

# Satisfaction of basic psychological needs of young Serbian female athletes: the role of coach and teammates

Jovana Trbojević<sup>1</sup>✉ • Jelica Petrović<sup>2</sup>

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## Abstract

In youth sport, coach and teammates have a relevant role in an athlete's development as a player. They can create a task or ego-involving motivational climate, and directly influence athlete's affective, cognitive, and behavioral outcomes. The purpose of this research is to examine the effects of motivational climate created by coach and teammates on the satisfaction of basic psychological needs in sport of young female athletes. The sample consisted of 192 young Serbian female athletes from collective sports (handball, volleyball, and basketball) with an average age of 13.6 years. They filled out Peer Motivational Climate in Youth Sport Questionnaire - MCYSQ (Ntoumanis & Vazou, 2005), Perceived Motivational Climate in Sport Questionnaire - 2 - PMCSQ-2 (Newton, Duda & Yin, 2000), and the Basic Need Satisfaction in Sport Scale (BNSSS, Ng, Losdale, & Hodge, 2011). Results of regression analysis showed that motivational climate created by coach and teammates represent significant predictors of the basic psychological needs: need for relatedness (35.5% of variance), need for competence (21.9% of variance), and need for autonomy – choice (10.5% of variance). Perceived task-involving motivational climate created by coach and teammates singled out as statistically significant predictors of need for relatedness and competence, while task-involving motivational climate created by teammates singled out as significant predictor of need for autonomy. Athletes who perceive coach's and teammate's behavior as task-involving, will have more satisfied basic psychological needs. Understanding the factors that facilitate basic needs contribute to prevention of dropping out of sports in adolescence, and athlete's motivation and achievement.

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**Keywords** motivational climate • youth sports • coach-athlete relationship • teammates • basic needs in sports.

## Introduction

Sport, as a social environment with its own set of values and social rules, has a relevant role in the development of an adolescent (Stark & Newton, 2014). During this period, young athletes enter a period of specialization where doing sports gets more intense, and they develop more professional attitudes toward sports (Cote & Fraser-Thomas, 2007). Adolescence represents developmental period of cognitive, emotional, physical, and social changes; inner conflicts and identity development questions (Erikson, 2008). The need to belong and affiliate with others, as well to be perceived as competent and as an adult, is at the highest level in adolescence (Erikson, 2008). These needs and developmental tasks also influence young athletes, who tend to accomplish these tasks through sports.

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✉ jovana.trbojevic88@gmail.com

<sup>1</sup> Matica srpska, Novi Sad, Serbia

<sup>2</sup> University of Novi Sad, Faculty of Philosophy, Department of Psychology, Novi Sad, Serbia

*Basic needs in sports*

According to the Basic Needs Theory (Deci & Ryan, 2014) there are universal, innate basic psychological needs: need for autonomy, competence, and relatedness. Need for autonomy represents the need to feel control in decision making process regarding own choices and activities (Reinboth & Duda, 2006). Need for competence refers to need to perceive one's behavior and interaction with others and the world, as successful; to feel competent in different situational contexts, and confident in own abilities. The need for relatedness represents need to connect with others, to be accepted, and to achieve reciprocal interpersonal relationships (Reinboth & Duda, 2006). Satisfaction of these basic needs is fundamental for individual's psychological development and well-being, and depends on social environment which can contribute to their satisfaction (Ryan & Deci, 2002). Psychosocial factors such as family, coach, and teammates have been shown to directly influence the degree of satisfaction of psychological needs that influence athlete's motivation and behavior (Deci & Ryan, 2014).

For athletes, fulfilment of these needs shapes their performance (Cox, 2005) and satisfaction about their role in sports in general (Ryan & Deci, 2002), but also affects their motivation to do sports (Rocchi, Pelletier, & Couture, 2013). In line with Self-Determination Theory (Deci & Ryan, 2014) satisfaction of the basic needs facilitate internalization process - the process of integration of the reasons why an athlete does sports. Their satisfaction thereby leads to development of intrinsic motivation for sports and participation in sports (Deci & Ryan, 2014).

