

# The significance of sport psychological preparation in the formation of the personality of an athlete

Abstract of PhD Theses

**Noémi Gyömbér**

University of Physical Education  
Doctoral School of Sport Sciences



**Supervisor:** Dr. Kornél Sipos, professor emeritus, PhD

**Official reviewers:** Dr. Róbert Járai, assistant professor, PhD  
Dr. Mária Lubinszki, associate professor, PhD

**President of the final examination committee:**  
†Dr. Csaba Istvánfi, professor emeritus, CSc

**Members of the final examination committee:**  
Dr. János Gombocz, professor emeritus, PhD  
Dr. Márk Bérdi, clinical psychologist, PhD

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## **1. Introduction**

Modern sport psychology is developing dynamically in Hungary. The multidisciplinary science of sport psychology is becoming increasingly important in sport sciences. The primary focus of sport psychological training and counseling is to monitor the effects of healthy and specialized performance enhancement and thus the athlete's psyche (Buda 1984, Gyömbér et al. 2013, Leunes 2011, Moore and Gardner 2001, Streaan and Strozzi-Heckler 2009). It works with performance optimization goals, strategies and techniques. Mental preparation aims to enhance the athlete's performance, monitor the athlete's psychological state, and achieve an empirically well-founded intervention, taking into account the wide-ranging diagnostic of individual-specific features. All this can be the key to an athlete's success, as international trends are increasingly reflecting that the outcome of a world competition depends to a great extent on the athlete's psychological state (Lénárt 2002).

Today, sport psychological thinking is an indispensable condition for an integrated approach, as we have to consider a number of factors and aspects when optimizing sport performance (Gardner and Moore 2006, Moore and Gardner 2001, Ward 2011). The athlete should be viewed through a system approach as there are many exogenous factors affecting his functioning. The integrative approach gives space to the individual context of the athlete and treats him holistically. In addition to performance optimization, sport psychological training focuses on the athlete's individual psychological position, characteristics and well-being, highlighting and exploiting his skills, and helps acquiring skills that enhance the athlete's psychological status at both competitive conditions and overall life (Beauchamp et al. 1996, Cohen et al. 2006, McGregor and Winter 2016, Ming and Martin 1996). During the sport psychological work the athlete's psychological profile (eg the traits of his personality) is surveyed and mapped thoroughly, in order to emphasize strengths and eliminate weaknesses later through counseling.

Earlier international and national research results demonstrated that athletes can be developed through sport psychological work, that it could improve effectiveness, achievement motivation and reduce anxiety levels. Both the national and international literature of sport psychology research focus on a broad spectrum of psychological characteristics, but also emphasize the importance of personality traits, anxiety,

confidence, concentration and achievement motivation (Fogarty 1995, Géczi 2009, Hajdúné 2009, Orosz 2009, Polgár 2006, Zusková et al. 2010). Different research results also highlight the important points used in sport psychology, thus helping to improve preparation and counseling, although they do not always reflect the areas of practical care. Based on the results of personality development-oriented research, a psychological profile can be established, where the most important psychological features, personality traits, skills and abilities are collected. Arousal regulation and anxiety treatment play an important role in an athlete's psychological profile (Anshel 1997, Hardy and Fazey 1988, Landers and Boutcher 1993, Tringer 1971). Emotions have an integral role in competitive sports. Athletes and coaches are constantly concerned about how to achieve, mobilize, and maintain the appropriate emotional level that results in their performance. To achieve this goal, they have to be able to control two emotions that play a key role in performance: anxiety and arousal. Therefore, many tests have been carried out on their manifestations and functioning in competitive situations (Baky 2011, Kerr 1985, Tóth et al. 2011, Vanek and Cratty 1970). Among the internal states to be controlled, the state of anxiety is particularly significant. It is a special multifaceted emotional phenomenon that has caused many of the most outstanding athletes to experience problems: emotional, dynamic and intellectual difficulties. Anxiety can have many causes, and it can not only have a negative inhibitory effect, but also a positive, stimulating one. Anxiety levels should not be eliminated but controlled, which can be realized through the achievement of a high degree of self-confidence where the development of self-awareness is essential. The most important factor contributing to experiencing anxiety in sport situations is cognitive evaluation. The evaluation focuses on how the athlete interprets a given situation or event and thus has a direct impact on his physiological and psychological reactions. The evaluation of stressful situations can be divided into additional categories such as harm/loss, threat or challenge. Each evaluation involves a different coping mechanism. Concentration, sustaining attention also contributes significantly to sport psychological preparedness. It is also necessary to evaluate the situation to reach the appropriate attention level. To sum up the essentials of the research results, it seems that there are common psychological characteristics, so we can presume that a certain psychological profile of athletes can be discovered, on which emphasis should be placed in the sport psychological work because it is closely related to sport performance. Among these factors we consider the following: self-confidence, increased

concentration and commitment, high level anxiety treatment, effective arousal control and coping.

