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RELATIONS OF COACH-ATHLETE RELATIONSHIP' QUALITY AND ATHLETE PSYCHOSOCIAL FUNCTIONING: A SYSTEMATIC REVIEW

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ABSTRACT

The innate tendency for forming social relations is also reflected in the area of sports. The sport itself represents a significant context for meeting other people, forming and maintaining relationships. This paper is aimed to review and interpret current literature results on coach-athlete relationships quality and its relations to aspects of athlete psychosocial functioning. Following the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA) guidelines, the literature search of different electronic databases yielded a total of 56 studies. The findings underline several aspects of athlete psychosocial functioning connected with coach-athlete relationships. Among others, it is revealed that positive relationships with coaches contribute to different aspects of athlete motivation and satisfaction manifested in higher performance and intention to continue with sports activities. It is also detected that better relationships with coaches protect athletes from stress, burnout and negative affect guarding their mental health. Relationships with coaches also shape the way an athlete perceives himself, coach and team. The results highlight the unique contribution of coach-athlete relationships to athlete life and activities which may serve as a useful guide to future research in sports.

Keywords: sports, coach-athlete relationship, athlete psychosocial functioning, PRISMA

INTRODUCTION

The sports environment represents the important context of social relationships (Jowett & Nezlek, 2011). During different forms of learning, training, competition and other sports activities, individuals develop social relationships that can have a high level of trust, closeness, dedication, support, cooperation, friendly affection, respect, etc. (Jowett & Nezlek, 2011). Relationships in sport are a contextually specific type of social relations, where the individuals express and satisfy important psychosocial needs (attachment need, need for support, self-actualization and others), and reach numerous goals (e.g., the development of sport competencies, raising the level of sports success, etc.) (Adie et al., 2008).

In accordance with the interdependence theory, Kelley et al. (1983, p.38) define social relations as “a complex and varied interdependence between two individuals, which lasts for a certain period of time”. If this interpretation is applied to the domain of sport, then the relationships between athletes, coaches, parents and other individuals in the sport community can be observed through different forms of affective, cognitive and behavioral interdependence (Jowett & Nezlek, 2011).

Every relationship in sport has a specific role and function in an athlete's life, considering the fact that they satisfy psychosocial needs of athletes in a different way. Among numerous relations in the sports environment, the relationship between coach and athlete is specified as the most important relation (Jowett & Schanmugam, 2016). In the initial stages of sport, a coach's role is connected with the support towards children so they can gain confidence in the activities which they are doing for the first time. However, in time, they develop a reciprocal relationship. The coach primarily observes and develops the athlete's technical and physical skills, but also has a significant role as an attachment figure (Davis and Jowett, 2010). The coach is becoming a dominant person who has numerous psychosocial functions, which resembles those of the parents (Jowett & Schanmugam, 2016). He is becoming a new authority in the life of an athlete. Among numerous roles, a coach gives the support to an athlete during psychophysical changes, actively listens, takes care of an athlete and gives him support during the training.

It is certain that the type of sport environment, the phase of the athlete's career, age and other individual differences and preferences mold the type and frequency of interactions between athletes

and coaches (Côté, 1999). Therefore, we can expect variations in their quality. Under the term of the quality of social relations, we consider the number of characteristics, including the positive ones (intimacy, affection, help, attachment, trust, etc.) and negative ones (conflicts, rivalry, animosity, aggression, etc.) which are used to describe the relationship in more details (Berndt, 1996). In this way, some coach-athlete relationships can be defined as having high quality, if the positive relational exchange (trust, commitment, respect, etc.) is dominant. Less quality relationships include numerous conflicts, mistrust, lack of understanding and other forms of negative interaction exchange.

A lot of research in the domain of sport is focusing on the relations of the quality of coach-athlete relationships and different athlete's psychological variables, and the variables of different aspects of sport activities. The general conclusion is the high-quality coach-athlete relationship has a positive effect on the individual psychological variables of the athletes (Adie & Jowett, 2010), sport performance (Jowett, 2005), sport achievement of athletes and sport teams (Eys et al., 2019), as well as psychophysical growth and development of young athletes (Ullrich-French & Smith, 2006). However, it is not yet completely clear on which psychosocial aspects of the athlete's functioning influence this relationship the most. In this paper, we systematically review and organize the current literature on coach-athlete relationships. We are eager to identify the most common aspects of athlete psychosocial functioning related to the quality of coach-athlete relationships. We would like to show the most important findings and conclusions concerning this topic, because understanding the nature, functions and importance of coach-athlete relationship can improve coach expertise, training process and overall athlete performance.

METHOD

Design

The review incorporated studies about quality of coach-athlete relationship and different aspects of psychological and social functioning of athletes. The systematic electronic search of available scientific papers was realized on two occasions. The first one took place during 2000. via the platform of the Consortium of Libraries in Serbia (KoBSON), which enables the use of the electronic services for searching scientific journals. The following electronic services for search of scientific journals were used: Wiley online library, Science Direct, Sage Journals, Oxford Journals, Emerald Insight, JSTOR,

EBSCOhost. Second search, during 2022, used 2 electronic libraries: Web of Science and Scopus. During the both searches, the combination of the following keywords is used: quality of coach-athlete relationship.

