

Los factores psicológicos desempeñan un papel crucial en el rendimiento deportivo? - Investigación sobre la personalidad y psicológicos variables de atletas en Hungría

Do psychological factors play a crucial role in sport performance? – Research on personality and psychological variables of athletes in Hungary

Não factores psicológicos desempenham um papel crucial no desempenho esportivo? - Investigação sobre personalidade e psicológicos variáveis de atletas na Hungria

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Resumen: La investigación contemporánea tiene como objetivo investigar los variables explicativas que contribuyen al rendimiento deportivo exitoso. De estos factores vale la pena destacar el bienestar mental y el estado de salud psicológica que han ganado un papel importante, sobre todo en los marcos de asesoramiento psicológico de deporte. El objetivo del presente estudio es la búsqueda de interrelaciones de variables psicológicas y el rendimiento deportivo de los atletas jóvenes, y revelar qué ventajas podrían ser utilizadas con los más jóvenes para fortalecer el rendimiento deportivo. No se encontraron diferencias de género en el rendimiento deportivo; mientras que la edad mostró diferencias significativas. Los resultados indicaron diferencias en las variables psicológicas estudiadas por edad y género. Se utilizó análisis de regresión para probar cómo los factores psicológicos predicen el rendimiento exitoso. El análisis demostró el papel de los factores específicos de edad y género que deben ser considerados durante el asesoramiento psicológico de deporte. El trabajo psicológico debe comenzar a edades tempranas para garantizar el rendimiento más exitoso a la edad adulta.
Palabras clave: educación psicológica de la juventud, el rendimiento deportivo, preparación psicológica de deporte y asesoramiento.

Abstract: Contemporary research aims to investigate background factors that contribute to successful sport performance. Of these factors the psychological well-being and mental health status should be underlined that have gained a significant role, particularly in the frames of sport psychological counseling. The aim of the present study is to seek for interrelations of psychological variables and sport performance of young athletes, and to reveal what advantages might be utilized in younger ages to strengthen sport performance. No gender differences were found in sport performance; while age showed significant difference. The findings indicated differences

of the investigated psychological variables by age and gender. Regression analyses were employed to test how psychological factors predict successful sport performance. The analyses strengthened the role of age and gender specific factors that should be considered during sport psychological counseling. The benefits should be highlighted in young age in order to ensure more successful performance in adulthood.

Keywords: psychological education of youth, sport performance, sport psychological preparation and counseling.

Resumo: A investigação contemporânea tem procurado identificar os factores basilares que contribuem para um desempenho desportivo de sucesso. Deste factores, o bem-estar psicológico e o estado de saúde mental devem ser enfatizados tendo ganho um papel significativo, particularmente nas abordagens relativas ao aconselhamento psicológico no âmbito desportivo. O objectivo do presente estudo é identificar interrelações entre as variáveis psicológicas e o desempenho desportivo em jovens atletas e revelar quais as vantagens que podem ser utilizadas por estes jovens para potenciar a sua performance desportiva. Não se verificaram diferenças de género na performance desportiva; enquanto o contrário se verificou relativamente à idade. Estes resultados indicam diferenças nas variáveis psicológicas investigadas tendo em conta o género e a idade. Foram efectuadas análises de regressão para testar como os factores psicológicos predizem uma performance de sucesso. Os resultados enfatizam o papel da idade e do género como factores específicos que devem ser considerados durante o aconselhamento psicológico desportivo. Os benefícios devem ser reforçados nos jovens de forma a garantir uma performance de sucesso na prática desportiva adulta.

Palavras-chave: educação psicológica em jovens, desempenho desportivo, preparação e aconselhamento psicológico desportivo.

