

# Psychological and Anthropometric Characteristics of a Hungarian Elite Football Academy's Players

## Authors' contribution:

- A) conception and design of the study
- B) acquisition of data
- C) analysis and interpretation of data
- D) manuscript preparation
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## ABSTRACT

Due to the fact that neither physical nor physiological and anthropometric differences in adolescents can serve as definitive differentiating factors in terms of choosing successful and non-successful players, coaches are encouraged to focus more on the psychological characteristics of young players. Therefore, the purpose of this study was to examine football players' psychological skills in an elite football academy as related to age and position. Every young player at one of the most successful football academies in the country participated in this study (N=119, M=16.44±1.17). The sample was divided into four age groups according to the championship system (U16, U17, U18, U21), and into specific football positions (goalkeeper, defender, midfielder, and striker). Based on the results, the young academy football players had a low level of motivation (1.45±0.68), a high level of extrinsic motivation (5.96±0.64), and can be characterized with a higher level task (4.02±0.62) than ego orientation (3.01±0.62). All of the results for coping skills were in the mid-range (M=3.00-3.41). There were no differences in motivation, perceived motivational climate, and coping among the football players regarding their positions. However, there were significant differences among the age groups in perceived motivation and coping skills. Older players were more ego-oriented and had a higher level of peaking under pressure, while younger players demonstrated higher level task, ego, and coach ability levels. Football coaches need to focus less on positions and more on age differences when dealing with motivation, perceived motivation, and coping.

## KEYWORDS

Football academy, young players, psychological characteristics

## Introduction

It is of high importance to identify talented young football players so that long-term high quality training can be planned and ensured (Stratton et al., 2004; Vincze, 2009). Physical parameters, personality, character, and cognitive skills are considered to be among the most important predictive factors in football (Reilly, Williams & Richardson, 2003), so all of these areas should be taken into consideration during talent identification and development (Williams & Franks, 1998).

Clubs and national associations constantly focus on improving their talent identification, selection, and development programs. There seems to be a debate as to how well one can predict sport performance in football. It is reported that a young player's potential can objectively be measured and assessed through certain physical, cognitive, and psychological tests (Nideffer et al., 2001). In contrast, research has also

indicated that it is difficult to accurately predict expertise and long-term success at a young age (Morris, 2000; Reilly et al., 2000). Nevertheless, there are specific anthropometric, motor, and psychological attributes that undoubtedly aid coaches in talent identification and the optimal development of young football players (Hoare & Warr, 2000). Since neither physical nor physiological and anthropometric differences in adolescents can serve as definitive differentiating factors in terms of choosing successful and non-successful players (Carling et al. 2009), coaches are encouraged to focus more on young players' motor performances, technical, tactical, and cognitive skills, and, foremost, psychological characteristics (Williams & Reilly, 2000).

There is a strong relationship between motor performance and psychological factors (Caglar, 2009). Considering these psychological areas, high levels of persistence, dedication, and effort, as well as a supportive environment, are required to become an elite athlete (Géczi et al., 2009). Football players with a high level of intrinsic motivation are more likely to achieve success (Garcia-Mas et al., 2010). Optimal levels of motivation, motivational orientation, coping skills, and competitive anxiety are all essential factors for quality talent development (Géczi et al., 2009). Performance can be enhanced in an optimal way if players' abilities and psychological characteristics interact in a positive manner (Park, 2000).

When coaches provide players with a challenge in a given task and set optimal goals, the level of anxiety decreases and motivation increases (Bruce & Whitehouse, 1998). This is imperative in the coaching process because high levels of anxiety and stress have a clear negative impact on the performance of soccer players (Holt & Hogg 2002) and thus can prevent players from performing in their optimal zone (Géczi et al., 2008; Hanin, 1989).

