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The Sports Motivation and Biological Maturity on The Perception of Coaching Behaviors in Young Male Football Players

Genç Erkek Futbolcularda Koçluk Davranışlarının Algılanmasında Spor Motivasyonu ve Biyolojik Maturite

Raziye DUT[1], Ozhan YALCIN[2], Ozge TORUN[3], Bulent BAYRAKTAR[4]

[1] *Health Sciences University, Istanbul Training and Research Hospital, Istanbul, Turkey.*

[2] *Bakirkoy Psychiatry, Neurology and Neurosurgery Trainee and Research Hospital, Istanbul, Turkey.*

[3] *Family Medicine, 30th August Family Health Center, Istanbul, Turkey.*

[4] *Department of Sports Medicine, Istanbul University, Faculty of Medicine, Istanbul, Turkey.*

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ABSTRACT: Reciprocal interactions between the motivation of athletes and behaviors of the coaches can be affected by the age and sexual development of athletes. This study aimed to evaluate the interaction between sports motivation of adolescents football players and the perception of coaches' behaviors. Registered Turkish Football Association infrastructure male football players aged 10-19 years were enrolled. And for this survey study, The Sports Motivational Questionnaire (adolescent form) and Leadership for Sports Scale (LSS) were used for data collection. The age of commencing amateur football and the position of the athlete on the football field had no significant effect on the understanding of coach behaviors. However, the chronologic age, stage of adolescence, and sexual development had effects on sports motivation and perception of coach behaviors. Sports motivation of adolescents was getting higher in the early and middle adolescent stages and reducing through the later stages. Also, as the age and Tanner stage of the football players increased, the perceptions of the coaches concerning educational attainment, democratic behavior, social support, and positive feedback behavior was decreasing. Early and middle adolescent stages are more critical periods of increasing adolescent male football players' sports motivation for achieving a persisting effect on the lifelong sportive healthy life style.

Keywords: adolescent, male, football, motivation, perception.

ÖZ: Sporcuların motivasyonu ile antrenörlerin davranışları arasındaki karşılıklı etkileşimler sporcuların yaşı ve cinsel gelişiminden etkilenebilir. Bu çalışmada, ergen futbolcuların spor motivasyonu ile antrenörlerin davranışları arasındaki etkileşimin değerlendirilmesi amaçlanmıştır. Türkiye Futbol Federasyonuna kayıtlı 10-19yaş, erkek futbolcular değerlendirildi. Spor Motivayon Anketi (SMA)(ergen formu) ve Spor İçin Liderlik Ölçeği (SLÖ) ile veri toplanmıştır. Amatör futbol oynamaya başlama yaşı ve sporcunun sahadaki oyun pozisyonu; antrenör davranışlarının algılanması üzerinde önemli bir etkiye sahip değildi. Ancak; kronolojik yaş, ergenlik dönemi ve cinsel gelişim evresi spor motivasyonu ve antrenör davranışlarının algılanması üzerinde etkili bulunmuştur. Ergenlerin spor motivasyonu erken ve orta ergenlik dönemlerinde artmakta, geç ergenlik döneminde azalmakta idi. Ayrıca, futbolcuların yaşları ve Tanner cinsel gelişim evresi ilerledikçe antrenörlerinin demokratik davranış, sosyal destek ve olumlu geribildirim gibi eğitim davranışlarına ilişkin algılarının azaldığı görüldü. Erken ve orta ergenlik dönemleri, ergen futbolcuların yaşam boyu sportif hayatlarında kalıcı bir etki elde etmek için spor motivasyonlarını arttırmanın kritik dönemlerdir.

Anahtar Kelimeler: adölesan, erkek, futbol, motivasyon, algı.

1. INTRODUCTION

The acquisition of a sportive healthy lifestyle and exercise habits begins during childhood. Children who have supportive and encouraging families, parents, teachers, and coaches have higher motivation and drive for attending sports than others (Weiss, 1993). Motivation can be defined as "prompting and activating force," and also may equal to attitudes and behaviors for achieving a goal (Aidan, 2004).

In sports environments, the trainer or coach strives for developing and improving the physical, social, and psychological abilities of the athletes. The branch of the sport, demographic properties of the trainer, as well as the features of athletes such as age, gender, skills, and psychological peculiarities may have significant influences on success (Chelladurai, 1990). The adolescence is a phase of physical, cognitive, and social maturation between childhood and adulthood, which affects the understanding of the trainer attitudes and behaviors (Lerner & Steinberg, 2009).