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Introduction

The contemporary literature in sport psychology focuses on several topics, particularly on the well-being of athletes. Several research investigated stress, arousal, anxiety, personality traits, motivation, self-evaluation, and cognitive skills (Conolly & Janelle, 2003, Crocker et al. 1998, Gould & Udry, 1994, Jones, 1998, Moore & Gardner, 2001, Nicholls et al. 2012, Rumbold et al. 2012, Zusková et al. 2010). Previous research have confirmed that the athletes during physical activity, exercise utilize their psychological skills in a high level, thus sport psychological preparation and counseling can contribute to better sport performance (Andersen, 2001, Anshel, 2003, Hardy et al. 1996).

Sport psychological preparation and counseling can be defined “broadly as anything athletes do to ready themselves for sport involvement, or in a much more specific manner in terms of the techniques athletes use to ready themselves for specific athletic tasks (e.g. the use of visualization to aid in the execution of a balance beam routine” (Gould, Maynard 2009, p. 1393). More specifically, psychological preparation is defined as “those cognitive, emotional, and behavioural strategies athletes and teams use to arrive at an ideal performance state or condition that is related to optimal psychological states and peak performance either for competition or practice” (Gould, Flett, Bean, 2009, p. 53). Sport psychological preparation and counseling might be referred as mental preparation within psycho-behavioral interventions. The latter interventions address competitive sport stress management, confidence-building, concentration refinement and mental preparation for competition (Dosil 2006). Interventions define the work of sport psychology practitioners, particularly if they engage in psychological skills training as opposed to psychotherapy and counseling methods. The different cognitive and behavioral strategies and programs intended to alter an athlete’s thought patterns, emotions and to optimize performance outcomes using particular strategies for certain athletes in specific situations.

Sport performance, and successful performance is often influenced by the psychological skills and psychological status of athletes that can be facilitated by psychological therapy and preparation (Gardner & Moore, 2006, Gyomber et al. 2013, Omar-Fauzee et al. 2009, Zusková et al. 2010). Sport psychologists train and supervise athletes’ development, they observe how participation in sport and exercise affect psychological and physical factors, and providing instructions and trainings of psychological skills for performance improvement by emphasizing the individual strengths. Sport psychological counseling facilitates the use of psychological skills before competitions and aims to optimize performance and enjoyment of athletes (Petipas et al. 1999, Vealey & Garner-Holman, 1998). Moreover, during sport psychological prepara-

tion – e.g. psychotherapy, arousal regulation, goal setting, imagery, positive self-talk, building/maintaining confidence, coping with stressful routines and pre-performance routines – counseling psychologists make suggestions for improving practice effectiveness due to psychological skills based on situational demands and the athlete’s needs (Dosil 2006, Harwood et al. 2004, Leunes, 2011, Omar-Fauzee et al. 2009, Shaw et al. 2005, Singer et al. 2001).

Of the basic methods in sport psychological preparation relaxation techniques can be learnt to use individually before and during sport competitions - under pressure - in order to achieve better sport performance consistently, and to hold ability to perform well. Increasing self-efficacy/sport-confidence, ability to focus, and successfully perform a task. For example, the role of stress management might be underlined. Haney found in 2004 that cognitive restructuring and modified progressive muscle relaxation as stress management techniques have a beneficial effect on athletes (Haney, 2004), while imagery, cognitive control, energizing, self-talk training and meditation, relaxation serve efficient tools in stress reduction and optimizing in sport performers’ lives (Rumbold et al. 2012). Furthermore, control over stressful situation might contribute to better coping, thus better sport performance in adolescence (Kowalski et al. 2005). The impact of stress and the arousal has been investigated previously, and several researchers have found the evidence how it facilitates sport performance (Anshel, 2003, Leunes, 2011, Moore & Gardner, 2006, Nicholls et al. 2012).