In a sport environment, where the emphasis is on winning, rivalry, and comparisons among athletes, the motivational climate tends to be ego oriented (Duda, 1992). Ego-oriented athletes are mostly concerned with external sport participation motives, such as social status, recognition, and social comparisons (Çetinkalp & Turksoy, 2011). Successful football players are task oriented (Reilly et al., 2000) and are driven mostly by intrinsic motivational patterns, including skill development, skill mastery, and enjoyment (Jagacinski & Strickland, 2000). Task orientation is also related to moral functioning (Kavussanu & Ntoumanis, 2003), attitudes of sportsmanship (Duda, Olson & Templin, 1991), and respect (Lemyre, Roberts & Ommundsen, 2002).

Traditional means of talent identification and development programs may exclude late-maturing players (Unnithan et al., 2012) because they focus on successes at the youth level and struggle with maintaining motivation and enjoyment. One promising way to overcome these problems is through football academies because they provide important means both in identifying and systematically developing talent. Since football academies in most cases have the advantages of quality instruction and coaching, excellent training, and medical and social facilities (Ashworth & Heyndels, 2007), they have the potential to increase motivation and coping skills and prepare young players for a professional career (Nerland & Sæther, 2016). However, young academy players face a lot of physical, cognitive, and psychological challenges (Reeves, Nicholls & McKenna, 2009) and are required to meet high expectations on a daily basis from an early age (Richardson, Gilbourne & Littlewood, 2004).

### **Purpose of the study**

There is a clear pattern of research focusing on the influential role of achievement, motivation, goals, effort, persistence, and stress in contributing to development and high performance outcomes in football players (Boixadós et al., 2004). However, there is less data on how motivation and coping relate to young elite football players' ages and positions and how these psychological characteristics are manifested in football academies. The motor and physiological characteristics of young elite soccer players vary by age group, so it seems important to further study the age-related characteristics in different areas (Vaeyens et al., 2006). There is also a need to determine the physical and psychological determinants in football that impact performance, including motivation, stress, and coping (Park, 2000; Anshel et al., 2001). The purpose of this

study was to examine, through a multivariate model, football players' anthropometric and psychological skills in an elite football academy as they related to age and position.

**Material and methods**

**The site and the participants**

The sample included one of the most successful football academies in Hungary (Double Pass Hungary, 2016). Through total population purposeful sampling, our aim was to focus on the specific characteristics of every player from the site (Armour & MacDonald, 2012). Other than the players who were sick or injured at the time of data collection (less than 5%), every young player participated in this study (N=119). The players were between 15 and 20 years of age (M=16.44±1.17) at the time of data collection. The sample was divided into four age groups according to the championship system (U16, U17, U18, U21), and also into specific football positions (goalkeeper, defender, midfielder, striker), respectively (Table 1).

It is in the value system of this academy to develop excellent football players for the benefit of the club as well as for the whole of Hungarian football. Most players live in the 23-bedroom hostel on site surrounded by modern infrastructure, including a school, football pitches, a training and medical center, canteen, and kitchen.

Table 1. Number of participants as related to age-range and position (N=119)

	Goalkeeper	Defender	Midfielder	Striker	Σ
U21	4	9	6	6	37
U18	3	13	7	6	29
U17	3	8	7	11	29
U16	3	12	8	13	24
Σ	13	42	28	36	119

Source: own study.

**Data collection**

Data were collected in two phases in the fall of 2015 on the premises of the academy. Test batteries included three anthropometric variables and eighteen psychological variables. All tests were recorded on the same day by two experienced professionals.

In the first phase, anthropometric parameters were taken from each player. Heights and weights were measured, and body mass indexes (BMI) were calculated. In the second part, three valid psychological tests with eighteen variables were administered to measure players' motivation, perceived motivational climate, and coping skills. In an earlier study, these methods were found useful as diagnostic tools for both youth coaching and competition situations (Géczi et al., 2008).

**Sport Motivation Scale (SMS)**

The SMS test measures the components of athletes' levels of amotivation, extrinsic motivation, and intrinsic motivation. The 28-item psychological instrument was constructed of a seven-point scale ranging from 1 to 7 (from "does not correspond" to "corresponds exactly"). The Cronbach alpha internal coefficients for the original SMS version ranged between 0.66 and 0.80 (Pelletier et al., 1995), and 0.65 to 0.85 in the Hungarian adaptation (Tsang et al., 2005).