Corresponding Author: *Raziye DUT, raziyemektup@yahoo.com*

Adolescence starts with the onset of puberty and is therefore marked by dramatic changes in hormonal activity and physical appearance. During this period, the adolescent experiences various changes in social, academic, and other environmental influences, entering a stage of significant psychological transition (Choudhury, 2010). Adolescents experience cognitive, psychosocial and physical maturation. Adolescence is a period in which there is an excessive desire for being accepted, self-proof, being liked, and getting popular. At this critical stage, many adolescents are enrolled in recreational or competitive sports programs under the supervision of a coach. It is crucial for coaches to have the knowledge about the features of the developmental stages and motivation of the athletes to use the motivation strategies and select suitable pieces of training for individual athletes (Schneider & Baker, 2006). The purpose of this study was to evaluate the interactions between the adolescent developmental stages, Tanner stages with sports motivation, and the perceptions of leadership behavior.

2. METHOD

2.1. Study Design

A survey study was conducted. The research was carried out at the end of 2016-2017 league seasons on the seven infrastructure teams of the clubs. Participants filled the surveys during the sports facilities. Ethical approval of the study was obtained from Istanbul University, Istanbul Medical Faculty Ethics Committee.

2.2. Participants

The participants of the study were male adolescent football players playing in the different infrastructure teams of the Turkish Super League. 554 adolescent male football players voluntary to participate composed the study sample. All participants and one of their parents signed the informed consent form.

2.3. Data Sources/Measurement

A demographic data form, Sports Motivational Questionnaire (adolescent form) (SMQ), and Leadership for Sports Scale (LSS) were filled by all participants. The name of the subjects was not written on the forms and questionnaires. The participants were instructed to be realistic for filling the forms and surveys. Also, they were informed that their names and personal data would not be shared with readers, club members, and coaches. Following the guidelines of the Fédération Internationale de Football Association (FIFA), since 1997, the 1st of January is the start of the selection year, and this, therefore, is the cut-off date for the soccer competition year. Thus, January would be the first month of the selection year, and December the last. Therefore, players located in quartile 1 (Q1) are those born between January and March, in quartile 2 (Q2) from April to June, in quartile 3 (Q3) from July to September, and in quartile 4 (Q4) from October to December (Praxedes, Moreno, Garcia-Gonzalez, Pizarro, & Del Villar, 2017).

2.4. Adolescent Development Status

The adolescent development status was determined in three phases: early adolescence (10 to 13 years of age), middle adolescence (14 to 16 years of age), and late adolescence (17 to 20 years of age) (Holland & Burstein, 2016). SMR (popularly known as Tanner staging) are used to describe the progression of secondary sexual characteristics in adolescence, regardless of chronologic age (Daniel & Palshock, 1979). Tanner staging from 1 to 5 is based on testicular and penile development and appearance of pubic hair (Daniel & Palshock, 1979; Marshall & Tanner, 1970). The Children's Puberty Levels Form of the Hacettepe University Ihsan Dogramaci Hospital with pictorials was applied and recorded.

SMQ is a questionnaire enlighting the direction of the motive for participating and maintaining sports and revealing the prominent motives and impulses structuring and forming the behaviors regarding sports. The SMQ was developed by Pelletier et al. (Pelletier et al., 1995). The Turkish validation and reliability of the questionnaire were carried out by Kazak (Kazak, 2004). The Turkish validation and reliability study of the SMQ-adolescent form was made by Kazak and Cetinkalp (Kazak, Çetinkalp, & Altıntaş, 2012).

This scale was developed by Chelladurai ve Saleh based and grounded on the multi-structural and multidimensional leadership model (Chelladurai & Saleh, 1980). The LSS was adapted to Turkish by Toros and Tiryaki (Toros, 2006). The Turkish adaptation of "the athlete's perception of the coaching behavior" version of the LSS was conducted by various researchers (Altıntaş, Çetinkalp, & Aşçı, 2012; Güngörmüş, Gürbüz, & Yenel, 2008; Unutmaz & Gençer, 2014). The "athlete's perception of the coaching behavior" version of the LSS was used in this research.