Previous research attempted to explore the role of age and gender specific considerations in effective sport performance. However, findings are vague most of the researchers emphasized the beneficial impact of sport psychological counseling for both genders and any age groups. For instance, Connelly and Janelle (2003) found the evidence that rowers – males and females – performed significantly better when employing associative attention styles, strategies facilitated by sport preparation. Concerning age, Reeves and colleagues (2011) found that in adolescence, soccer players cope better with perceived stress, received criticism and injury with more experiences – more psychological preparation. Boglar and colleagues (2008) reported no gender differences in a sample of adolescent tennis players concerning anger management. Friedman and Berger (1991) stated that gender has a dominant impact on stress reduction techniques, where high level masculinity provided benefits for students. Omar-Fauzee and colleagues (2009) demonstrated that significant gender differences were found in coping with adversity, where males indicated higher effectiveness in coping among Malaysian athletes. On the other hand, slight gender differences were shown among adolescent athletes in selecting coping strategies (d’Arripe-Eongueville et al. 2009, Hoar et al., 2010, Rogowska & Kusniers, 2012). Thus, sport psychology consult-

ants must be sensitive to how personal characteristics work, and considering gender and age might be a remarkable factor in supporting effective performance.

The present paper aims to examine one common area of investigation within sport psychology, namely, the relationship between personality traits, psychological factors and performance. The present research focuses on specific personality characteristics, psychological skills and the relation to performance variables by age and gender. We assume that specific age and gender related psychological components might support the process of sport psychological counseling and preparation. Furthermore, our hypothesis is: the earlier psychological preparation begins the more successful sport performance might be detected in later life.

Methods

Procedure

Questionnaire survey was conducted among athletes (N=185) applying for sport psychological counseling and therapy in a certain hospital, in Budapest, Hungary. Participants were informed on the first psychological consultation about the study objectives and their voluntary and anonymous participation was ensured. One sport psychologist was present while carrying out the questionnaire survey. Participants filled in the questionnaires in approximately 45-50 minutes. Thus, the present research focused on the starting point of counseling, where psychological profile was detected and analysed in light of sport performance, which was actually followed by sport psychological counseling itself.

Measurement

Of sociodemographic variables, age, gender and education of the participants were assessed in the introduction part. Further sport-related variables such as "What sport do you do?" or "What is your best sport performance achieved in the previous year?" were asked. Sport performance was measured on a 3-point scale indicating the athlete's most successful performance in the last year (1 = International ranking 1-6; 2 = National ranking 1-3, 3 = Other). Time ever spent in psychological preparation was measured in years.

Then, a set of measurement tools were introduced concerning mental health, psychological status. First, personality variables were measured by the instrument of California Personality Inventory (CPI-21 cf. McAllister 1996). CPI is a self-report inventory that was first published in 1956 and CPI focuses on measuring and understanding common interpersonal behaviors (e.g., self-control, dominance etc.) in the general population. This tool enhances (1) measures of poise, ascendancy, self-assurance, and interpersonal adequa-

cy; (2) measures of socialization, responsibility, intrapersonal values, and character; (3) measures of achievement potential and intellectual efficiency; (4) measures of intellectual modes and interest modes (Gough & Bradley 1996). The inventory contains 434 items which can be scored to yield 21 scales: Dominance, Capacity for Status, Sociability, Social Presence, Self-Acceptance, Independence, Empathy, Responsibility, Socialization, Self-Control, Good Impression, Communitarity, Sense of Well-Being, Anxiety, Tolerance, Achievement via Conformance, Achievement via Independence, Intellectual Efficiency, Psychological-Mindedness, Flexibility, and Femininity-Masculinity. The internal consistency of the CPI resulted in a Cronbach's alpha $\alpha = .851$, indicating good reliability of this psychometric test. CPI is a regularly used measurement tool, since includes additional scales that capture Big Five personality traits: Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness (Cronbach's alpha $\alpha = .803$).

Secondly, Athletic Coping Skills Inventory (ACSI-28) is a measure of athletes' psychological skills, developed by Smith et al. (1994). Athletic Coping Skills Inventory consists of 28 items (e.g. "On a daily or weekly basis, I set very specific goals for myself that guide what I do"; "When I fail to reach my goals, it makes me try even harder") that are assessed by a 4-point Likert-type scale where 0 = almost never to 3 = almost always. ACSI-28 items measure 7 scales: Coping With Adversity, Coachability, Concentration, Confidence and Achievement Motivation, Goal Setting and Mental Preparation, Peaking Under Pressure and Freedom From Worry scales. (Cronbach's alpha $\alpha = .787$).

