	.396	1.000					
CAR2	.332	.312	.622	1.000				
Motiv 1	.417	.385	.489	.393	1.000			
Motiv 2	.347	.300	.516	.451	.747	1.000		
Self.D1	.338	.295	.487	.472	.503	.545	1.000	
Self.D2	.346	.283	.453	.409	.521	.499	.782	1.000

Table 4 and 5 shows the regression weight and standardized regression weight of the items. The results indicated that the direct impact of items on variables were significant and showed positive co-efficient. Which means that the variables tend to positively increase with the selected items. Whereas in table 5, the standardized regression weight of variables in nearly close to 1, which indicates that variance of the IV, DV, and MV is equal to 1.

Table 4

Regression Weights

			Estimate	S.E.	C.R.	P	Label
Self.D2	<---	selfDeter	1.000				
Self.D1	<---	selfDeter	1.061	.068	15.685	***	par_1
Motiv2	<---	Motive	1.000				
Motiv1	<---	Motive	1.021	.068	15.084	***	par_2
CAR2	<---	coachAR	1.000				
CAR1	<---	coachAR	1.144	.103	11.158	***	par_3
MH2	<---	menH	1.000				
MH1	<---	menH	1.055	.101	10.449	***	par_4

Table 5

Standardized Regression Weights

			Estimate
Self.D2	<---	selfDeter	.861
Self.D1	<---	selfDeter	.908
Motiv2	<---	Motive	.871
Motiv1	<---	Motive	.859
CAR2	<---	coachAR	.739
CAR1	<---	coachAR	.841
MH2	<---	menH	.827
MH1	<---	menH	.881

Table 6 shows the covariance of variables. The results indicate that self-determination is positively correlated with the motivation, CAR (Coach-and-Athletes Relationship) and Mental Health, and has significant results. Table 6 indicates that all variables are fit for the research model, and supports the positive impact of self-determination and motivation on the mental health of sportsmen and women.

Collectively, table 4, 5, and 6 represents the positive correlation between the variables as the results are significant, therefore, the hypothesis of the study is accepted. 2-tailed correlation >.001 means that the significant level of variable is greater than 0.001, therefore, 0.001-0.005 shows significant results for the correlation of variables.

Table 6

Covariances

			Estimate	S.E.	C.R.	P	Label
selfDeter	<-->	motive	.768	.097	7.958	***	par_5
selfDeter	<-->	coachAR	.654	.093	7.042	***	par_6
menH	<-->	selfDeter	.474	.087	5.421	***	par_7
Motive	<-->	coachAR	.692	.095	7.288	***	par_8
menH	<-->	motive	.557	.092	6.063	***	par_9
menH	<-->	coachAR	.530	.090	5.894	***	par_10

Table 7 shows the total effect of the items on the variables. The results indicated that items were directly impacting the variables but not impacting other variables.

Table 7

Total Effect

	coachAR	Motive	selfDeter	menH
MH1	.000	.000	.000	1.055
MH2	.000	.000	.000	1.000
CAR1	1.144	.000	.000	.000
CAR2	1.000	.000	.000	.000
Motiv1	.000	1.021	.000	.000
Motiv2	.000	1.000	.000	.000
Self.D1	.000	.000	1.061	.000
Self.D2	.000	.000	1.000	.000

Table 8 shows the threshold value of the CFA. The values of RMSEA, GFI, CFI, AGFI fall in the proportion of acceptable threshold values, therefore, the model is fit.

Table 8

CFA Threshold Values

Statistics	Fit indices	Acceptable threshold value	Model
Absolute fit	x^2	As close as to zero	.000
	DF	As close as to zero	.0692
	CMIN/DF	As low as 2 and as high as 5	3.453
	GFI	>.90	.954
	RMR	<.07	.023
	RMSEA	<.08	0.44
Incremental fit	NFI	>.90	1.32
	TLI	>.90	1.80
	CFI	>.90	1.32
Parsimony fit	AGFI	>.90	1.61

Table 9 shows the score weights of all factors in the model. 2 items were selected for each variable. The results from table 9 indicate that selected items were valid and reliable, as they had factor loading impacts on the variables.