**Perceived Motivational Climate in Sport Questionnaire (PMCSQ-2)**

The PMCSQ-2 test (Newton, Duda & Yin, 2000) is an effective tool for assessing players' perceptions of motivational climate, which is characterized by achievement goal frameworks such as task and ego-involving climate (Nicholls, 1989). Task-involving climate measures players' perceptions of coaches' emphasis on "cooperative learning," "effort/improvement," and "important role," whereas ego-involving climate measures players' perceptions of "punishment for mistakes," "unequal recognition," and "inter-team

member rivalry.” The 33-item PMCSQ-2 instrument assigns a numerical assessment scale of 1 to 5 (from “strongly disagree” to “strongly agree”) and has an adequate level of internal reliability. The Hungarian version of PMCSQ-2 reported an internal consistency between 0.65 and 0.92 (Révész et al., 2009).

### **Athletic Coping Skills Inventory (ACSI-28)**

ACSI-28 is a 28-item test that measures coping with adversity, peaking under pressure, goal setting/mental preparation, concentration, freedom from worry, confidence, and achievement motivation, as well as coachability (Smith et al. 1995). The 28-item ACSI-28 has a 1-4 numerical scale (“never,” “seldom,” “often,” “always”) and an appropriate level of internal reliability. The Hungarian version of the test was validated by Jelinek and Oláh (2000), and its Cronbach alpha coefficients ranged between 0.59 and 0.84.

### **Data analysis**

First, descriptive analyses for all 21 variables were carried out ( $M \pm SD$ ). Then, results were compared using ANOVA with players from different age groups (U16, U17, U18, U21) and football field positions (goalkeeper, defender, midfielder, striker). If there were significant differences among groups, the Schaffé post hoc test was used (all  $p < .05$ ). Also, Multivariate Analysis of Variance (MANOVA) was calculated to determine the main variables responsible for the differences in mean vectors (age and position). The MANOVA test was used to see what effect age and position had on the three anthropometric and eighteen psychological variables.

### **Ethical considerations**

Once the study was permitted by the football academy’s director and approved by the football academy’s Ethical Committee, parents and players were approached. Ethical consent for participation was obtained. For those players under eighteen years of age, their parents or guardians also gave consent. The research was based on confidentiality and the anonymity of the participants.

### **Results**

Results of height, weight, and BMI are presented in Table 2. The U17 players and the goalkeepers were the tallest ( $179.79 \pm 5.83$ ,  $179.69 \pm 8.18$ ), whereas the U16 players and strikers were shortest ( $176.00 \pm 5.93$ ,  $177.36 \pm 8.62$ ). The U21 players were significantly heavier, and U16 was significantly lighter in body weight than all other age groups ( $F=8.463$ ,  $p=0.00$ ). In terms of the players’ positions, strikers were the heaviest ( $75.84 \pm 8.08$ ,  $72.06 \pm 8.28$ ), and midfielders had the lowest bodyweights ( $65.63 \pm 8.66$ ,  $70.25 \pm 9.04$ ). The U21 players’ BMI was significantly higher, and the U16 players’ BMI was significantly smaller than the other age groups ( $F=5.592$ ,  $p=0.00$ ). Strikers had the highest BMI ( $23.76 \pm 3.07$ ,  $22.90 \pm 2.23$ ), while the lowest was for midfielders ( $21.21 \pm 2.84$ ,  $21.96 \pm 3.45$ ).

There were no significant differences among the positions for the anthropometric measures.

Young academy football players had a low level of amotivation ( $1.45 \pm 0.68$ ) and a high level of extrinsic motivation ( $5.96 \pm 0.64$ ). The Cronbach alpha values were acceptable for all three subscales (0.56, 0.78, 0.78). There were no significant differences among age groups and positions, but certain trends can be observed.