Thirdly, Competitive State Anxiety Inventory (CSAI-2) was used that consists of statements with athletes use to describe their feelings before competition. CSAI-2 is a sport-specific state anxiety scale developed by Martens, Vealey, and Burton (1990). CSAI uses 27 statements (e.g. "I am concerned I may not do as well in this competition as I could" or "I'm confident of coming through under pressure") that result in three scale components. The scale divides anxiety into three components: cognitive anxiety, somatic anxiety, and a related component-self-confidence (Cronbach's alpha $\alpha = .689$). Self-confidence tends to be the opposite of cognitive and is another important factor in managing stress (Jones, 1998).

Analysis

SPSS 22.0 was used for statistical analyses. For descriptive statistics, frequencies, independent samples tests and chi-square tests were used. For further analyses, t-tests, Chi-square tests, Spearman correlation, multivariate ANOVA, and linear regression analyses were employed. The level of significance was set to .05.

Results

The sample characteristics are presented in Table 1. The mean age of the respondents was 21.23 years (SD=7.2). The age variable was recoded and two age groups were used for further analysis with the cut-off value of 21. Males were represented in the sample with 60.5% and slightly overrepresented in both age groups 66.2% in the 21+ age group and 57.5% in the under 21 group ($\chi^2=1.32$ $p >.05$). In respect of education, more than half of the respondents obtained degree from university or college, or are participating in the training (51.9%). Females were slightly overrepresented in the obtained degree from university or college group with 57.5% ($\chi^2=1.54$ $p >.05$). Not surprisingly, based on age the 21+ group was overrepresented in the university or college group 87.7% ($\chi^2=51.45$ $p <.01$).

Table 1. Sociodemographics and Sport-related variables in the sample (N=185).

	M (SD)
<i>Age</i>	21.2 (7.2)
	Frequency
<i>Age groups</i>	
under 21 group	64.9%
21+ group	35.1%
<i>Gender</i>	
male	60.5%
female	39.5%
<i>Education</i>	
high school	48.1%
university or college	51.9%
<i>Sport type</i>	
individual	88.6%
group	11.4%
<i>Sport performance</i>	
international	8.6%
national	26.0%
other	65.4%
<i>Time in psychological counseling</i>	
less than 1 year	40.5%
more than 1 year	59.5%

Concerning sports by type a widespread range was represented in the sample (Table 1), such as individual sports

(e.g. athletics, golf, cycling) and team sports (e.g. basketball, handball, football, volleyball). Sport types were recoded based on participation in individual and group sports, where under 21 years old respondents tend to participate in individual sports in 93.3% ($\chi^2=7.45$ $p <.01$). In terms of sport performance, 8.6% of the athletes' in the sample achieved international ranking, 25.9% national and the majority, that is, 65.4% other successes. Significant gender differences were not found in the Chi-square test. 8.9% of male and 8.2% of females achieved international success in sport performance and these proportions varied in national ranking: 23.3% and 30.1%, respectively ($\chi^2=1.10$ $p >.05$). On the other hand, age showed some significant differences in sport performance, the 21+ age group represented more international and national success than the younger group: 15.4% of the 21+ group and 5.0% of the younger age group indicated international success in sport performance, 27.7% and 25.0% in national success ($\chi^2=6.47$ $p <.05$). Time spent in psychological preparation showed normal distribution with mean value of 2.14 years (SD=1.43). Sport performance showed weak ($r=-.095$ $p >.05$) correlation with the length of sport psychological counseling.