Table 9

Factor Score Weights

	MH 1	MH 2	CAR 1	CAR 2	Motiv 1	Motiv 2	Self.D 1	Self.D 2
coachAR	.039	.026	.369	.210	.048	.055	.059	.038
motive	.024	.016	.048	.027	.342	.390	.058	.038
selfDeter	.009	.006	.035	.020	.036	.041	.467	.304
menH	.468	.308	.032	.018	.020	.023	.012	.008

Discussion

The analysis showed that mental health of the elite athletes is impacted by the self-determination and motivation level. The result also supported that Coach-and-Athlete relationship also mediates the relationship between Self-Determination, Motivation and Mental Health (Yang et al., 2019). The relational literature states the coaches often use of pressure and control to influence behavior, which is inconsistent with self-determination and basic psychological needs of athletes. Therefore, coach can manipulate the sports' psychology as well (Küttel & Larsen, 2020).

The purpose of reviewing the sports psychology among athletes was to: find and categorize the factors affecting the mental health of athletes, and critically review articles and highlight research gaps and future challenges. The study lacked the impact of emotions, intrinsic and extrinsic motivation, family pressures, and financial burdens, this might be covered in near future to expand the research scope (Balcombe & De Leo, 2020). The results indicated that the Mental health of sportsmen and women has become an essential topic for sports psychologist and its importance has been highlighted in the literature review of the study.

Conclusion

The mental health of sportsmen and women plays a significant role in generating positive sports psychology, and this can be done by self-determination and motivation level of elite athletes. This article discussed the impact of self-determination and motivation on mental health of the athletes. The questionnaire circulated around the aspects of intrinsic and extrinsic motivation, factors that impact positive sports psychology, amotivation, family and financial constraints. The study indicated that Mental health of sportsmen and women has become an essential topic for sports psychologist and clinical psychologist, and its importance has been highlighted in the academic literature. Therefore, mental health of elite athletes can improve a sense of well-being, performance, self-identification and the involvement of sports person in game by overcoming the lack of awareness and education about mental health. It was found that mental health is a significant part of sport's activities. More precisely, the researchers should analyze the rates of depression and anxiety and post-traumatic stress and sleep disorders can be compared. Athletes are exceptional because mental health is a stigma and has little recognition of mental illness, and they are likely to experience both positive sports psychology and good mental health.

Recommendations

For developing a deeper understanding in the study, the future research could study the perspective of sport's psychology. The future research that focuses on positive mental health outcomes in subgroups of athletes. In future, the research could count the athletic identity, individual and subgroup roles, and cultural characteristics revealed further difficulties with seeking help. Our study lacked factors such as dad stains, limited mental health literacy, past negative experiences seeking mental health treatment, busy schedules, and hyper-masculinity were all cited as barriers for athletes' mental health care. Therefore, these factors could be the part of the study. Furthermore, the study was conducted for Chinese sports participants only. Following are the recommendations for future studies;

- The study lacked the aspects of intrinsic and extrinsic motivation, factors that impact positive sports psychology, amotivation, family and financial constraints.
- Due to time and financial constraints the study did not cover the clinical aspects of mental illness.
- The literature revealed that positive sports psychology plays a significant role in generating a healthy and active mental condition.

- The study lacked the impact of mental health on sports psychology.

References

Antonini Philippe, R., Sagar, S. S., Huguet, S., Paquet, Y., & Jowett, S. (2017). From teacher to friend: the evolving nature of the coach-athlete relationship. *International Journal of Sport Psychology*, *42*(1), 1-23. https://archive-ouverte.unige.ch/unige:25992/ATTACHMENT01

Arraya, M. A. M., & Porfírio, J. A. (2017). Training delivery methods as source of dynamic capabilities: the case of sports' organisations. *European Journal of Training Development*, *41*(4), 354-372. https://doi.org/https://doi.org/10.1108/EJTD-02-2016-0012

Balaguer, I., González, L., Fabra, P., Castillo, I., Mercé, J., & Duda, J. L. (2017). Coaches' interpersonal style, basic psychological needs and the well-and ill-being of young soccer players: A longitudinal analysis. *Journal of sports sciences*, *30*(15), 1619-1629. https://doi.org/https://doi.org/10.1080/02640414.2012.731517