*Motivational Climate: The Coach and the Teammates*

Motivational climate represents a situational context of motivation. It has a situational character because it refers to perceiving and reacting to expectations of others (Vazou, Ntoumanis, & Duda, 2006), and interpreting their behavior, as well as messages they have sent directly or indirectly. Behaviors and cues from others form goal orientation that determines the way one gets involved in activity, as well as the purpose of taking an active role.

According to author Ames (Ames, 1992), there are two types of motivational climate: ego- or task-involving motivational climate. Task-involving motivational climate encourages effort and appreciates behaviors directed at personal development of skills, and mastering assignments

with dedication and commitment. Social support plays an important role in this climate, nurturing interpersonal relationships. On the other hand, ego-involving motivational climate is directed towards achievement, where being "the best" is more important than learning and developing. Within this climate, rivalry and criticisms are encouraged, as well as comparing scores with others and rejecting others if they are not successful.

Motivational climate in sports has a relevant role in understanding behavioral dynamics of an athlete. Through observational learning (Bandura, 1977) and internalization of values and behaviors from significant others, motivational climate contributes to the development of athlete's set of values, and affects the way he perceives and develops interpersonal relationships within the sport context.

In young athlete's life, motivational climate in sports can be directly connected to satisfaction of their basic needs (Anshel & Mansouri, 2005; de Bruin et al., 2009; Carr & Wyon, 2003; Queded & Duda, 2010; Smith et al., 2007; van Staden et al., 2009). Self-Determination Theory (Deci & Ryan, 2014) emphasize that there are number of social and environment factors that affect the feeling of competence, relatedness and autonomy. Relevant social factors, in adolescence and youth sports particularly, are social agents as parents, coach and teammates. With age, parent's role in youth sports changes, athletes spend more time with coach and teammates (Alvarez et al., 2012), as new significant others in sports.

The coach has a role of an authority, but also as a mentor, someone who design practice, evaluates and develops athlete's skills, decides when and how his or hers talents will be used (Felton & Jowett, 2015). With his managing style, the coach creates ego- or task-involving motivational climate. Ego-involving managing style implies authoritarian relationship between the coach and players. Within ego-involving motivational climate, coach underlines high achievement players, emphasizes competition and social comparison between players. Evaluation of athlete's athletic development is normative-based, while reinforcement, support and attention are provided on the basis of ability level of the athlete. Unsuccessful attempts and mistakes are sanctioned.

Coach with task-involving orientation puts emphasis on the learning process. Athlete's progress is evaluated on his individual abilities and work. The coach-athlete relationship is democratic; providing social and emotional support is promoted. He

underlines effort, progress, cooperation, and commitment. In youth sports, coach's behavior represents significant social factor of satisfied basic psychological needs (Sarrazin et al., 2002).

During adolescence, peers gain more important role in adolescent's life (Erikson, 2008). In sports, peers are teammates with whom young athlete develops new interpersonal relationships on the basis of playing the same sports, but later on, on more personal basis. Just as the coach with his managing style contributes to the perceived motivational climate, teammates, together with their set of values and behaviors, shape motivational climate perceived by young athlete. In ego-involving motivational climate created by teammates, success is the merit of athlete value. Mistakes are sanctioned with rejection and negative comments. Group cohesion is low, cliques' rule as well as inter-team rivalry. Task-involving motivational climate created by teammates includes behaviors like: cooperation, social support, respect toward others, and appraisal of effort. Hard work and development of skills and techniques are positively evaluated.

Because task-involving motivational climate promotes progress, effort, and self-evaluation, it creates greater possibility to feel more competent (Sarrazin et al., 2002; Stein, Bloom, & Sabiston, 2012). Athletes internalize the sense of the achievement based on their own skills (Duda & Hall, 2000). That gives young athlete the sense of competence in sports, but also the sense of autonomy because achievement is viewed as self-referenced and in a control of the action of athlete (Duda, 2001). Development of perceived autonomy is more likely in task-involving motivational climate where initiative, and involvement in tasks are encouraged (Sarrazin et al., 2002). When evaluation of own abilities is self-referenced, athlete will have a greater sense of personal control, while normative-based evaluation shifts the perception of one's abilities and success to external locus of causality. In ego-involving motivational climate, because of the focus on the winning and achievement, athlete can have a sense of pressure to maintain high self-esteem and to be perceived as successful (Blanchard et al., 2009). Task-involving motivational climate created by coach and teammates leads to sense of belonging, which is very important for an adolescent athlete. Through support and acceptance, but also appreciation of hard work and cooperative learning, giving and receiving help from others, positive feedback, need for competence and relatedness are met (Smith, 2003; Vazou, Ntoumanis, & Duda,