In the next phase of the analysis of psychological factors, - personality variables and psychological skills - e.g., anxiety and coping - were investigated thoroughly. First, gender and age differences were tested in personality and psychological variables by employing multivariate analysis of variance. The findings showed that age group and gender differences are present in certain scales of the personality scales (Table 2), namely, Sociability, Self-acceptance, Self-control, Good Impression, Achievement via Independence, Intellectual Efficiency, Psychological-Mindedness and Femininity-Masculinity of CPI scales. Well-being, Communality, Achievement via Independence and Psychological-Mindedness showed gender differences (Wilk's lambda .601 $p <.001$) where Communality, Achievement via Independence showed higher scores among females. While based on age, Dominance, Sociability, Social Presence, Self-Acceptance, Anxiety, Socialization, Self-control, Good Impression, Achievement via Conformance and Intellectual Efficiency, Flexibility and Femininity-Masculinity showed significant differences (Wilk's lambda .549 $p <.001$), where Achievement via Intellectual Efficiency, Flexibility and Femininity-Masculinity showed higher scores among 21+ age group.

Table 2. Age and gender differences in psychological variable set.

	Gender	Age	Gender*Age
Dominance (DO)		13.86***	
Capacity for Status (CS)			3.86*
Sociability (SY)		48.05***	4.91*
Social Presence (SP)		2.88°	

	Gender	Age	Gender*Age
Self-Acceptance (SA)		8.74**	3.73*
Sense of Well-Being (WB)	17.54***		
Anxiety (AN)		5.46*	
Responsibility (RE)			
Socialization (SO)		16.30***	
Self-Control (SC)		3.12°	5.10*
Tolerance (TO)			
Energy of Self (ES)			
Good Impression (GI)		7.35**	4.39*
Communality (CM)	4.35*		
Achievement via Conformance (AC)		12.30**	
Achievement via Independence (AI)	3.21°	3.16°	
Intellectual Efficiency (IE)		75.54***	8.53**
Psychological-Mindedness (PY)	2.96°	4.05*	
Empathy (EM)			
Flexibility (FX)		8.57**	
Femininity-Masculinity (FE)		8.30**	7.59**
Wilk's lambda	.601***	.549***	.842
Extraversion/Sociability		7.52**	
Agreeableness/Likeability		21.67***	4.73*
Conscientiousness		10.34*	
Ego Control/Neuroticism			
Intellectance/Openness			
Wilk's lambda	.961	.770***	.947
Coping With Adversity			
Peaking Under Pressure	3.75*		
Goal Setting and Mental Preparation			
Concentration	4.41*		
Freedom From Worry	10.5**		
Confidence and Achievement Motivation	6.18*		
Coachability			
Wilk's lambda	.910*	.952	.987
Cognitive state anxiety	8.31**		
Somatic state anxiety			
Self-confidence	7.21**		
Wilk's lambda	.942*	.963	.994

* p < .05 ** p < .01 *** p < .001 ° p ≤ .05

Note: F values shown in the table

In Big Five traits (Table 2) - captured by CPI – showed significant age group differences (Wilk's lambda .770 p<.001), where the under-21 age group was overrepresented along Extraversion/Sociability, Agreeableness/Likeability and Conscientiousness. Gender played a significant role - solely intercepting with age - on Agreeableness/Likeability scale.

After investigating CPI scales, multivariate analyses of variance were employed in order to see the gender and age group differences in Athletic Coping Skills Inventory (ACSI-28) and Competitive State Anxiety Inventory (CSAI-2). Table 2 shows that gender differences are more significant than age group differences in coping, and anxiety scales. For

instance, females scored significantly lower on Peaking Under Pressure ($M_{females}=9.8$ $M_{males}=10.8$ $p<.05$), Freedom From Worry ($M_{females}=9.5$ $M_{males}=11.2$ $p<.001$), on Confidence and Achievement Motivation ($M_{females}=11.0$ $M_{males}=12.0$ $p<.001$) scales and Concentration ($M_{females}=11.4$ $M_{males}=12.1$ $p<.05$). The results showed that Coping With Adversity, Goal Setting and Mental Preparation and Coachability did not indicate any significant differences neither by gender nor age group. Similarly to coping, anxiety also showed significant gender differences. Females tend to experience more Cognitive and Somatic state anxiety than males ($M_{females}=21.8$ $M_{males}=18.9$ $p<.001$). On the other hand, females indicated lower Self-confidence level than males ($M_{females}=22.1$ $M_{males}=24.2$ $p<.01$). Finally, Concentrated