Balcombe, L., & De Leo, D. (2020). Psychological screening and tracking of athletes and digital mental health solutions in a hybrid model of care: mini review. *JMIR Formative Research*, *4*(12), e22755. https://doi.org/https://doi.org/10.2196/22755

Bartholomew, K. J., Ntoumanis, N., Ryan, R. M., & Thøgersen-Ntoumani, C. (2017). Psychological need thwarting in the sport context: Assessing the darker side of athletic experience. *Journal of sport exercise psychology*, *33*(1), 75-102. https://doi.org/https://doi.org/10.1123/jsep.33.1.75

Baryeh, K., Asopa, V., Kader, N., Caplan, N., Maffulli, N., & Kader, D. (2021). Cell-based therapies for the treatment of sports injuries of the upper limb. *Expert Opinion on Biological Therapy*, *21*(12), 1561-1574. https://doi.org/https://doi.org/10.1080/14712598.2021.1928630

Benita, M., Benish-Weisman, M., Matos, L., & Torres, C. (2020). Integrative and suppressive emotion regulation differentially predict well-being through basic need satisfaction and frustration: A test of three countries. *Motivation Emotion*, *44*(1), 67-81. https://doi.org/https://doi.org/10.1007/s11031-019-09781-x

Casals, M., & Finch, C. F. (2017). Sports Biostatistician: a critical member of all sports science and medicine teams for injury prevention. *Injury Prevention*, *23*(6), 423-427. https://doi.org/http://dx.doi.org/10.1136/injuryprev-2016-042211

Chen, J. (2017). Influence of Biotechnology on Marketing of Building Materials. *Journal of Commercial Biotechnology*, *23*(2), 46-51. https://www.thefreelibrary.com/Influence+of+biotechnology+on+marketing+of+building+materials-a0505635255

Contreira, A. R., Nascimento Junior, J. R. A. d., Caruzzo, N. M., Costa, L. C. A. d., Gaion, P. A., Melo, S. V. A., & Fiorese, L. (2019). Basic Psychological Needs and Sports Satisfaction Among Brazilian Athletes and Coaches: The Mediating Role of the Dyadic Relationship. *Frontiers in psychology*, *10*, 2543. https://doi.org/https://doi.org/10.3389/fpsyg.2019.02543

Doob, C. B. (2018). *Great Expectations: The Sociology of Survival and Success in Organized Team Sports*. Routledge. https://doi.org/https://doi.org/10.4324/9781351039024

Fiorilli, G., Grazioli, E., Buonsenso, A., Di Martino, G., Despina, T., Calcagno, G., & Di Cagno, A. (2021). A national COVID-19 quarantine survey and its impact on the Italian sports community: Implications and recommendations. *Plos one*, *16*(3), e0248345. https://doi.org/https://doi.org/10.1371/journal.pone.0248345

Gabana, N. T., Wong, Y. J., D'Addario, A., & Chow, G. M. (2020). The Athlete Gratitude Group (TAGG): Effects of coach participation in a positive psychology intervention with youth athletes. *Journal of Applied Sport Psychology*, *34*(2), 229-250. https://doi.org/https://doi.org/10.1080/10413200.2020.1809551

Garit, J. R., Surita, Y. P., Domínguez, E. F., Moya, Y. S., & Castellanos, R. B. (2021). Anxiety and psychological variables of sports performance related to injuries in high-performance sportsmen. *Apunts Sports Medicine*, *56*(211), 100358. https://doi.org/https://doi.org/10.1016/j.apunsm.2021.100358

Kader, N., Asopa, V., Baryeh, K., Sochart, D., Maffulli, N., & Kader, D. (2021). Cell-based therapy in soft tissue sports injuries of the knee: a systematic review. *Expert Opinion on Biological Therapy*, *21*(8), 1035-1047. https://doi.org/https://doi.org/10.1080/14712598.2021.1872538

Kao, S.-F., & Tsai, C.-Y. (2016). Transformational leadership and athlete satisfaction: The mediating role of coaching competency. *Journal of Applied Sport Psychology*, *28*(4), 469-482. https://doi.org/https://doi.org/10.1080/10413200.2016.1187685