2.5. Statistical Analysis

Numerical data with normal distribution were presented as the mean and standard deviation, while skewed data were shown as median (min.-max.). Categorical variables were given as frequencies and percentages. For comparing two numerical variables we used the Student's t-test or Mann-Whitney U test, depending on meeting parametric assumptions. For comparing more than two groups, we used the one way ANOVA or Kruskal-Wallis test. The Pearson or Spearman correlation tests were used to check for correlations between variables. A linear regression analysis was carried out to determine risk factors which may affect the perception of trainer behaviors by the athletes. Variables with a $p<0.1$ in the univariate comparisons were added to the model. The SPSS v21 statistics program was used for statistical analysis with a significance threshold $p<0.05$.

3. RESULTS

Totally the aged was 14.4±1.8 and 554 adolescent male football players were included. Demographic and clinical features of the sample are shown in Table 1.

Table 1. Demographic features

Variables	**n**	**$\bar{x}$ ±sd**
Age (year)	554	14.4±1.8
Body Weight (kg)	554	58.1±12.0
Height (cm)	554	169.6±10.5
BMI (kg/m^2)	554	19.9±2.4
Amateur football age (year)	554	8.7±2.1
Game played	554	21.9±10.5
Age Quartiles	**n**	**%**
Q1	232	41.9
Q2	158	28.5
Q3	117	21.1
Q4	47	8.5
Adolescent Development Stages	**n**	**%**
Early	182	32.9
Middle	208	37.5
Late	164	29.6
Tanner Stages	**n**	**%**
I	32	5.8
II	73	13.2
III	198	35.7
IV	204	36.8
V	47	8.5
Playing Positions	**n**	**%**
Goalkeeper	47	8.5
Defender	186	33.8
Midfielder	220	39.9
Striker	98	17.8

BMI: Body mass index. **Game played:** Total number of active participations in competitions during the last season.

The position of the player on the field was not affecting the LSS scores (training and instruction subscale p=0.610; democratic behavior p=0.645; autocratic behavior p=0.423; social support p=0.419; positive feedback p=0.761). The athletes in the Q1 group perceived their coaches more instructive and didactic according to "training and instruction subscale of the LSS" (p=0.040) and more autocratic (p=0.009) than the athletes in the other quartiles. However, there was no statistically significant difference between all quartile groups regarding the democratic behavior (p=0.508), social support behavior (p=0.755), and positive feedback (p=0.973) of the coaches. The scores of LSS and SMQ are demonstrated in Table2.

Table 2. Mean scores of the subscales of SMQ and LSS

LSS	**n**	**%**
Training and instruction	551	3.8±0.4
Democratic	550	3.7±0.6
Autocratic	548	2.7±0.7
Social support	548	3.8±0.5
Positive feedback	550	3.6±0.6
SMQ	**n**	**%**
Amotivated	550	1.6±0.8
External	545	4.0±1.6
Identificational	551	3.9±1.7
Internal	547	5.1±1.1

sd: Standard deviation, **SMQ:** Sports Motivational Questionnaire, **LSS:** Leadership Scale for Sport

The negative correlation was found between the chronologic age and training/instruction (r=-0.171, p<0.001), democratic behavior subscale scores (r=-0.243, p<0.001), whereas chronologic age was not related with social support subscale (p=0.755), autocratic behavior (r=0.074, p=0.083) and positive feedback subscale scores (r=-0.073, p=0.086) of the LSS. There was no difference between LSS scores regarding the Tanner stages (Table 3).