The U21 age group had the highest level of both amotivation and extrinsic motivation ( $1.55 \pm 0.76$ ,  $6.16 \pm 0.54$ ), while the U17 group had the highest intrinsic motivation ( $4.98 \pm 0.66$ ). U16 had the lowest intrinsic and extrinsic motivation ( $4.60 \pm 0.94$ ,  $5.75 \pm 0.66$ ), and U18 had the lowest value of amotivation ( $1.28 \pm 0.46$ ).

Table 2. Height, weight, and BMI as related to age-groups and position (N=119)

	<b>Height (cm)</b>	<b>Weight (kg)</b>	<b>BMI</b>
$\Sigma$	178.39±7.63	71.66±8.45	22.55±2.64
<b>U21<sup>a</sup></b>	179.05±8.55	75.84±8.08 <sup>b,c,d</sup>	23.76±3.07 <sup>c,d</sup>
<b>U18<sup>b</sup></b>	178.10±8.98	71.69±7.86 <sup>a,d</sup>	22.62±2.13 <sup>d</sup>
<b>U17<sup>c</sup></b>	179.79±5.83	71.31±6.26 <sup>a,d</sup>	22.05±1.49 <sup>a</sup>
<b>U16<sup>d</sup></b>	176.00±5.93	65.63±8.66 <sup>a,b,c</sup>	21.21±2.84 <sup>a,b</sup>
<b>F and p values for age ranges</b>	F=1.23 p=0.30	<b>F=8.463</b> <b>p=0.00</b>	<b>F=5.592</b> <b>p=0.00</b>
<b>Goalkeeper</b>	179.69±8.18	72.00±11.43	22.22±2.56
<b>Defender</b>	178.31±7.28	72.17±7.28	22.73±2.35
<b>Midfielder</b>	179.21±6.68	70.25±9.04	21.96±3.45
<b>Striker</b>	177.36±8.62	72.06±8.28	22.90±2.23
<b>F and p values for positions</b>	F=0.45 p=0.71	F=0,338 p=0.79	F=0.820 p=0.48

Source: own study.

The midfielders had the highest level of amotivation (1.48±0.82), and the strikers had the highest scores in both intrinsic and extrinsic motivation (5.02±0.99, 6.11±0.58). The goalkeepers had the lowest amotivation value (1.31±0.49), and the midfielders had the lowest levels of intrinsic and extrinsic motivation (4.52±0.76, 5.83±0.58).

Table 3. Motivation as related to age-groups and positions (N=119)

<b>SMS</b>	<b>Amotivation</b>	<b>Intrinsic motivation</b>	<b>Extrinsic motivation</b>
$\Sigma$	1.45±0.68	4.83±0.90	5.96±0.64
<b>Cronbach <math>\alpha</math></b>	0.56	0.78	0.78
<b>U21<sup>a</sup></b>	1.55±0.76	4.86±1.15	6.16±0.54
<b>U18<sup>b</sup></b>	1.28±0.46	4.84±0.72	5.94±0.69
<b>U17<sup>c</sup></b>	1.43±0.55	4.98±0.66	5.90±0.64
<b>U16<sup>d</sup></b>	1.51±0.88	4.60±0.94	5.75±0.66
<b>F and p values for age ranges</b>	F=0.99 p=0.39	F=0,801 p=0.39	F=2.19 p=0.09
<b>Goalkeeper</b>	1.31±0.49	4.62±1.04	5.90±0.57
<b>Defender</b>	1.45±0.60	4.95±0.82	5.94±0.73
<b>Midfielder</b>	1.48±0.82	4.52±0.76	5.83±0.58
<b>Striker</b>	1.47±0.73	5.02±0.99	6.11±0.58
<b>F and p values for positions</b>	F=0.21 p=0.	F=2.17 p=0.09	F=1.09 P=0.035

Source: own study.