The last step of the analysis was to seek background factors of successful sport performance, that is, to test what kind of personality variables predict successful sport performance and how sport psychological counseling contributes to this. The first model of the linear regression analysis included age, gender, sport type and length of sport psychological counseling. The results showed that age has a significant effect on sport performance. The second model was completed with psychological variables (CPI, Big Five personality variable set, ACSI-28, CSAI; Table 3) to investigate the influence of all predictors.

Table 3. Linear regression models for sport performance.

Total sample	Model 1	Model 2
Age	.176*	
Gender		
Type of sport		
Length of counseling		
<i>CPI</i>		
Anxiety		-2.04*
Self-Control		2.8*
Tolerance		2.26*
Energy of Self		2.16*
<i>Big Five</i>		
Ego Control/Neuroticism		-7.56*
<i>CSAI</i>		
Peaking Under Pressure		-.233*
R Square	.258	.258
Constant	2.89**	6.81

** $p<.001$ * $p<.05$

Note: β values, enter method

Significant effects of certain variables were shown in the linear regression analyses in the prediction of successful sport performance. For instance, age indicated a significant influence on sport performance ($\beta=-.176$ $p<.01$). Of the CPI items Anxiety ($\beta=2.04$ $p<.05$) and Self-Control ($\beta=-2.8$ $p<.05$, Tolerance ($\beta=2.26$ $p<.05$), Energy of Self ($\beta=-2.16$ $p<.05$). Of the

Big Five personality traits Ego Control/Neuroticism ($\beta=7.56$ $p<.05$) were confirmed as significant factors, that is, high level of Ego Control might contribute to more successful sport performance. Regarding CSAI scales Peaking Under Pressure showed remarkable influence ($\beta=-.233$ $p<.05$), while ACSI did not indicate any significant effects.

Conclusion

The objective of the present paper was to examine the relationship between personality characteristics, psychological factors and sport performance. The present research focused on specific personality characteristics – CPI and Big Five personality traits – and the relation to performance variables (Goldberg, 1992). Examining the choice of sports by type younger age and female group tend to choose individual sports compared to team sports. No significant difference was found in performance ranking by gender, that is, the successful sport performance of males and females was balanced in the present sample. Not surprisingly, age showed significant differences in successful sport performance, namely, the 21+ age group had more successful sport performance due to the fact that they have spent longer time run in sporting, however, the length of psychological counseling did not indicate significant correlation with performance. 21+ age group achieved International ranking 1-3 nearly twice more than the under-21 year old group.

The present findings showed that there is a different personality and psychological profile of male and female, and younger and older athletes (cf. Boglaret al. 2008, Connelly & Janelle, 2003, Friedman & Berger, 1991, Hoar et al., 2010, Gyomber et al. 2013, Omar-Fauzee et al. 2009, Rogowska & Kusniers, 2012). While investigating the personality factors, the data showed that Sociability, Self-acceptance, Self-control, Good Impression, Achievement via Independence, Intellectual Efficiency, Psychological-Mindedness and Femininity-Masculinity of CPI scales have differences by age and/or gender. Well-being, Communality, Achievement via Independence and Psychological-Mindedness showed significant gender differences where Communality, Achievement via Independence showed higher scores among females and Sense of Well-being and Psychological-Mindedness higher among males. This means that males rate better their Well-being during exercise and sport performance – and their general well-being – than females. In addition, males tend to have extended capacity for self-examination, self-reflection, that is, the ability to recognize meanings that underlie overt words and actions, to appreciate emotional nuance and complexity, to recognize the links between past and present, and insight into one's own and others' motives and intentions, inner needs. On the other hand, females focus more on the experience of community rather than its structure, formation,