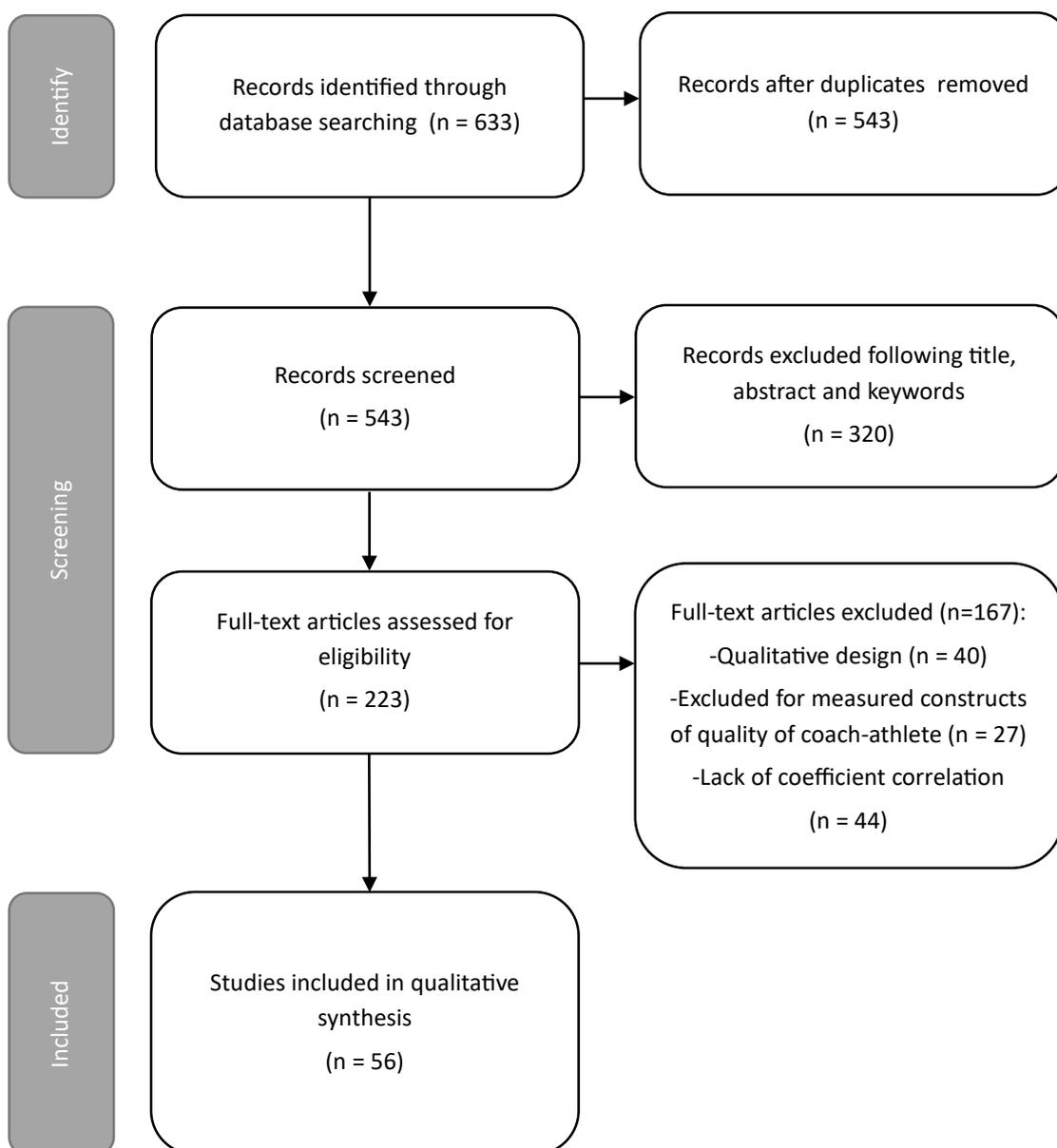
Inclusion criteria

The selection of the studies during the search was based on the following inclusion criteria: a) published original scientific papers in Serbian and English in the period from 2000 to 2023.; b) quantitative type of design; c) papers that question the relations between the quality of coach-athlete relationship and psychosocial aspects of athletes' functioning; d) contain the data about the coefficient of the correlation between aforementioned variables; e) papers are open accessed (full-text). Abstracts and conference reports, books and publications were not included in the selection process. The selection was not limited to the criteria of age, gender, type of sport, length of sports involvement, the level of competition and education.