Altogether, the academy players had higher level task (4.02±0.62) than ego orientation characteristics (3.01±0.62) (Tables 3-4). The Cronbach alpha values were acceptable for both task (0.53-0.84) and ego (0.37-0.81) subscales. Amongst the task subscales, effort/improvement was highest (4.35±0.50), important role was lowest (3.84±0.65), and the cooperative learning score was in the mid-range (4.07±0.78). In ego orientation, intra-team member rivalry was highest (3.31±0.58), and the values of punishment for mistakes and unequal recognition were similarly low (2.76±0.75, 2.77±0.74).

The U21 group had a significantly lower task orientation value (3.73±0.71) than all the younger age groups (F=4.938, p=0.00). There were no significant differences among task subscales, but there are noticeable trends for age groups and player positions.

The U21 age group had the lowest cooperative learning (3.97±0.78), while the U16 group had the lowest effort/improvement and important role values (4.29±0.66, 3.77±0.73). U18 had the highest values for effort/improvement (4.40±0.45) and important role (3.92±0.59), and the U16 groups had the highest value in cooperative learning (4.17±0.90).

The strikers had the lowest value for task orientation (3.90±0.75), midfielders scored lowest in cooperative learning and effort/improvement (3.97±0.80, 4.31±0.51), and goalkeepers in important role (3.71±0.51). The goalkeepers had the highest value in task and cooperative learning (4.20±0.40, 4.19±0.67), whereas defenders scored highest in effort/improvement and important role (4.37±0.43, 3.98±0.58).

There were three significant differences as related to age groups in ego orientation. U21 players had significantly higher values in ego (3.40±0.56), punishment for mistakes (2.97±0.67), and unequal recognition (3.00±0.73) than younger players (F=10.023 p=0.00, F=3.668 p=0.01, F=4.563 p=0.00). The U21 age group had the highest value in intra-team member rivalry (3.47±0.68). The lowest values were found in the U16 group in all ego, punishment for mistakes, unequal recognition, and intra-team member rivalry variables (2.65±0.46, 2.42±0.88, 2.37±0.64, 3.17±0.57).

There were no significant differences in ego orientation by football player position, but the trends demonstrated a clear pattern. Strikers had the highest values in ego and intra-team member rivalry (3.10±0.69, 3.40±0.62), with midfielders having the highest in punishment for mistakes and unequal recognition (3.03±0.82, 2.92±0.66). Goalkeepers had the lowest values in ego, punishment for mistakes, and intra-team member rivalry (2.80±0.36, 2.53±0.65, 2.99±0.51), while the values for defenders in unequal recognition were lowest (2.63±0.75).

Table 4. TASK orientation results as related to age-range and positions (N=119)

PMCSQ-2	Task	Cooperative learning	Effort/Improvement	Important Role
Σ	4.02±0.62	4.07±0.78	4.35±0.50	3.84±0.65
<b>Cronbach α</b>	0.84	0.79	0.53	0.77
<b>U21<sup>a</sup></b>	3.73±0.71 <sup>b,c,d</sup>	3.97±0.78	4.37±0.44	3.78±0.64
<b>U18<sup>b</sup></b>	4.09±0.49 <sup>a</sup>	4.11±0.71	4.40±0.45	3.92±0.59
<b>U17<sup>c</sup></b>	4.26±0.37 <sup>a</sup>	4.08±0.71	4.33±0.49	3.91±0.68
<b>U16<sup>d</sup></b>	4.08±0.69 <sup>a</sup>	4.17±0.90	4.29±0.66	3.77±0.73
<b>F and p values for age ranges</b>	<b>F=4.938</b> <b>p=0.00</b>	F=0.375 p=0.77	F=0.231 p=0.87	F=0.431 p=0.73
<b>Goalkeeper</b>	4.20±0.40	4.19±0.67	4.35±0.47	3.71±0.51
<b>Defender</b>	4.11±0.51	4.12±0.60	4.37±0.43	3.98±0.58
<b>Midfielder</b>	3.95±0.65	3.97±0.80	4.31±0.51	3.81±0.68
<b>Striker</b>	3.90±0.75	4.04±0.96	4.36±0.58	3.77±0.75
<b>F and p values for positions</b>	F=1.183 p=0.31	F=0.325 p=0.80	F=0.097 p=0.96	F=0.958 p=0.41

Source: own study.