Table 3. SMQ and LSS profile of the sample compared by Tanner stages

	Tanner Stages					
	I(n=32)	**II(n=73)**	**III (n=198)**	**I (n=204)**	**V(n=47)**	
	x̄ ±sd	**x̄ ±sd**	**x̄ ±sd**	**x̄ ±sd**	**x̄ ±sd**	**p**
LSS						
Training and instruction	4.1±0.4	3.9±0.4	3.8±0.4	3.9±0.4	3.8±0.4	.048
Democratic	4.0±0.6	4.1±0.7	3.8±0.6	3.6±0.6	3.6±0.4	<.001*
Autocratic	2.8±0.7	2.8±0.7	2.8±0.7	2.8±0.6	2.8±0.6	.138
Social Support	4.1±0.5	4.1±0.6	4.0±0.5	3.8±0.5	4.0±0.5	.019
Positive feedback	3.6±0.7	3.8±0.5	3.6±0.6	3.6±0.7	3.8±0.6	.300
SMQ						
Amotivated	2.0±1.1	1.7±0.8	1.5±0.7	1.6±0.8	1.9±0.8	.001*
External	4.9±1.3	4.8±1.5	4.1±1.6	3.7±1.6	3.9±1.4	<.001
Identificational	5.1±1.6	5.1±1.5	3.8±1.6	3.6±1.7	3.3±1.5	<.001
Internal	5.5±0.9	5.5±1.0	4.9±1.1	4.9±1.1	5.2±1.2	.001

sd: Standard deviation, **SMQ:** Sports Motivational Questionnaire, **LSS:** Leadership scale for sport

The adolescent developmental stages were affecting training and instruction, democratic, social support, and positive feedback, but not affecting autocratic behavior subscale scores (Table 4).

Table 4. Comparison of the mean SMQ and LSS scores according to the adolescent developmental stages

	Adolescent Development Stage			
	Early(n=182)	Middle(n=208)	Late(n=164)	p
	x̄ ±sd	x̄ ±sd	x̄ ±sd	
LSS				
Training and instruction	3.9±0.4	3.9±0.4	3.7±0.4	<.001
Democratic	3.9±0.6	3.8±0.6	3.5±0.5	<.001
Autocratic	2.7±0.7	2.7±0.6	2.8±0.6	.172
Social support	3.9±0.5	3.9±0.5	3.7±0.5	<.001
Positive feedback	3.7±0.6	3.8±0.6	3.5±0.7	<.001
SMQ				
Amotivated	1.6±0.9	1.6±0.8	1.7±0.8	.700
External	4.2±1.7	4.2±1.5	3.7±1.6	.004
Identificational	4.7±1.6	3.8±1.6	3.2±1.7	<.001
Internal	5.3±1.0	5.1±1.2	4.8±1.2	.001

sd: Standard deviation, **F=** One Way ANOVA, *****Kruskal Wallis H

3.1. Sports Motivational Questionnaire (SMQ)

Although we could not find a correlation between chronological age and amotivation *(r=0.078, p=0.069)* but, there was negative correlation between chronological age and external *(r=-0.147, p=0.001),* identified *(r=-0.363, p<0.001),* and internal *(r=-0.173, p<0.001)* motivations. There was no correlation between the number of competitions in the previous year and amotivation *(r=-0.061, p=0.174)* or identified motivation (r=-0.016, p=0.718). However, a negative correlation was found between the number of competitions in the previous year and external *(r=-0.123, p=0.006)* or internal *(r=-0.099, p=0.027)* motivation.

When the SMQ subscale scores were compared regarding the age quartiles, there was no difference between groups (p>0.05). Amotivation (p=0.700) was not different for adolescent development stages but external stimulation in mid-adolescence period (p=0.004), identified (p<0.001) and internal (p=0.001) motivation in early adolescence period were higher (Table 4). A negative correlation between the age of starting amateur football and external stimulation (r=-0.141, p=0.001) was found but there was no correlation between the age of starting amateur football and amotivation (r=-0.023, p=0.601) or internal (r=-0.058, p=0.182) and identified (r=-0.069, p=0.111) motivation. External (mean=4.2±1.6, p<0.001) and identified motivation (mean=4.3±1.6, p<0.001) was higher. However, amotivation (mean=1.4±0.7, p=0.023) was lower in athletes with early adolescence having Tanner stage 3.

Although in the mid-adolescence period the Tanner stage seemed to have no effect on amotivation (p=0.773) but athletes having Tanner stage 4 had higher external (mean=3.9±1.5, p=0.003), identified (mean=3.5±1.2, p=0.001), and internal (mean=5.0±1.1, p=0.013) motivation. In the late adolescence period, athletes in the Tanner stage 5 had higher amotivation (mean=2.0±0.9, p=0.037), whereas in this period, the Tanner stages did not seem to affect external (p=0.672), identified (p=0.118), and internal (p=0.371) motivation.