Selection of studies

The results of the search are presented in Picture 1. via Prism (Preferred reporting items for systematic reviews and meta-analyses) flow diagram. During the identification phase, a total of 633 papers were identified on the topic of quality of coach-athlete relationship (KoBSON = 354; Web of Science = 172; Scopus = 107). During the screening stage, the duplicates were excluded, a total of 90 studies. Two reviewers then screened titles and summaries according to the descriptors, which left a total of 543 studies. In the eligibility stage, reviewers independently checked full-text papers, reaching a level of agreement of over 90%. Disagreements and doubts were solved through discussion and consensus. During the included phase, reviewers agreed upon the final sample of 56 studies included in the qualitative synthesis (KoBSON = 27; Web of Science = 23; Scopus = 6).

Figure 1. Preferred Reporting Items of Systematic Review (PRISMA) flow diagram.



RESULTS

Descriptive characteristics of included studies

The total number of participants (see Table 1) (Section Appendix) in 56 studies is 14304, both males and females. The youngest participant had 9 and the oldest 40 years ($M = 19.29 \pm 4.59$). The studies included all levels of competitions as well as different types of sport, some of which are: individual (athletics, gymnastics, archery, tennis, table tennis, swimming, ice skating, skiing) and team sports (football, basketball, volleyball, baseball, hockey). Certain studies assess only participants who are in individual sports ($N = 8$), while others assess only participants in team sports ($N = 15$), while some include both individual and team sports ($N = 31$). As far as the level of relationship between coach and athlete and psychological aspects are concerned, the lowest coefficient correlation is $r = .07$, and the highest $r = .82$ ($M = .32.67 \pm 14.21$) which indicates that the strength of the connection ranges from low to high.

The quality of interpersonal relationships is operationalized with the achieved score on the questionnaires that assess positive and negative characteristics which describe the relationship. They are subjective assessments of the certain aspects of close relations. The fulfillment of certain psychosocial needs is questioned (e.g. need for closeness, safety, support, etc.) and the forces of interaction between close people (e.g. solving conflicts, telling secrets) (Furman & Buhrmester, 1985). The most frequent are both types of operationalizations: as processes or forms of exchange and interaction as well as gains/provisions that are fulfilled through relations (Ladd, Kochenderfer & Coleman, 1996). The largest number of the included studies for assessment of the quality of relations between coach and athlete used the questionnaire The Coach-Athlete Relationship Questionnaire (CART-Q; Jowett and Ntoumanis, 2004) ($N = 40$), that enables the assessment of the coach-athlete relationship via general measure of the relations that is present in 21 papers. While the dynamics of presence of the separate scales of mentioned questionnaire is the following: Commitment ($N = 27$), Complementarity ($N = 25$) and Closeness ($N = 14$). In the rest of the papers, the following measures of the quality of relationship coach-athlete are present: Support ($N = 6$), Attachment ($N = 4$), Relationship Satisfaction ($N = 3$), Conflict ($N = 2$), Proximity, Relatedness, Depth, Relationship interdependence, Positive influence, Punishment, Dysfunction ($N = 1$).

The aspects of an athlete's psychosocial functioning are operationalized with the achieved score on the questionnaires of self-report. Table 2 (Section Appendix) displays psychosocial aspects that are assessed in 56 included scientific papers.

DISCUSSION

The present review was conducted on a total of 56 studies exploring relations between quality of coach-athlete and different aspects of athlete psychosocial functioning. We were aimed to identify areas of athlete psychosocial functioning connected with the quality of coach-athlete relationship. To the best of our knowledge this is the first systematic review exploring this topic. A review of the studies highlighted that there are several athlete psychosocial areas of functioning connected with the quality of coach-athlete relationship.

These are motivation and satisfaction, variables of athlete mental health, variables of self-perception, perception of coaches and team.

Athlete motivation

It is noticed that numerous studies explore relations among quality of relationship and athlete motivation. This is not a surprise, considering the fact that motivation of athletes is considered to be a significant factor of athletes' success (Jowett et al., 2017). Also, it is noticed that different measures of motivation are used, which creates a more detailed picture of the relations between athletes' social relationships and motivational aspects. It is concluded that athletes who have a higher quality of relationship with coach have a more pronounced sport motivation (Jackson & Beauchamp, 2010), they are more intrinsically motivated (Adie & Jowett, 2010; Jõesaar et al., 2011; Pacewicz et al., 2020), they feel that their basic needs for autonomy, competence and social attachment are satisfied (Choi et al., 2013), they are more goal-oriented toward tasks and skills (Adie & Jowett, 2010), and have more pronounced achievement goals (Isoard-Gauthier et al., 2016; Nicholls et al., 2017), and motivational outcomes such as working hard, enjoying sport and having competencies (Chan et al., 2018). Altogether, this high motivation status is reflected in athletes' intention to exert a high degree of sport effort (Jackson and Beauchamp, 2010) and willingness to continue with sport activities (Gardner et al., 2016).