Khalil, S., Ansari, H., Ijaz Ahmad, A., Al-Hutam, A., Zaheer, M., & Aziz, A. (2021). Incidence of Infection and Mortality in Surgeries of Sports Injuries during COVID-19 Pandemic at Ghurki Trust Teaching Hospital, Lahore, Pakistan. *Pakistan Journal of Medical Health Sciences*, *15*(8), 1846-1848. https://doi.org/https://doi.org/10.53350/pjmhs211581846

Kim, H.-D., & Cruz, A. B. (2016). The influence of coaches' leadership styles on athletes' satisfaction and team cohesion: A meta-analytic approach. *International Journal of Sports Science Coaching*, *11*(6), 900-909. https://doi.org/https://doi.org/10.1177/1747954116676117

Kinoshita, K., MacIntosh, E., & Sato, S. (2021). A Buffering Effect of Mental Toughness on the Negative Impact of Basic Psychological Need Thwarting on Positive Youth Athlete Functioning. *The Sport Psychologist*, *35*(3), 190-199. https://doi.org/https://doi.org/10.1123/tsp.2020-0168

Küttel, A., & Larsen, C. H. (2020). Risk and protective factors for mental health in elite athletes: a scoping review. *International Review of Sport Exercise Psychology*, *13*(1), 231-265. https://doi.org/https://doi.org/10.1080/1750984X.2019.1689574

Liu, L., & Wu, H. (2021). Encryption method of annual bad debt accumulation information and reimbursement based on ant colony algorithm. *Journal of Commercial Biotechnology, 26*(1). https://doi.org/10.5912/jcb1079

Liu, Y., Huang, H., Pan, S., & Zhang, F. (2021). Research on ice hockey and bio-science education based on nonlinear mathematical equation. *Journal of Commercial Biotechnology, 26*(1). https://doi.org/10.5912/jcb1046

Lonsdale, C., Hodge, K., & Rose, E. A. (2008). The Behavioral Regulation in Sport Questionnaire (BRSQ): Instrument development and initial validity evidence. *Journal of sport exercise psychology*, *30*(3), 323-355. https://doi.org/https://doi.org/10.1123/jsep.30.3.323

Lu, X. (2021). Construction of Cultural Soft Power Evaluation Index Education System Policy Based On AHP. *Journal of Commercial Biotechnology, 26*(1). https://doi.org/10.5912/jcb1034

Monteiro, D., Cid, L., Teixeira, D. S., Fonseca, T., Duarte-Mendes, P., Silva, L. M., & Rodrigues, F. (2020). Understanding Needs Satisfaction and Frustration in Young Athletes: Factor Structure and Invariance Analysis. *International Journal of Environmental Research Public Health*, *17*(11), 4046. https://doi.org/https://doi.org/10.3390/ijerph17114046

Ng, J. Y., Lonsdale, C., & Hodge, K. (2011). The Basic Needs Satisfaction in Sport Scale (BNSSS): instrument development and initial validity evidence. *Psychology of Sport Exercise*, *12*(3), 257-264. https://doi.org/https://doi.org/10.1016/j.psychsport.2010.10.006

Nishimura, T., & Suzuki, T. (2016). Basic psychological need satisfaction and frustration in J apan: controlling for the big five personality traits. *Japanese Psychological Research*, *58*(4), 320-331. https://doi.org/https://doi.org/10.1111/jpr.12131

Ntomali, S., Psychountaki, M., Kyprianou, M., & Chairopoulou, C. (2017). The Moderation Effect of Athletic Maturity on the Association between Perceived Leadership Behavior and Athlete Satisfaction. *International Journal of Psychological Studies*, *9*(4), 24-32. https://doi.org/http://doi.org/10.5539/ijps.v9n4p24

Ozturk, S., & Kilic, D. (2018). What is the economic burden of sports injuries? *Eklem Hastalık Cerrahisi*, *24*(8), 108-111. https://doi.org/https://doi.org/10.5606/ehc.2013.24

Patel, D., Shah, D., & Shah, M. (2020). The intertwine of brain and body: a quantitative analysis on how big data influences the system of sports. *Annals of Data Science*, *7*(1), 1-16. https://doi.org/https://doi.org/10.1007/s40745-019-00239-y