3.2. Correlations between Sports Motivational Questionnaire (SMQ) and Leadership Scale for Sports (LSS)

There was negative correlation between amotivation and training/instruction behaviors *(r=-0.168, p<0.001),* positive feedback subscale scores *(r=-0.117, p=0.006)* and positive correlation with autocratic behavior scores *(r=0.155, p<0.001).* There was positive correlation between external motivation and training/instruction subscale scores *(r=0.116, p=0.007),* democratic *(r=0.127, p=0.003),* autocratic *(r=0.088, p=0.040),* social support *(r=0.167, p<0.001),* and positive feedback *(r=0.138, p=0.001)* subscale scores. Although there was no relation between identified motivation and autocratic subscale scores *(r=0.015, p=0.724),* there was positive correlation between identified motivation and training/instruction *(r=0.090, p=0.035),* democratic *(r=0.148, p<0.001),* social support *(r=0.178, p<0.001),* and positive feedback *(r=0.100, p=0.019)* subscale scores. Also, we found positive correlations between internal motivation and training/instruction *(r=0.185, p<0.001),* democratic behavior *(r=0.141, p=0.001),* social support behavior *(r=0.171, p<0.001),* and positive feedback behavior scores *(r=0.181, p<0.001)* of the leadership, whereas there was no relationship between internal motivation and autocratic behavior subscale scores *(r=0.047, p=0.277).*

4. DISCUSSION

The quality of relationships in sports has a big influence on the motivation for being physically active, participating in sports, helping individuals to cope with stress, isolation, and anxiety, as well as the development of self-esteem (Carr, 2012). The coach plays an integral role in the success of his athletes and teams, influencing factors such as self-esteem, sports performance satisfaction, as well as performance outcomes (Sharma & Shrivastava, 2016). In fact, different coaching behaviors might be observed in athletes at the same age category but with different biological and development stages. Every athlete is different, changing from early to late adolescence and from Tanner stage 1 thru 5, who might be totally amotivated or have internal motivation. Physical and psychological variables influence the perception of coaching behaviors, which may affect the development of athletes' satisfaction, sports withdrawal, increased internal motivation, and overall success. The preferred coaching behavior of athletes might be different in team games, individual games, and combat games (Sharma & Shrivastava, 2016). One study demonstrated that football players preferred positive feedback, training/instruction, and democratic leadership behaviors, but did not like social support and autocratic behaviors (Sherman, Fuller, & Speed, 2000). One study demonstrated that football players preferred positive feedback, training/instruction, and democratic leadership behaviors, but did not like social support and autocratic behaviors (Riemer & Chelladurai, 1995). We could not find any relationship between the position of the football players and LSS scores. However, the training/instruction, democratic, social support, and positive feedback by the athletes were decreasing with the increasing age, especially in the late adolescence.

In early and middle adolescent stages, the anti-authoritarian attitudes are increasing, while during the late stages of the adolescence individuals are expected generally to behave more mature. However, in modern society, the adolescent period is getting longer. Thus, the time of becoming a young adult shifts to middle twenties. As a result, youths in the late adolescence may have more problems with authority and uncompromising attitudes with other people.

Possibly, the more positive perception of the trainers in the early adolescence period may be related to our sample characteristics; the sample contains 10-11 years old children (Kuruoğlu, 2007). With the increasing age, trainers may be perceived as more didactic, non-supportive, and alienating. As a result, trainers working with late adolescents should behave more democratic, supportive, less punishing, and provide more positive feedback and praise (Gil et al., 2014; Holland & Burstein, 2016).

As the age increased, we observed that the external, internal, and identified motivation was decreasing. Additionally, the internal and identified motivation was higher during early adolescence, while the external motivation was higher in the mid-adolescent group. Identifications are stronger during the early adolescence. As the age approaches adulthood, identifications get introjected and digested, leading to distinct individual personality and self-structure and decreasing identified motivation with age (Kuruoğlu, 2007). Perhaps as the identity is not matured during the early adolescence, there is a higher need for identified motivation. As the age increases and identity matures, the individual's internal motivation comes into prominence holding down external stimulation such as rewards, punishments, and constraints. Athletes may need more external regulation and stimulation in the middle adolescence due to higher internal turmoil (Gil et al., 2014; Holland & Burstein, 2016).