The relationship of athlete with coach creates a prerequisite for improving or lowering the athlete's motivation. Positive, supportive relationship with a coach can create a social climate where the individual develops their skills, but also strives to achieve their goals, which satisfies their basic psychological needs (Felton & Jowett, 2013). How significant others interpret athletes's behavior and beliefs influences their personal expectations, values and the behavior that leads to achieving goals. If the behavior and the beliefs of the significant others are interpreted as positive, there is a development of a positive self-image and the impression of competence, control, the positive affect and inner motivation (Jowett & Cramer, 2010). The athlete who has satisfied the need for competence, connection and autonomy through relation with the coach, will invest more time and effort into sports. This is different from an athlete who is not in this situation and who can decide to abandon sport because of this (Adie & Jowett, 2010). It is concluded that coaches as significant others have a major impact on the satisfaction of basic psychological needs and the development of autonomous forms of motivation. With their behavior, they can create a social context that is supportive or sabotaging (Joesaar et al., 2011).

Athlete satisfaction

After the motivation, the focus of different research in the context of social relations in sport was the topic of satisfaction of athletes. This represents the positive emotional reaction to sports activities and includes feelings like fun, enjoyment, and love. It is noticed that the high quality coach-athlete relationship leads to higher satisfaction of an athlete with their own performance, training, and coach's instructions and behavior. (Davis & Jowett, 2010; Jowett &

Nezlek, 2011; Yang et al., 2014; Zhang & Chelladurai, 2013), they show bigger enjoyment in sport (Gardner et al., 2016), and a bigger desire and passion to play (Lafreiniere et al., 2008; Güllü, 2019). It is also noticed that these athletes are generally more satisfied, due to spillover mechanisms (Alfermann et al., 2013). Based on the Sport Commitment Model (Scanlan et al., 2003) satisfaction with sport is the strongest predictor of sport dedication. Relationship with coach is presented as one of the most significant source of athlete's satisfaction. Involvement and the support of coaches as well as their satisfaction with the athletes' performance and the achievement are the main sources of athlete satisfaction.

Athlete mental health

A larger number of studies is concerned with relations between quality of coach-athlete relationship and athletes' mental health. Doing sports (especially on the professional level) includes many psychological and physical demands that an athlete has to face (Powers et al., 2000). If an athlete is not ready to adequately and continuously face and deal with the pressure, it can lead to stress, which can lead to burnout and even mental disorders. Positive relations with the coach can have an important protective function in stressful situations. If an athlete, through relation with the coach, receives enough support, understanding, comfort and affection, they will feel protected and secure and will deal easier with stressful situations. It is shown that these athletes are less prone to interpret situations as threatening, but rather as challenging (Nicholls et al., 2016), they use more functional coping strategies such as self and other control and dealing with the problem (Nicholls et al., 2016), use more positive self talk (Ada et al., 2021) and feel much more psychologically safe (Gosai et al., 2021). Social relations with coaches do not only have a protective function, but it is also as we mentioned earlier, a prerequisite to satisfy basic needs, lead to adequate motivation, positive self-image, and mental well-being, which altogether improves the mental health of an athlete. Many research indicate that positive relationship with coach is connected with better psychological well-being (Jowett et al., 2017), the general quality of life (Powers et al., 2020), vitality (Felton & Jowett, 2013), flourishing in life (Gosai et al., 2021), positive affect, happiness and life satisfaction (Lafreiniere et al., 2011; Felton and Jowett, 2015). It is also notices, that athletes with high quality relationship with coach have less indicators of depression (Powers et al., 2020), anxiety and anxiety concentration disruption (Scott et al., 2020; Stephen et al., 2022), negative affect (Felton & Jowett, 2013), stress (Lu et al., 2016; Ullrich-French & Smith, 2006), athlete burnout (Aunolaa et al., 2018; Pacewicz et al., 2020) and eating psychopathology (Shanmugam et al., 2013; Shanmugam et al., 2014).

Athlete self- and other-perceptions

Another important psychological aspect of an athlete functioning is the self-concept which is observed in the context of social relations. Self-concept is the way a person, according to different criteria, observes and assesses himself and it is important for all life's segments. In the context of sport, the self-concept and self-evaluation processes are especially important (Jowett & Cramer, 2010), because they are connected to cognitive, affective and behavioral

mechanisms of sport activities (Mortiz et al., 2000). The results of research suggest that athletes who have a better quality of relations with the coach have a higher degree of both sport confidence (Gencer & Öztürk, 2018) and general confidence (Scott et al., 2020). They have a higher score on the self-concept scales such as bodily, social, sport, physiological, mental self-concept and self-concept of performance and skill (Jowett & Cramer, 2010; Scoffier et al., 2010; Shapiro & Martin, 2014). They also have a more pronounced experience of self-efficacy (Jackson & Beauchamp, 2010), and value their individual sport performances more (Zhang and Chelladurai, 2013; Contreira et al., 2019). In the context of social factors of self-image, many researchers focus on social relations, which are the basic mechanism of developing self-image (Jowett & Cramer, 2010). During an interaction and communication with the coach athletes exchange important messages such as expectation, support, feedback, encouragement, cooperation, compassion etc. This also includes the less positive messages such as control, rejection, punishment etc. These signals are connected to the questions of effort, ability, performance, athlete's achievement, etc. If the quality of the relationship with the coach is positive, the social climate will be positive. This will enable the internalization of a positive self-image, because the individual typically internalizes the standards of significant others if he has a strong positive attachment to them (Jowett & Cramer, 2010). How an athlete observes and assesses things is influenced by how he is observed and assessed by significant others, especially the coach.