setting, or other features; considering their own perceptions, understanding, attitude, feelings and their own relationship to others' participation. Females, in general, are more sociable and tend to pay attention to social networks in a high level. According to Corlaci et colleagues (2013) they are more directed toward social integrity. Furthermore, sociability might play a significant role in every elite athlete's life due to the fact that they spend a large amount of time with their sport peers. The sport peers function as significant others, reference group that mediate values, and ensure cohesion based on the common experiences, trainings and competitions. According to MacPherson and colleagues (2015) peer influence and identity development can be related in sport, based on the self-reflections by female athletes.

Moreover, females pay higher attention to factors of interest and motivation that facilitate achievement in any setting where autonomy and independence are positive behaviors. On the other hand, Dias and colleagues (2010) have found that female athletes can be characterized by higher level of anxiety and threat perception. Furthermore they apply a more complex set of emotion- and problem-focused coping strategies. They are also more neurotic, agreeable and conscientious, than male athletes (Allen et al. 2011) Thus, that means there are different personality factors by gender that might contribute to better performing.

Concerning age, Dominance, Sociability, Social Presence, Self-Acceptance, Anxiety, Socialization, Self-control, Good Impression, Achievement via Conformance and Intellectual Efficiency, Flexibility and Femininity-Masculinity showed age group differences where Achievement via Intellectual Efficiency, Flexibility and Femininity-Masculinity showed higher scores among 21+ age group. This can be explained also by age characteristics, that is, the "older" group has already overcome the identity crisis and focuses more on intimacy issues (cf. Erikson psycho-social development model). In this age phase individuals are dealing with masculinity and femininity features of relationships and the masculine and feminine roles are prioritized. These roles are integrated into the personality during this period. In addition, significant development of cognitive skills progresses where coping potential is improved – this might be also supported by longer time in sport psychological preparation. On the scales of Dominance, Sociability, Social Presence, Self-Acceptance, Anxiety, Socialization, Self-control, Good Impression, Achievement via Conformance the under-21 group achieved higher scores. We might emphasize here the crucial role of adolescence. During this life phase high dominance is linked to the characteristics of adolescence, namely, it is a highly ego-centered period, where sociability plays a dominant role due to high sociability and high relevance of the peer groups, peer acceptance. In general, dominance might be higher because of the status and prestige of peers involved in elite sports.

The values demanded by elite athletes influence the identity positively. Based on the high status of elite athletes and the high level of peer acceptance self-acceptance is triggered and adolescent elite athletes tend to rate their own skills higher than others. In summary, the aforementioned changes and characteristics have important influences on personality, on sport behavior and sport performance.

In Big Five personality traits, - in harmony with previous theories (cf. Friedman & Berger, 1991) - females were represented significantly higher level in Extraversion/Sociability, Agreeableness/Likeability and Conscientiousness. Females focus on their peers more dominantly and since puberty occurs earlier than among males, they are opened to others more significantly. Next to gender features, age also detected significant differences in Agreeableness/Likeability where the under-21 age group was overrepresented. Besides the age characteristics, the overwhelming changes of the 21st century might be mentioned. The complex challenges that youth are facing, e.g. goal-orientation, fighting for better performance in general, being innovative in the rushing environment.

In the scales of anxiety and coping, few significant differences were shown mostly by gender, namely, females scored lower on Peaking Under Pressure, Freedom From Worry, Concentration and on Confidence scales. This underlines the fact that males might reach more successful sport performance even under pressure: male athletes are challenged rather than threatened by pressure situations and perform well under pressure; male athletes put pressure on themselves by worrying about performing poorly or making mistakes, worries about what others will think if they perform poorly; male athletes might become non-easily distracted, and are able to focus on the task at hand in both practice and game situations, even when adverse or unexpected situations occur; and finally, male athletes are confident and positively motivated, consistently giving 100% during practices and games, and working hard to improve skills.