The subscales of the coping skill inventory were in the mid-range (M=3.00-3.41). The Cronbach alpha values were acceptable for most cases (0.44-0.67), but were low for goal setting and coachability (0.37-0.38). The U21 group had significantly higher values in peaking under pressure than the U16 group (3.57±0.43, 3.21±0.52, F=3.209 p=0.02). On the other hand, the U16 age group had significantly higher values in coachability than all the older players (3.63±0.38, F=14.51 p=0.00). The U21 players had the highest score in coping with adversity, goal setting, and confidence (3.31±0.40, 3.06±0.45, 3.47±0.34). U18 had freedom

from worry (3.13±0.47), U17 had concentration (3.49±0.35), and U16 had coachability (3.63±0.38) as their highest values. U16 had the lowest values in coping with adversity, peaking under pressure, freedom from worry, confidence, and concentration (3.17±0.43, 3.21±0.52, 2.90±0.45, 3.32±0.35, 3.32±0.45). U17 had the lowest goal setting and coachability values (2.88±0.42, 3.10±0.29).

Table 5. EGO orientation results as related to age-range and positions (N=119)

PMCSQ-2	EGO	Punishment for mistakes	Unequal Recognition	Intra team member rivalry
Σ	3.01±0.62	2.76±0.75	2.77±0.74	3.31±0.58
<b>Cronbach α</b>	0.81	0.77	0.72	0.37
<b>U21<sup>a</sup></b>	3.40±0.56 <sup>b,c,d</sup>	2.97±0.67 <sup>b,d</sup>	3.00±0.73 <sup>b,d</sup>	3.47±0.68
<b>U18<sup>b</sup></b>	2.99±0.69 <sup>a,d</sup>	2.61±0.77 <sup>a</sup>	2.65±0.79 <sup>a</sup>	3.24±0.55
<b>U17<sup>c</sup></b>	2.85±0.47 <sup>a</sup>	2.92±0.60 <sup>d</sup>	2.92±0.66 <sup>d</sup>	3.28±0.45
<b>U16<sup>d</sup></b>	2.65±0.46 <sup>a,b</sup>	2.42±0.88 <sup>a,c</sup>	2.37±0.64 <sup>a,c</sup>	3.17±0.57
<b>F and p values for age ranges</b>	<b>F=10.023</b> <b>p=0.00</b>	<b>F=3.668</b> <b>p=0.01</b>	<b>F=4.563</b> <b>p=0.00</b>	F=1,634 p=0.18
<b>Goalkeeper</b>	2.80±0.36	2.53±0.65	2.84±0.66	2.99±0.51
<b>Defender</b>	2.99±0.60	2.73±0.68	2.63±0.75	3.31±0.56
<b>Midfielder</b>	3.04±0.64	3.03±0.82	2.92±0.66	3.33±0.57
<b>Striker</b>	3.10±0.69	2.67±0.77	2.79±0.82	3.40±0.62
<b>F and p values for positions</b>	F=0.790 p=0.50	F=1.876 p=0.13	F=0.962 p=0.41	F=1.592 p=0.19

Source: own study.

There were no significant differences in coping skills among positions. The goalkeepers had the highest values in coping with adversity, peaking under pressure, freedom from worry, and concentration (3.37±0.57, 3.58±0.43, 3.17±0.43, 3.46±0.41). Midfielders scored highest in confidence and coachability (3.44±0.44, 3.26±0.38), while strikers had the highest values in goal setting (3.06±0.37). The midfielders had the lowest values in coping with adversity, goal setting, freedom from worry, and concentration (3.17±0.49, 2.95±0.47, 2.94±0.46, 3.38±0.43). The strikers scored lowest in peaking under pressure and coachability (3.38±0.49, 3.17±0.38), while goalkeepers had the lowest values in confidence (3.38±0.36).