Because of the coach's importance, many researchers observed how the coach is viewed by athletes. In team sports, the perception of coaches, their personal characteristics and their behavior is frequently different because of the individual approach that the coach has with each player (Stein et al., 2012). An athlete does not pay so much attention to the coach's relationship with others, but is focused on his own relationship with the coach. This is the reason why the researchers claim that in order to understand the team climate, created by the coach, it is important to take into consideration the personal experience of every individual athlete (Stein et al., 2012). It is shown that the quality of the relationship between an athlete and a coach is connected to how the athlete observes him. If the coach is committed and close to athlete, he will see him as a well-intentioned, competent person with integrity (Zhang & Chelladurai, 2013), more empathetic (Jowett et al., 2012), capable to guide training practice and give adequate instructions, as a person who gives social support and is more democratic towards athletes (Alfermann et al., 2013). In this type of interpersonal climate, athlete satisfaction with relationships is bigger (Davis et al., 2016), the conflict is present in a lower percentage and when it occurs is better handled (Jowett et al., 2012; Jowett et al., 2023). He trusts the coach more and communicates openly (Zhang and Chelladurai, 2013; Jowett et al., 2023) which is noticed among other occasions in willingness to report concussion problems (Milroy et al., 2018).

Coach also represents the team leader who can modify and manage the group dynamics in the desired direction. In this process, the relationship the coach has with individual athletes contributes to the entire team. Positive interaction with the coach helps the athletes to be more integrated into the team (Jowett and Chaundy, 2004), and to have a

higher satisfaction with team and motivation to play, which leads to greater team efficacy (Hampson and Jowett, 2014; Cho et al., 2020). The high degree of mutual trust, respect, dedication and cooperation between coach and athlete has a positive impact on the feeling of togetherness. If athletes believe and feel that the coach is close to them, that he has long term plans with the players, that the players can trust the trainer and rely on him, they will start to work harder, be more efficient and achieve more.

Although study provides an important insight in the importance of coach-athlete relationship for athlete's psychosocial functioning, the definite generalization is still constrained by several limitations. The most important one is of methodological nature, and it concerns the lack of external control of the data collection process. The inclusion of independent and external researcher/s in the process of control of the data collection would be much more methodologically justified. Another limitation is conceptual, when it comes to the phenomenon of quality of coach-athlete relationship. We were particularly concerned about including in the study works that conceptualize this term in a similar way. However, we believe that in this part as well, external controllers would play a key role. Closely related to this issue is the use of various measuring instruments used in the studies. Although we narrowed down our choices in this matter, the question remains how successful we have been. It was noticed that for some aspects of the psychosocial functioning of athletes, the number of studies (and sample size) is too small to draw final conclusions.

Therefore, we propose that further research establishes a shared and reliable theoretical and methodological framework for the concept of coach-athlete relationship. External control of the data collection and analysis process is required too. It is also recommended to explore this topic in relation to age, the length of sports engagement, gender, the type of sport, the level of competition and numerous other factors that potentially moderate relation of athlete relationships and psychosocial functioning. It would be also interesting to assess, by longitudinal research design, how these relationships affect athlete psychosocial functioning as the time progresses.

CONCLUSION

With the literature overview on the topic of the quality of coach-athlete relationship in sport, we wanted to focus on the psychosocial functioning of athletes. We wanted to determine which aspects of the psychosocial functioning of athletes are connected with this social relation. The relationship with the coach is presented as the most important relationship, which has a significant influence on the psychological and social aspects. When psychological aspects of an athlete's functioning is concerned, the topics of motivation, satisfaction, self-concept and mental health variables are in the focus. Athlete perceptions of coach and team are also related to coach-athlete relationships.

Researchers conclude that it is completely justified to consider coach-athlete relationships as an important factor that contributes to the different athlete's motivational aspects. Athletes which have quality relations with the coach, also have motivational benefits such as higher dedication, involvement, goal orientation, etc. which results in higher sport

efficacy. If the sport activity is supported by high quality coach-athlete relationship, athletes have an emotional benefit such as higher satisfaction and enjoyment, as well as a desire to play, which is the prerequisite of continuous sport activity. This relationship is also one of the sources of athlete positive self-image as well as self-efficacy and significantly participates in maintaining an athlete's mental health. It is also emphasized that quality relationships with coaches guide the athletes toward the positive perception of the coach and team, which can influence the team efficacy and relationships in the team.