2006). Social comparison and inter-team rivalry decrease team cohesion, and contribute to feeling of non-belonging. Highlighting the players who have the highest scores can shape athlete's perception about inner team roles and significance of his position and relationship with other players.

Social environment has an important role in satisfaction of basic psychological needs: need for competence, autonomy, and relatedness (Vesković, 2012). Satisfaction of these needs in sports leads to psychological well-being, better performance, motivation, and intention to stay in sports (Stark & Newton, 2014). In sports, coach and teammates are significant others for the young athlete and can create task- or ego-involving motivational climate that is directly connected to satisfaction of three basic needs in sports (Anshel & Mansouri, 2005; de Bruin et al., 2009; Carr & Wyon, 2003; Quested & Duda, 2010; Smith et al., 2007; van Staden et al., 2009). Large number of studies examined the role of adults in youth sports, with disregarding the effects of peer and teammates (Smith, 2003). Having in mind the importance of basic needs in sports, and the importance of interpersonal relationships in adolescence, this research analysis relations between athlete's perceived motivational climate created by coach and teammates and satisfaction of basic psychological needs in young Serbian female athletes. Based on earlier research and theoretical concept of Self-Determination Theory and Basic Needs Theory, we presume that athletes' perceived task-involving motivational climate created by coach, and teammates, will have significant predictive role of the satisfied basic psychological needs: need for competence, need for autonomy, and need for relatedness. During adolescence about 30% of athletes annually drop out of organized sport (Vella, Cliff, & Okely, 2014), and about 50% of girls drop out (Guillet et al., 2002). The worrying trend of girls who drop out of sports calls for better understanding of psychological process of young athlete, such as recognizing the factors that facilitate or undermine basic psychological needs relevant for sports participation (Stark & Newton, 2014).

## Method

Sample consisted of 192 young female athletes, with an age range of 12–17 years ( $M=13.63$ ) who play volleyball ( $n=66$ ), basketball ( $n=68$ ), and handball ( $n=58$ ) in clubs from Vojvodina (an autonomous province of Serbia, located in the northern part of the

country). They've been training the same sports in the same club for 38 months on average. Data was collected during spring of 2017. Participants were from towns Novi Sad (n=71), Zrenjanin (n=15), Sombor (n=24), Kikinda (n=30), Ruma (n=22), Apatin (n=17), and Crvenka (n=13). Questionnaires were distributed by a psychologist, with parents and managements' permission.

For the purpose of this research questionnaires such as Peer Motivational Climate in Youth Sport - MCYSQ (Ntoumanis & Vazou, 2005), Perceived Motivational Climate in Sport Questionnaire-2 - PMCSQ-2 (Newton, Duda & Yin, 2000), and the Basic Need Satisfaction in Sport Scale (BNSSS, Ng, Losdale, & Hodge, 2011) were translated into Serbian and applied. Written permission from the authors of the questionnaires was previously obtained.

Peer Motivational Climate in Youth Sport Questionnaire - MCYSQ (Ntoumanis & Vazou, 2005) is based on the Achievement Goal Theory, and original questionnaire singles out 5 subscales that are equivalent to the ego- and task-involving motivational climate created by teammates. The original questionnaire consists of 21 items. Preliminary psychometric analysis of the questionnaire, on Serbian sample of adolescent athletes, showed that items 14 („Want to be with the most able teammates“), 18 („Care about everyone's opinion“) and 20 („Laugh at their teammates when they make mistakes“) should be excluded from further analysis because of the projection on several factors with similar saturation. Items 15 („Praise their teammates who try hard“) and 17 („Are pleased when their teammates try hard“) formed one factor, which is why they were excluded from further research. (For more details see Trbojević, 2018). The final version of the questionnaire used in this research is made up of 16 items that form two factors: ego (seven items,  $\alpha=.81$ ) and task (nine items,  $\alpha=.89$ ) involving motivational climate created by teammates. The athletes estimated on a five-point scale certain behaviors and values of teammates. Score for each subscale was calculated as a sum of scores of items that form a subscale.