Pharr, J. R., Lough, N. L., & Terencio, A. M. (2020). Sociodemographic Determinants of Physical Activity and Sport Participation among Women in the United States. *Sports*, *8*(7), 96. https://doi.org/https://doi.org/10.3390/sports8070096

Pitts, P. J. (2017). 21st Century Pharmacovigilance: Intuition, Science, and the Role of Artificial Intelligence. *Journal of Commercial Biotechnology*, *23*(1), 3-6. https://doi.org/https://doi.org/10.5912/jcb766

Purcell, R., Gwyther, K., & Rice, S. M. (2019). Mental health in elite athletes: increased awareness requires an early intervention framework to respond to athlete needs. *Sports medicine-open*, *5*(1), 1-8. https://doi.org/https://doi.org/10.1186/s40798-019-0220-1

Rocchi, M., & Pelletier, L. G. (2017). The antecedents of coaches' interpersonal behaviors: The role of the coaching context, coaches' psychological needs, and coaches' motivation. *Journal of sport exercise psychology*, *39*(5), 366-378. https://doi.org/https://doi.org/10.1123/jsep.2016-0267

Rodrigues, F., Teixeira, D. S., Neiva, H. P. C., & Luís Monteiro, D. (2020). The bright and dark sides of motivation as predictors of enjoyment, intention, and exercise persistence. *Scandinavian Journal of Medicine Science in Sports*, *30*(4), 787-800. https://doi.org/https://doi.org/10.1111/sms.13617

Ryan, J., DeBurca, N., & Mc Creesh, K. (2018). Risk factors for groin/hip injuries in field-based sports: a systematic review. *British journal of sports medicine*, *48*(14), 1089-1096. https://doi.org/http://dx.doi.org/10.1136/bjsports-2013-092263

Ryan, R. M., & Deci, E. L. (2000). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological inquiry*, *11*(4), 319-338. https://doi.org/https://doi.org/10.1207/S15327965PLI1104_03

Ryan, R. M., & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. The Guilford Press. https://doi.org/https://doi.org/10.1521/978.14625/28806

Schüler, J., Wegner, M., & Knechtle, B. (2014). Implicit motives and basic need satisfaction in extreme endurance sports. *Journal of Sport Exercise Psychology*, *36*(3), 293-302. https://doi.org/https://doi.org/10.1123/jsep.2013-0191

Sheehan, R. B., Herring, M. P., & Campbell, M. J. (2018). Associations between motivation and mental health in sport: A test of the hierarchical model of intrinsic and extrinsic motivation. *Frontiers in psychology*, *9*, 707. https://doi.org/https://doi.org/10.3389/fpsyg.2018.00707

Talha, M., Wang, F., Maia, D., & Marra, G. (2022). Impact of information technology on accounting and finance in the digital health sector. *Journal of Commercial Biotechnology*, *27*(2). https://doi.org/10.5912/jcb1299

Toffoletti, K., & Thorpe, H. (2018). The athletic labour of femininity: The branding and consumption of global celebrity sportswomen on Instagram. *Journal of Consumer Culture*, *18*(2), 298-316. https://doi.org/https://doi.org/10.1177/1469540517747068

Van Zyl, L. E., & Rothmann, S. (2019). *Theoretical approaches to multi-cultural positive psychological interventions*. Springer. https://doi.org/https://doi.org/10.1007/978-3-030-20583-6

Vansteenkiste, M., Ryan, R. M., & Soenens, B. (2020). *Basic psychological need theory: Advancements, critical themes, and future directions*. Springer. https://doi.org/https://doi.org/10.1007/s11031-019-09818-1

Włach-Biństa, Z. (2015). Satisfaction Scale in Sports- the construction and empirical verification of the questionnaire. *Journal of sport exercise psychology*, *31*(4), 147-161. https://doi.org/http://dx.doi.org/10.5604/1232406X.1178591

Yang, T., Yoshimura, Y., Morita, A., Namiki, T., & Nakaguchi, T. (2019). Pyramid predictive attention network for medical image segmentation. *IEICE Transactions on Fundamentals of Electronics, Communications Computer Sciences*, *102*(9), 1225-1234. https://doi.org/https://doi.org/10.1587/transfun.E102.A.1225