Similarly to coping, anxiety also showed differences by gender, where females tended to experience more Cognitive and Somatic state anxiety and they indicated lower Self-confidence level than males. The multidimensional trait anxiety theory is based on the premise that state anxiety is multidimensional with its two components (cognitive anxiety and somatic anxiety) influencing performance differently. Indeed, being concerned with worry and anxiety has a negative effect on performance, while somatic or body-related dimension of state anxiety is increased when a person feels threatened and becomes increasingly aware of his or her heart rate, ventilation rate, and sweating might have a positive effect on performance (cf. Selye' stress theory). In summary, by employing a set of the multiple analyses of variance different patterns of personality traits, scales of anxiety and coping were tested to reveal their influence on sport performance.

In the next step, a set of linear regression models was employed in order to explore how different variables predict successful sport performance in the total sample. The first model confirmed the significant influence of age. Additionally, the second model did not show any significant effect of gender, age, type of sport and time spent in psychological preparation. However, personality-related and psychological factors played a significant role in estimating successful sport performance. In the model, Ego Control/Neuroticism can be considered as the strongest predictor variable in successful sport performance. Ego control as an internal locus of control is crucial in the life of elite athletes since increased internal control supports the integrity of the individual and contributes to better sport performance via decreasing anxiety and additional negative emotions towards competition. Of CPI scales Anxiety, Self-control, Tolerance and Energy of Self seem to have the most remarkable influence on sport performance by presenting the highest β values in the regression analysis. The higher level of Tolerance, Energy of Self and Self-Control, is experienced, meaning the higher degree and adequacy of self-regulation, self-control, freedom from impulsivity and self-centeredness, additionally identified with permissive, accepting, and non-judgmental social beliefs and attitudes, the more successful performance is predicted. The higher the Anxiety is, the less successful performance is estimated. Moreover, the scales of Peaking Under Pressure - performing well under pressure - were confirmed in the prediction of more successful sport performance.

We assumed that specific age and gender-related components might support the process of sport psychological counseling and preparation, therefore the successful sport performance. Furthermore, we hypothesized that the earlier psychological preparation begins the more successful sport performance might be detected in later life period. The analysis strengthened the different profile of male and female athletes, such as the importance of the factor of age variable. In general, female and young athletes tend to experience more anxiety, and less coping. Therefore, we can state that there are several important personality profiles or features, which

might vary by age and gender (cf. Boglar et al. 2008, Connelly & Janelle, 2003, Friedman & Berger, 1991, Hoar et al., 2010, Omar-Fauzee et al. 2009, Rogowska & Kusniers, 2012). In sport psychological counseling these factors and skills must be taken into consideration and developed in order to increase successful performance (Andersen, 2001, Anshel, 2003, Hardy et al. 1996, Leunes, 2011).

Practical applications

Thus, sport psychology consultants must be sensitive to how personality characteristics work, and considering gender and age might be a remarkable factor in supporting effective performance. For instance, dealing with stress and anxiety and providing coping responses should be rather started in young life period, during adolescence (particularly in early adolescence - cf. Reeves et al. 2011). Sport psychological preparation could also serve as support in the process of getting used to experiencing stress, anxiety and pressure during competition. As a conclusion we underline the importance of individual personality profiles or psychological skills and features in sport performance that should be facilitated and fostered in sport psychological preparation already in younger ages.

Limitations of the study

Among limitations the method of self-reported questionnaire should be mentioned. Sportsmen were asked to fill in the questionnaire survey independently, thus the risk of bias could be highlighted. The sample represented several sport types, thus separate analysis for different sport-specific variables was not possible; the results should be treated as generalized, non-sport type specific results. In order to receive precise information regarding the sport psychological counseling and its influence, follow-up studies should be conducted. Since fluctuation is considered to be significantly high in sport psychological counseling in Hungary, follow-up of the sample could not be carried out.

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