Based on the presented research results on the topic of quality of coach-athlete relationship in sports, it can be concluded that these relations have a unique and significant role in the life of an athlete. It would be useful to bear in mind this notion while directing and creating a sports career. The main conclusions of this study could be implemented in the sports environment by building high quality relationships, in a systematic way. In this way, we can set conditions for improvement of psychosocial functioning of athletes which leads to better sports performance and results.

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APPENDIX

Table 1.

No.	Author	Year	N	Sport	Age/Range	Quality of coach-athlete relationship scale	Athlete psychosocial variable				
	Jowett and Chaundy	2004	111	Team	21.08		Team cohesion (social)		Team cohesion (task)		
						Commitment		.36		.50	
						Closeness		.31		.48	
						Complemen.		.29		.48	
	Amorosea and Butcherb	2007	581	Individual Team	17.50	Relatedness			Sport motivation		
									.45		
	Rutten at al.	2007	260	Team	14.80	Relationship quality	Moral reasoning	Moral atmosphere	Antisocial behavior	Prosocial behavior	
							.21	.45	.38	.26	
	Lafreiner et al.	2008	157	Team	20.23		Harmonious passion		Obsessive passion		
						Commitment		.28		.22	
						Closeness		.35		.22	
						Complementarity		.38		-	
	Olympiou et al.	2008	591	Team	16-36		Motivational climate:				
							Punishment	Unequal recognition	Important role	Cooperative learning	Effort/Improvement
						Commitment	-.15	-.22	.42	.44	.49
						Closeness	-	-.19	.42	.39	.47
						Complementarity	-.16	-.17	.39	.42	.46
	Jowett	2008	138	Individual Team	18-31	Relation satisfaction			Intrinsic motivation		
									.27		
	Jowett	2007	303	Individual Team	12-18	Relationship quality			Physical self concept		
									.63		
	Adie and Jowett	2010	194	Individual	21.50		Mastery approach		Performance avoidance		Intrinsic motivation
						Relationship quality	.35		-.24	.26	
						Commitment	.22		-.20	.29	
						Closeness	.39		-.25	.29	
						Complementarity	.35		-.21	-	
	Davis and Jowett	2010	309	Individual Team	19.90	Attachment:	Satisfaction (performance)		Satisfaction (training)		Satisfaction (treatment)
						Avoidant	.45		-.39	-.48	
						Anxious	-.28		-.16	-.22	
						Relation satisfaction	.46		.61	.67	
	Jowett and Cramer	2010	173	Individual	17.55		Self concept -Skill	Self concept -Body	Self concept -Physiology	Self concept -Mental	Self concept -Perform.
						Support	.34	.29	.28	.37	.38
						Depth	.43	.36	.33	.44	.47

Jackson and Beauchamp	2010	58	Individual	15.52		Self efficacy		Coach efficacy		Effort
					Commitment	-		.46		.73
					Satisfaction	.42		.60		.41
Lafreniere et al.	2011	104	Individual Team	22.04	Relationship quality			Athlete` happiness		
					Closeness			.33		
					Commitment			.38		
					Complementarity			.52		
								.52		
Jowett and Nezek	2011	138	Individual	18-40	Relationship interdependence	Satisfaction (performance)		Sat. (training, instructions)		Sat.(treatment)
						.67		.34		.82
Rutten et al.	2011	439	Individual Team	13.72	Relational support	Moral	Antisocial behavior	Prosocial behavior	Fairplay	Moral atmosphere
					Attach.rel. support	.20	-.55	.46	.23	.65
						-	-	.36	.29	.44
Jowett et al.	2012	178	Individual Team	20.40	Relationship quality	Satisfaction with training and instruction			Coach empathy	
						.63			.78	
Jowett et al.	2012	103	Individual Team	22.04	Relationship quality	Harmonious passion		Obsessive passion		Conflict with coach
						.55		.26		-.55
Jowet and Shanmugam	2012	150	Team	20.07	Commitment			Collective efficacy		
					Closeness			.37		
					Complementarity			.33		
								.29		
Shanmugam et al.	2013	411	Individual Team	20.95	Support	Person Perfectionism	Self-critic perfectionism	Self esteem	Depression	Eating psychopathology
					Conflict	.13	-.08	.12	-.13	.62
						.16	.22	-.20	.23	
Davis et al.	2013	107	Individual Team	20.60	Relationship quality			Relationship satisfaction		
								.34		
Felton and Jowett	2013	300	Individual Team	20.40	Relationship quality	Need satisfaction	Need satisfaction	Need satisfaction	Vitality	Self concept
						Autonomy	Competence	Relatedness	.19	(skill)
						.52	.61	.60		(performance)
									.18	.16
Zhang and Chelladurai	2013	215	/	20.00	Commitment	Performance	Perception of justice	Perception of bene.	Perception of integrity	Perception of comp.
					Cooperation	.46	.42	.40	.39	.43
						.44	.44	.44	.47	.40
										.58
Choi and Huh	2013	328	Individual Team	20.00	Commitment	Need satisfaction: Autonomy		Need satisfaction: Competence		Need satisfaction: Relatedness
					Closeness	.19		-		.13
					Complementarity	.32		.31		.39
						.30		.39		.38
Alfermann et al.	2013	173	Individual	13.20	Support	Training and instruction	Positive feedback	Mastery climate	Performance climate	Athlete satisfaction
					Closeness	.48	.47	.64	.22	.33
						.56	.43	.51	-.27	.61