The MANOVA test was used to see what effect age and position had on the three anthropometric and eighteen psychological variables. According to the results, the main effect has no significant influence on the measured variables; however, eight of the anthropometric and psychological variables were significantly influenced by age: F(4.112)=2.4, p<.05; Wilk’s Λ=0.320 (Tables 2-5). Conversely, none of the 21 variables were significantly influenced by football player position.

## Discussion

The present study extends earlier studies focusing on football players’ psychological characteristics. This study presented how young elite football players’ motivation, perceived motivation, and coping skills are influenced by age and player position.

As expected, academy players’ anthropometric measures increase as they grow. It is no surprise that older players were taller and heavier, and thus had a higher BMI than their younger counterparts. Even though there were no significant differences among the age groups in terms of height, this trend is observable.

Table 6. Coping skill results as related to age-groups and positions (N=119)

ACSI-28	Coping with adversity	Peaking under pressure	Goal-setting	Freedom from worry	Confidence	Coachability	Concentration
$\Sigma$	3.24±0.43	3.40±0.46	3.00±0.43	3.12±0.47	3.39±0.37	3.22±0.39	3.41±0.41
<b>Cronbach <math>\alpha</math></b>	0.49	0.67	0.37	0.60	0.44	0.38	0.45
<b>U21<sup>a</sup></b>	3.31±0.40	3.57±0.43 <sup>d</sup>	3.06±0.45	3.02±0.48	3.47±0.34	3.15±0.32 <sup>d</sup>	3.41±0.46
<b>U18<sup>b</sup></b>	3.24±0.46	3.36±0.43	3.00±0.40	3.13±0.47	3.40±0.39	3.11±0.36 <sup>d</sup>	3.39±0.39
<b>U17<sup>c</sup></b>	3.20±0.42	3.40±0.43	2.88±0.42	2.97±0.47	3.36±0.39	3.10±0.29 <sup>d</sup>	3.49±0.35
<b>U16<sup>d</sup></b>	3.17±0.43	3.21±0.52 <sup>a</sup>	3.05±0.43	2.90±0.45	3.32±0.35	3.63±0.38 <sup>a,b,c</sup>	3.32±0.45
<b>Age range: F and p values</b>	F=0.665 p=0.57	<b>F=3.209</b> <b>p=0.02</b>	F=1.189 p=0.31	F=1.163 p=0.32	F=0.852 p=0.46	<b>F=14.51</b> <b>p=0.00</b>	F=0.749 p=0.52
<b>Goalkeeper</b>	3.37±0.57	3.58±0.43	3.04±0.62	3.17±0.43	3.38±0.36	3.21±0.35	3.46±0.41
<b>Defender</b>	3.21±0.38	3.39±0.47	2.98±0.39	3.04±0.48	3.39±0.31	3.25±0.42	3.40±0.43
<b>Midfielder</b>	3.17±0.49	3.39±0.44	2.95±0.47	2.94±0.46	3.44±0.44	3.26±0.38	3.38±0.43
<b>Striker</b>	3.27±0.37	3.38±0.49	3.06±0.37	2.97±0.48	3.39±0.38	3.17±0.38	3.42±0.39
<b>Posts: F and p values</b>	F=0.739 p=0.53	F=0.680 p=0.56	F=0.374 p=0.77	F=0.808 p=0.49	F=0.168 p=0.91	F=0.433 p=0.72	F=0.135 p=0.93

Source: own study.

Table 7. MANOVA for age-groups and positions (N=119)

Effect	Test	Multivariate Tests of Significance				
		Value	F	Effect df	Error df	p
Intercept	Wilks	0,000035	152434,6	18	95,0000	0,000000
Positions	Wilks	0,687233	0,7	54	283,8790	0,939090
Age-group	Wilks	0,320760	2,4	54	283,8790	<b>0,000001</b>
Position*Age-group	Wilks	0,043609	1,0	288	647,1819	0,589942

Source: own study.