Perceived Motivational Climate in Sport Questionnaire-2 - PMCSQ-2 (Newton, Duda & Yin, 2000) consists of 33 items focused at the perception of the athlete about the motivational climate created by the coach. The original structure of the questionnaire has 6 subscales that are equivalent to ego- and task-involving motivational climate. On pilot sample, psychometric characteristics of the

questionnaire, translated into Serbian, were analyzed. From original 30 items, 20 items were selected that measure athlete's perception of the coach's behavior. Further results of factor analysis showed that items 5 („On this team, the coach praises players only when they outplay teammates“), 9 („On this team, players are encouraged to outplay other players“) and 19 („On this team, the coach teaches us how to 'work together' as a team. “) should be excluded because they project on several factor with similar saturation; and item 16 („On this team, coach approves when players are 'psyched' when they do better than their teammates in a game“) because of the low communality value ( $<.30$ ). Items 17 („On this team, the coach emphasizes always trying your best“) and 18 „On this team, players are encouraged to work on their weaknesses“) alone formed one factor, which is why they were excluded. The final version of the questionnaire used in this research consists of 14 items that form three factors: Unequal treatment (three items,  $\alpha=.73$ ), Punishment for mistakes (four items,  $\alpha=.74$ ), which correspond to the ego-involving motivational climate, and Task-involving (seven items,  $\alpha=.76$ ) motivational climate. The athletes estimated behaviors and values of the coach on a five-point scale. (For more details see Trbojević, 2018). Score for each subscale was calculated as a sum of scores of items that form a subscale.

Basic Need Satisfaction in Sport Scale - BNSSS (Ng, Losdale, & Hodge, 2011) is based on the theoretical framework of Self-Determination Theory and was developed to measure basic psychological needs in sports: the need for autonomy, competence and relatedness. The original scale consists of five subscales: Competence, Relatedness and three subscales that form Autonomy (Autonomy-Choice, Autonomy-IPLOC, Autonomy-Violation). Questionnaire includes 20 items. On the basis of the preliminary factor analysis of the questionnaire on Serbian sample of adolescent athletes, items 2 („In my sport, I feel I am pursuing goals that are my own“), 15 („In my sport, I really have a sense of wanting to be there“) and 16 („In my sport, I feel I am doing what I want to be doing“) were excluded, having in mind that they have projected on several factors with similar saturation. Also, item 5 („In my sport, I feel that I am being forced to do things that I don't want to do“) was excluded from further analysis because of the low communality ( $<.30$ ). Items 3 („I feel I participate in my sport willingly“) and 8 („I choose to participate in my sport according to my own free will“) were excluded because they alone formed one factor, and item 4 („In my sport, I get

opportunities to make choices“) was excluded because of the low reliability value. Final version of the questionnaire consisted from 13 items that form three factors: Competence (five items,  $\alpha=.79$ ), Relatedness (five items,  $\alpha=.69$ ), and Autonomy-Choice (three items,  $\alpha=.71$ ). The athletes estimated to what extent they agree with certain statements on a five-point scale. Score for each subscale was calculated as a mean score of five items (for Competence and Relatedness) and mean score of three items (for Autonomy-Choice) as authors of the questionnaire suggested (Ng, Losdale, & Hodge, 2011) (For more details see Trbojević, 2018).

## Results

Results of descriptive analysis show that participants achieve high scores on subscales Competence and Relatedness; and subscales Task-involving motivational climate created by coach and Task-involving motivational climate created by teammates (Table 1).