In this study, the sexual developmental level during late adolescence was not affecting the SMQ scores. However, in the early adolescence, athletes in sexual developmental level 3 had higher external and identified motivation, while mid-adolescents at Tanner level 4 had higher external, internal, and identified motivation scores. During early adolescence cognitive development correlates more closely with the chronologic age, while psychosocial development correlates more strongly with the pubertal status and physical maturation. Besides, cognitive development is more biologically determined, while psychosocial development is subject to greater environmental and cultural influences. Additionally, the timing of pubertal changes can affect the psychosocial development and well-being. As a result, early-maturing males tend to have higher self-confidence, as well as, social and academic success, while later maturing males are at risk for more internalizing behaviors and diminished self-esteem (Holland & Burstein, 2016). Athletes in the Q1 group perceived their coaches more instructive, didactic, and autocratic. When the relative age effect is considered, athletes in the Q1 age quartile may be more successful and skillful; as a result, they may approach sports more seriously and as a possible professional career. Besides, as a result of their skillful manners, trainers may force them to become better (Gil et al., 2014). As adolescents tend to challenge the authority and generally have anti-autocratic attitudes, arrogant attitudes of the trainer may cause amotivation, or amotivated athletes perceive their trainers more authoritarian (Gil et al., 2014). This concept explains the negative correlation between amotivation and training/instruction and positive feedback scores, as well as the positive correlation between amotivation and autocratic subscale scores. It is not surprising that identified motivation is closely related to sports motivation or positive perceptions of the coach by the athletes. We may assume that autocratic behaviors or attitudes are not related to motivation in adolescent athletes.

As expected, if the trainer's positive feedback behavior is related to sports motivation, trainers should give more positive feedback rather than negative to lower the athletes' amotivated attitudes and behaviors. This approach also may increase self-esteem and self-satisfaction of the adolescent athletes. Besides, external motivation occurs under the influence of reinforcers and may affect the performance of the athlete either positive or negative (Doğan, 2005).

Coaches may also show interest in the extra-sportive activities of the athletes. If a coach cares the adolescent's problems of daily life, such as academic and peer issues, these attitudes would be perceived by the adolescent as socially supportive, and this, in turn, would increase the motivation of the athlete (Doğan, 2005). It seems that sports motivation occurs and gets distinct in early and middle adolescent stages. However, as the age increases, external, identified, internal motivation may decrease. It is important to determine and define the causes of this motivational loss. Interventions should be determined and applied to increase the motivation of the adolescent athletes. It can be suggested that adolescent football players in the same age period but different developmental levels be determined and effort given to motivate them permanently and sustainably.

Some limitations of this study are; the lack of a control group and psychiatric evaluations of the trainers and participants. We also did not consider the sports skills and performance of the football players during data analysis.

5. CONCLUSION

According to the findings of this study, adolescent development stages and sexual developmental level may influence the perception of trainers' attitudes and behaviors. While it was determined that perception of the trainer

behaviors and attitudes had been affected by the sports motivation of the adolescent athletes, sports motivation of the adolescent athletes was affecting the perception of trainer behaviors and attitudes as well.

Practical Applications

Trainers should consider the adolescents' physical, cognitive, and psychosocial developmental stage, and should support them to increase motivation. Chronologic age alone is not a guarantee that all adolescents will be at the same stage of physical, cognitive, and psychosocial development.

6. ETHICS STATEMENT

The ethic statement was approved by Istanbul University, 2017/202.

7. AUTHOR CONTRIBUTIONS

RD designed and wrote the research, OY collected data and revised, OT collected data and analyzed, BB designed and revised the research.

8. REFERENCES

Aidan, P. (2004). *Introduction to Psychology (in Turkish)*. Ankara: Meteksan.

Altıntaş A., Çetinkalp Z., & Aşçı H. (2012). E*valuating the Coach-Athlete Relationship: Validity and Reliability Study (in Turkish)*. Spor Bilimleri Dergisi, *23*, 119-128.

Carr S. (2012). Relationships and performance. In S. Murphy (Ed.), *The Oxford handbook of sport and performance psychology*. New York: Oxford University Press.

Chelladurai P. (1990). *Leadership in sports: A review.* Int J Sport Psychol, 21, 328-354.

Chelladurai P., & Saleh S D. (1980). *Dimensions of leader behavior in sports: Development of a leadership scale.* J Sport Psychol, 2, 34-45.