The academy players' amotivation level was generally low, but their extrinsic motivation was a lot higher than their intrinsic motivation. This is a surprising result because an earlier study (Géczi et al., 2009) found young football players' intrinsic motivation to be higher than their extrinsic motivation. Regardless of age, the young academy football players in our sample are not engaged in a high level of training solely for their own pleasure. Due to outside approval or control as characterized by a high level of extrinsic motivation, they have a tendency to become stressed and pressured.

In line with earlier studies (Géczi et al., 2009; Van-Yperen & Duda, 1999), the sample in this study perceived their motivational climate to be task oriented. According to the related literature, the promotion of a task-involving motivational climate positively impacts team satisfaction, enjoyment, and fair play (Ames, 1992). It seems inconsistent in our results that the players perceived the climate to be task oriented while demonstrating a high level of extrinsic motivation. Earlier studies reported that successful football players tend to be task oriented and are considered intrinsically motivated (Çetinkalp & Turksoy, 2011; Jagacinski & Strickland, 2000). It is suggested that instead of supporting rivalry and public comparisons in the teams, coaches need to emphasize and strengthen fun and enjoyment simultaneously with cooperation, pro-social team norms, and moral functioning (Miller, Roberts & Ommundsen, 2003).

The coping skill inventory demonstrated similar results in all seven subscales; none of them seems too high or too low. Football players must be able to handle stressful situations and cope effectively with different stressors (Holt & Dunn, 2004), including external expectations, game situations, and opportunities



for professional contracts. The older the players are, the more they are concerned with performance worry, social status, and comparisons (Duda, 1992); they also need to prepare more for their future outside of the academy. In contrast, the older they are, the more difficult it is for their coach to train and educate them. Also, older players' moral functioning and sportsmanship attitudes are weaker in comparison to younger players (White & Duda, 1994).

We can conclude that players from different age groups did not differ in their motivation. However, football players demonstrated different coping measures and perceived motivational climate, and age was accountable for major differences in the task, ego, punishment for mistakes, unequal recognition, peaking under pressure, and coachability factors. The U21 age group demonstrated low task and coachability levels and high levels for ego, punishment for mistakes, and unequal recognition. As one of the most important findings of this study, it can be concluded that neither anthropometric nor psychological characteristics differ in terms of academy players' positions.

Players can cope well with stress if the coach-athlete relationship is based on trust and support, and if the purpose is to improve performance, mental toughness, and enjoyment (Kristiansen & Roberts, 2010). When working with all age ranges, coaches need to emphasize fun, cooperation, participation, learning, and personal improvement on a daily basis, which, according to our findings, is not related to player position.

Football academies are under increasing pressure to identify and develop talent for the professional leagues (Sagar, Busch & Jowett, 2010). Over the past few decades, it has been proven that the identification and selection of talented players lasts several years, is based on many different factors, and, furthermore, is also influenced by many factors in the talent development process (Lawrence, 2008; Csáki et al., 2014). Our results support the earlier studies (Christensen, 2009; Williams & Reilly, 2000) that found the monitoring of players to be important throughout the whole process of talent development through different tests and measurements and, also of great significance, through the eyes of the coach. It is very important that football players should "know what to expect" in football within the academy and afterwards so that they can be best prepared.

Players need professional and sport-specific guidance in addition to effective support and motivation from their coaches. Our results confirm previous findings suggesting that although players may have good skills and anthropometric characteristics, motivation, a positive attitude, coping skills, and the rest is up to the coach's beliefs, knowledge, attitude, and skills. The best development of a young football player must be completed within the coach-parent-athlete-academy quartet.

## Conclusions

Contrary to our expectations, there were no differences in motivation, perceived motivational climate, and coping among football players' positions. However, there were differences among the age groups in perceived motivation and coping. Older players are more ego oriented and have a higher level of peaking under pressure. Younger players have higher task, ego, and coachability levels. Hence, football coaches need to focus less on positions and more on age differences when dealing with motivation, perceived motivation, and coping.

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