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Davis and Jowett	2014	192	Individual Team	16-32	Attachment: Avoidant	Need satis. -.14	Vitality -.24	Self-esteem -.16	Neg.affect .21	Posit.affect -.21	Skil self.conc. -.14	Perform.self conc. -.17	
					Ambivalent	-	-.17	-.16	.38	-.10	-	-	
Shanmugam et al.	2014	411	Individual Team	20.95	Support	Pers.perfecionism. .13	Self-critical perf. -.08	Self-esteem .12	Depression -.13			Eat.psychopath. -.13	
					Conflict	.16	.22	-.20	.23			.12	
Hampson and Jowett	2014	150	Team	20.07	Commitment				Collective efficacy .37				
					Closeness				.33				
					Complementarity				.29				
Yang et al.	2014	350	Individual team	21.00	Relationship quality				Satisfaction (training) .70				
Felton and Jowett	2015	241	Individual team	20.74	Attachment: Avoidant	Performance satisfaction -.21	Life satisfaction -.21		Depression .28			Negative affect .18	
					Anxious	-	-		.27			.17	
					Secure	.13	.18		-.21			-.13	
Gardner et al.	2016	393	Individual Team	13.03	Relationship quality		Enjoyment .47					Intention to continue .33	
Isoard-Gauthier et al.	2016	360	Individual Team	21.00			Athlete burnout:					Achievement goals:	
						Reduc.accompl. -.14	Exhaustion -	Sport.devaluat. -.23	Mastery approach .31			Master avoidance .21	
					Commitment	-.16	-.19	-.24	.26			-	
					Closeness	-.18	-.18	-.28	.32			.12	
					Complementarity								
Lu et al.	2016	218	Individual Team	20.04	Emotionional support		Life stress -.32					Athlete burnout -.23	
Nicholls et al.	2016	274	Individual Team	21.59			Stress appraisal:					Coping with stress	
						Threat -	Challenge .42	Centrality -	Control-self .45	Cont.-others .44	Uncontroll. -.26	Task .28	Disengagement -.20
					Closeness	-.24	.22	.18	.26	.28	-	.19	-
					Commitment	-.35	.55	-	.53	.54	-.44	.38	-.20
					Complementarity								
Nicholls et al.	2017	104	Team	9-20	Relationship quality				Achievement-mastery .33				
					Commitment				.27				
					Closeness				.24				
					Complementarity				.39				
Jowett et al.	2017	756	Individual Team	14-27	Relationship quality		Overall need satisfaction .73		Self determinated sport motivation .52			Mental well-being .46	
Chan et al.	2018	904	Individual Team	9-18			Motiv. Outcome: Competence .30		Motiv. Outcome: Effort .40			Motiv. Outcome: Enjoyment .41	
					Positive influence		-.07		-			-.09	
					Punishment		-.08		-.21			.14	
					Dysfunction								

Gencer and Ozturk	2018	198	Individual	15-25		Sport confidence						
					Closeness	.38						
					Commitment	.37						
Avci et al.	2018	96	Team	19.97	Complementarity	.30						
					Closeness	.27						
					Commitment	.33						
Davis et al.	2018	82	Team	19.87		Athlete burnout (exhaustion)						
					Relationship quality	-.33						
					Commitment	-.26						
Milroy et al.	2018	268	/	19.16	Attachment:	Concussion reporting to coach						
					Avoidant	-						
					Anxious	.13						
Davis et al.	2019	210	Individual Team	18.00		Athlete burnout:						
					Relationship quality	Reduced accomplishment	Emot.and phys exhaustion		Sport devaluation			
						-.26	-.36		-.25			
Davis et al.	2019	182	Individual Team	21.10	Relationship quality	Satisfaction (performance)	Satisfaction (training)		Satisfaction (treatment)			
						.60	.59		.55			
Gullu	2019	200	Team	20-30		Harmonius passion		Obsessive passion				
					Relationship quality	.38		.27				
					Closeness	.33		.36				
					Commitment	.46		.32				
Contreira et al.	2019	182	Individual Team	16.24		Basic psychological needs:			Athlete satisfaction:			
					Closeness	Competence	Autonomy	Relatedness	Train. and instruction	Ind.Perform.	Personal treatment	
					Commitment	.19	.27	.32	.42	.24	.45	
					Complementarity	.27	.34	.32	.42	.36	.50	
Robert et al.	2019	185	Individual Team	17.27		Perception of collective efficacy:				Goals orientation		
					Complementary	Ability	Effort	Persistence	Union	Preparation	Task	Ego
					Closeness	.32	.37	.23	.23	.34	.44	-
					Commitment	.41	.40	.26	.28	.39	.38	-
Powers et al.	2020	79	Individual Team	19.50		Quality of life		Depression		Anxiety		
					Commitment	.38		-.36		-		
					Closeness	.37		-.44		-.26		
					Complementarity	.36		-.41		-		