Choudhury S. (2010). *Culturing the adolescent brain: what can neuroscience learn from anthropology?* Soc Cogn Affect Neurosci, *5*(2-3), 159-167. doi:10.1093/scan/nsp030.

Daniel W A., & Palshock B Z. (1979). *A physician's guide to sexual maturity rating*. Patient Care, 30, 122-124.

Doğan O. (2005). *Sport psychology* (2nd Ed.). Adana: Nobel Publishing.

Gil S M., Badiola A., Bidaurrazaga-Letona I., Zabala-Lili J., Gravina L., Santos-Concejero J., Granados C. (2014). *Relationship between the relative age effect and anthropometry, maturity and performance in young soccer players.* Journal of Sport Sciences, 32, 479-486.

Güngörmüş H A., Gürbüz B., & Yenel F. (2008). *Evaluation of the psychometric properties of the "leadership scale for sports: athlete's perception of coach's behaviour (in Turkish).* Atatürk J Phys Educ Sport Sci, 10, 16-21.

Holland H C., & Burstein G R. (2016). A*dolescent Development. In R. M. Kliegman & B. Stanton (Eds.),* Nelson textbook of pediatrics (pp. 926-936): Elsevier Saunders.

Kazak Z. (2004). *A study on reliability and validity of the Sport Motivation Scale - SMS- for Turkish athletes.* Spor Bilimleri Dergisi, 15, 191-206.

Kazak Z., Çetinkalp F., Aşçı H., & Altıntaş A. (2012). *The Validity and Reliability Study of the Sport Motivation Scale's Adolescent Version*. Paper presented at the 2nd International Social Sciences In Physical Education And Sport Congress, Ankara, Turkey.

Kuruoğlu A Ç. (2007). *Adolescence period*. Pediatric and adolescent psychiatry. In A. Soykan Aysev & Y. Işık Taner (Eds.) (pp. 189-207). İstanbul: Janssen.

Lerner R M., & Steinberg L. (2009). *Individual bases of adolescent development.* In Handbook of adolescent psychology (Vol. 1). John Wiley & Sons,.

Marshall W A., & Tanner J M. (1970). *Variations in the pattern of pubertal changes in boys.* Arch Dis Child, 45(239), 13-23. doi:10.1136/adc.45.239.13.

Pelletier L G., Tuson K M., Fortier M S., Vallerand R J., Briere N M., & Blais M R. (1995). *Toward a New Measure of Intrinsic Motivation, Extrinsic Motivation, and Amotivation in Sports: The Sport Motivation Scale (SMS).* J Sport Exerc Psychol, 17, 35-53.

Praxedes A., Moreno A., Garcia-Gonzalez L., Pizarro D., & Del Villar F. (2017). *The Relative Age Effect on Soccer Players in Formative Stages with Different Sport Expertise Levels.* J Hum Kinet, 60, 167-173. doi:10.1515/hukin-2017-0100.

Riemer H A., & Chelladurai P. (1995). *Leadership and satisfaction in athletics*. J Sport Exerc Psychol, 17, 276-293.

Schneider R C., & Baker R E. (2006). *Obtaining maximum effort and results from your athletes through motivation.* Strategies, 19, 27-31.

Sharma R., & Shrivastava Y. (2016). *A Comparison of Preferred Leader Behaviour between Physical Education and Non-Physical Education Male Students.* Int J Sci Cult Sport, 4, 139-149.

Sherman C A., Fuller R., & Speed H D. (2000). *Gender Comparisons of Preferred Coaching Behaviors in Australian Sports.* Journal of Sport Behaviour, 23, 389-406.

Toros T. (2006). *Validity and Reliability Study of the Leadership Scale in Sports - Version of the Football Players' Perception of Coach Behaviors*. Paper presented at the 9th International Sports Science Congress, Muğla, Turkey.

Unutmaz V., & Gençer R T. (2014). *Investigating the Psychometric Properties of Leadership Scale for Sports -Athlete's Perception of Coach's Behavior (in Turkish).* CBÜ Beden Eğitimi ve Spor Bilim Dergisi, 7, 27-34.

Weiss M R. (1993). *Psychological effects of intensive sport participation on children and youth: Selfesteem and motivation.* In Intensive participation in children's sports: Human Kinetics.