**Table 1.** Descriptive statistics

Variable	N	M	SD	MIN	MAX
Competence	182	4.481	.520	2.60	5.00 (5)
Autonomy-Choice	185	3.795	.918	1.00	5.00 (5)
Relatedness	187	4.579	.507	3.00	5.00 (5)
Task-involving motivational climate created by teammates	177	38.491	6.680	18.00	45.00 (45)
Ego-involving motivational climate created by teammates	176	16.432	6.573	7.00	33.00 (35)
Task-involving motivational climate created by coach	177	32.593	3.189	15.00	35.00 (35)
Punishment for mistakes	185	11.368	3.729	4.00	18.00 (20)
Unequal treatment by coach	187	6.262	3.140	3.00	15.00 (15)

( ) – theoretical average scores based on the structure of the questionnaire and number of items.

In order to examine the role of perceived motivational climate created by coach and teammates on the satisfaction of basic psychological needs of young athletes, regression analysis was conducted. Task-involving motivational climate created by coach, Unequal treatment by coach, Punishment for

mistakes, Task-involving and Ego-involving motivational climate created by teammates were entered in a model as predictors, while three basic psychological needs (Competence, Relatedness, and Autonomy-Choice) as criteria variables.

**Table 2.** Results of regression analysis

		Sum of Squares	Mean square	F (5)	p	Adjusted R <sup>2</sup>	R <sup>2</sup>
Model	Competence	41.131	8.226	10.410	.000	.198	.219
	Autonomy-Choice	21.982	4.396	4.379	.001	.055	.105
	Relatedness	60.509	12.102	20.497	.000	.244	.355

Results of regression analysis show that this model is statistically significant for all three psychological needs, and that it explains for Competence 21.9%, for Autonomy-Choice 10.5%,

and for Relatedness 35.5% of variance (Table 2). Specifically, for need for Competence and Relatedness, Task-involving motivational climate created by teammates and coach singled out as

significant predictors (Table 3). For need for Autonomy, Task-involving motivational climate created by teammates singled out as significant

predictor (Table 3). Directions of standardized coefficients of predictors are positive.

**Table 3.** Standardized coefficients of predictors

		$\beta$	Std. Error	t	p
Competence	TO* coach	.294	.093	3.623	.000
	Unequal treatment by coach	-.050	.082	-.607	.545
	Punishment for mistakes	.027	.067	.402	.688
	TO teammates	.206	.091	2.348	.020
	EO** teammates	.000	.080	.003	.998
Autonomy-Choice	TO coach	.110	.105	1.265	.207
	Unequal treatment by coach	.075	.092	.860	.391
	Punishment for mistakes	-.116	.076	-1.609	.109
	TO teammates	.292	.103	3.111	.002
	EO teammates	.095	.091	1.072	.285
Relatedness	TO coach	.315	.081	4.275	.000
	Unequal treatment by coach	.034	.071	.456	.649
	Punishment for mistakes	.038	.058	.623	.534
	TO teammates	.367	.079	4.600	.000
	EO teammates	-.028	.069	-.371	.711

Note: TO-task-involving motivational climate \*\*EO-ego-involving motivational climate

## Discussion

Basic psychological needs, need for competence, relatedness, and autonomy, have a relevant role in athlete's life. They are mediators of athlete's motivation and further participation in sports (Adie, Ntoumanis, & Duda, 2008), but also significant factors that contribute to athlete's mental health (Deci et al., 2001; Stark & Newton, 2014) and sport achievement (Cox, 2005). During adolescence these needs are highlighted, and adolescents strive to satisfied them in different social contexts. Youth sport is one of the most popular activity for adolescents, and represents first step toward the professional sports. From youth sports, talented and perspective athletes are chosen for elite sports. However, during adolescence there is a high trend of dropping out of sports (Vella, Cliff, & Okely, 2014), which influences the selection process, but the sport itself. Girls are at higher risk of dropping out of sports (Guillet et al., 2002), which is why it is important to investigate factor that facilitate or underline basic psychological needs of female athletes. This research examines the role of situational factors on the satisfaction of basic psychological needs of young Serbian female athletes. More specifically, we examined the relationship between perceived motivational climate created by coach and teammates

and satisfaction of basic psychological needs. Earlier research has focused on the effect of adults on motivational and behavioral outcomes of young athletes (Smith, 2003). But, during adolescence peers gain more important role in the psychological development (Erikson, 2008). Teammates represent the peer group within the sport context.