Cho et al.	2020	254	Team	16.45														Team efficacy						
					Relationship quality													.73						
Choi et al.	2020	302	Individual Team	21.63														Athlete burnout						
					Relationship quality													-.60						
Nascimento et al.	2020	335	Team	16.02														Motivation:						
						Amotivation	Introjected regulation	Identified regulation	Integrated regulation	Intrinsic regulation														
					Proximity	-.16	.11	.21	.19	.21														
					Commitment	-.21	.18	.31	.29	.28														
					Complementarity	-.12	.21	.26	.23	.25														
Gosai et al.	2021	166	Team	20.86														Psychological safety	Flourishing in sport and life	Positive affect	Individual performance	Team performance		
					Commitment	.28	.27	.36	.57	.51														
					Closeness	.24	.24	.25	.48	.51														
					Complementarity	.26	.26	.37	.48	.47														
De Silva et al.	2021	23	Team	18.04															Stress					
					Commitment														-.52					
					Complementarity														-.42					
Wekesser et al.	2021	148	Team	13.83															Intentions to continue					
					Commitment														.23					
					Closeness														.18					
					Complementarity														.25					
Ada et al.	2021	477	Individual Team	19.24															Negative self talk:	Positive self talk:				
						Worry	Disengage.	Som.fatigue	Psych-up	Anx.control	Confidence	Instruction												
					Closeness	-.11	-.23	-.14	.28	.16	.29	26.												
					Commitment	-.12	-.19	-.14	.26	.17	.27	.25												
					Complementarity	-.13	-.21	-.13	.27	.16	.29	.26												
Stephen et al.	2022	142	Individual	26.59															Self efficacy	Anxiety concentration disruption				
					Closeness														.67	-.34				
					Commitment														.56	-.24				
					Complementarity														.52	-.32				
Fan et al.	2022	272	Individual	19.95															Basic psychological needs satisfaction	Athlete burnout				
					Relationship quality														.56	-.47				
Davis et al.	2023	350	Individual Team	19.18															Basic psychological need satisfaction:					
						Autonomy	Competence	Relatedness																
					Relationship quality	.53	.35	.38																
Jowett et al.	2023	379	Individual Team	21.36															Communication: Conflict management	Communication: Openess	Psychological safety			
					Commitment														.19	.43	.30			
					Closeness														.28	.29	.29			
					Complementarity														.36	.29	.35			

Table 2. Psychosocial aspects of athlete's functioning

<p>Motivation:</p> <ul style="list-style-type: none"> • Sport motivation; • Intrinsic motivation; • Goal orientation (ego, task, skill; avoidance); • Motivational outcome; • Self-determined motivation; • Basic need satisfaction (autonomy, competence, relatedness); • Intention to continue; • Effort; <p>Athlete mental health:</p> <ul style="list-style-type: none"> • Mental well-being; • Quality of life; • Happiness; • Life satisfaction; • Flourishing in life; • Vitality; • Sport burnout; • Stress; • Stress appraisal; • Coping with stress; • Psychological safety; • Positive and negative affect; • Depression; • Eating psychopathology; • Anxiety; • Anxiety concentration disruption; • Positive and negative self-talk. 	<p>Athlete self-perception:</p> <ul style="list-style-type: none"> • Self-concept (skill, performance, physical, body, physiology, mental, sport competence); • Sport self-esteem; • General self-esteem; • Self-efficacy; • Perfectionism (personal, self-critical); • Moral reasoning; • Antisocial and prosocial behavior; • Fair-play attitude. • Individual performance. <p>Athlete satisfaction:</p> <ul style="list-style-type: none"> • Satisfaction (performance, training, instruction, treatment); • General athlete satisfaction; • Passion (harmonious, obsessive); • Enjoyment. <p>Athlete satisfaction:</p> <ul style="list-style-type: none"> • Satisfaction (performance, training, instruction, treatment); • General athlete satisfaction; • Passion (harmonious, obsessive); • Enjoyment. 	<p>Athlete perception of team characteristics:</p> <ul style="list-style-type: none"> • Collective efficacy; • Team cohesion (social, task); • Motivational climate (ego, performance, punishment, unequal recognition, important role, cooperative learning, effort/improvement i skills); • Team performance. <p>Athlete perception of coach:</p> <ul style="list-style-type: none"> • Coach characteristics (fairness, integrity, instruction, training, competence, support, democratic behavior, positive feedback, benevolence); • Conflict; • Trust; • Coach efficacy; • Coach empathy; • Communication with coach; • Satisfaction with relationship; • Concussion reporting.
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