Serbian female athletes achieve high scores on subscales regarding task-involving motivational climate (Table 1). It seems that they perceive that coach and teammates create more task-involving motivational climate, which is in line with previous research (Vazou, Ntoumanis, & Duda, 2006). Socialization of young girls differs from boys, because main focus is on development of emotional and social skills, and not on competing. In sports, training process for girls differs in the same way. Boys are encouraged and directed toward development of motoric skills from early age, while girls are more often limited by social environment to experiment with movement (like jumping, running) (Vealey & Chase, 2016). Inter-team rivalry is more emphasized within boys, than girls, where boys are more exposed to higher pressure to achieve success (Vealey & Chase, 2016).

In the sample of Serbian female athletes, coach and teammates both contribute to satisfied need for competence, autonomy and relatedness. Specifically,

in line with our assumptions, task-involving motivational climate contributes more to the satisfaction of basic psychological needs in sport, than ego-involving motivational climate. These results are in line with previous research (Anshel & Mansouri, 2005; de Bruin et al., 2009; Carr & Wyon, 2003; Quested & Duda, 2010; Smith et al., 2007; van Staden et al., 2009). Female athletes have a greater sense of competence and relatedness in sport if the coach and teammates, both, create task-involving motivational climate. However, teammates have greater role than the coach for feeling in control about activities and choices in sports (Table 3). In this sample, teammates have a greater role in satisfaction of the need for autonomy (Table 3). Coach who creates task-involving motivational climate contributes to the satisfaction of the need for autonomy, but teammates have a stronger effect. Acceptance by teammates, shapes young athlete's perception about authority, but also about his own autonomy in sports (Smith, 2003). The coach has a two-way role: as an authority that can shape motivational climate created by teammates with his own behavior; and as a significant other that shapes his own motivational climate (Felton & Jowet, 2015). As an adult, the coach represents a qualified figure that evaluates and develops skills of an athlete, but simultaneously, he is the adult who represents attachment figure for the athlete, and gives much needed support (Felton & Jowet, 2015). Teammates represent peer social group in youth sports. The group sets values and behaviors that are evaluated as significant. When there is group cohesion, social and emotional support between the teammates, athletes will have a greater sense of possibility to choose without the fear of rejection. The relationship between teammates in task-involving climate is horizontal, there is no hierarchy, and each member is equal. Coach-athlete relationship is vertical; coach is an authority figure. When we look at individual coefficients of predictors (Table 3), we can see that coach's task-involving motivation climate has a slightly higher beta-coefficient than teammates when need for competence is in question. Having in mind the role of the coach in youth sports, it is possible that female athletes perceive coach's behavior as more important for self-evaluation of sporting competence, and teammates behavior for sense of belonging and perception of control in decision making process. These assumptions should be tested in a larger sample, and compared with elite athletes in order to see if the effect of coach's behavior, and teammate's, changes over time.

Both coach and teammates are significant figures in youth sport. They are models, but also newly founded relationships which an adolescent depends on. When they form task-involving motivational climate, the adolescent has a social environment that is directed toward him/her and his/her need. From that kind of climate, young athletes can develop intrinsic motivation that is connected to intention to continue doing sports, but also with higher achievement and performance (Sol Alvarez et al., 2012). Limitations of this research could be the testing conditions. Some athletes completed test after the training and on the floor of the locker rooms, which can affect the motivation to fill out questionnaires and the responses itself. These results should be taken as preliminary in the research area of youth sports in Serbia. Questionnaires for adolescent athletes should be taken under revisions, and adapted to Serbian context in order to achieve better psychometric results and more reliable instruments.

Bearing in mind that during adolescence about 20% to 30% of young athletes annually drop out of sports (Vella, Cliff, & Okely, 2014), and about 50% of girls (Guillet et al., 2002) defining and investigating factors that contribute to satisfaction of basic needs in sports are first steps towards prevention of dropping out of sport. Understanding the process underneath the basic needs can be significant for coaches that work with young athletes in order to modify their approach and training process, so they can help develop full potential of the athlete. Future research should take into account male athletes, as well as athletes from individual sports in order to create theoretical, but also practical grounds for working with young athletes.

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