## 2. **Objectives**

The objective of the research was to provide a more accurate picture of the psychological profile of athletes, along with their personality structure and abilities, and the effects of sport psychological preparation, including the best performance and the aspects of time spent in sport psychological preparation. With the help of performance tests, personality and sport psychology, we have analyzed the characteristics of a heterogeneous sample according to each sport. In addition, we have attempted to explore the specificities of sport psychological counseling, preparation and collaboration, and its effectiveness.

## 3. **Hypotheses**

Based on the literature, we have found that individually-specific, integrative and holistic sport psychological preparation can have a significant positive effect on athletes. In our own research, the following hypotheses were formulated:

### 3. 1. The role of personality factors and psychological profile in sport performance

We assumed that the personality factors of athletes have an overall impact on sport performance (H1). In addition, we think that there is a difference in the Stability-Emotionality, the Extraversion-Introversion, the Convenience and the Independence, Originality and the Leadership Control, Frustration-tolerance, Sociability, Responsibility, Performance Requirement, and Flexibility CPI factors regarding the best performance of sport (H2). We also assumed that personality factors show a difference in Social Effectiveness, Love, Conscientiousness, Emotional Control, Openness scales (BIG5) based on the best achieved sport performance (H3).

### 3. 2. Athletes' anxiety, coping and attention in sport performance

We have assumed that athletes can increase their sport performance through the acquisition of effective coping strategies, so we anticipate differences in the ACSI-28 scales (Coping with Adversity, Peaking Under Pressure, Goal Setting, Concentration, Mental Preparation, Freedom From Worry, Confidence and Achievement Motivation, Coachability) (H4). We have assumed that anxiety of athletes can be reduced through preparation and counseling. Current cognitive and somatic anxiety conditions, physical symptoms of anxiety and confidence in competition are vary in the best achieved sport performance categories (H5). We have assumed that attention is related to the best sport performance achieved, with concentrated attention affecting performance (H6).

### 3. 3. Specifications of sport psychological work

We have assumed that in the sport psychological work, the system approach, an integrative approach that holistically manages the athlete (H7), is essential for performance optimization.

## 4. **Sample and method**

We combined quantitative and qualitative methods in our exploratory research along the principle of methodological triangulation. Our quantitative data collection took place in Budapest in 2011 at the National Sports Health Institute, where the athletes filled a complete test package in the psychological examination. In addition, besides the socio-demographic data (gender, age, education), we recorded the sport, the time spent in sports psychological counseling prior to the time of the survey, and the best performance achieved so far. In addition, the test package focused on personality traits and other psychological features, such as coping, anxiety, attention.

The psychological and sport psychological test package included the following standard measuring instruments:

1) The Abbreviated (S-CPI) California Psychological Questionnaire (CPI), which has been validated and standardized in Hungary. The 21 scales of the CPI's domestic abbreviated version (S-CPI) provide a comprehensive insight into the functioning of personality, including interpersonal behavior and the emotional, performance

motivational, intellectual and moral background of social adaptation (Oláh 1984a, 1985b, Rózsa et al. 2006). S-CPI-21 Scales: Domination (DO), Capacity of Status (CS), Sociability (SY), Social Presence (SP), Self-acceptance (SA), Sense of Well-being (WB), Anxiety (AN), Responsibility (RE), Socialization (SO), Self-control (SC), Tolerance (TO), Independence (ES), Good Impression (GI), Communality (CM), Achievement via Conformance (AC), Achievement via Independence (AI), Intellectual Efficiency (IE), Psychological-mindedness (PY), Empathy (EM), Flexibility (FX), Femininity (FE). In addition, using the CPI scales, Big Five personality dimensions are also available: Social Efficiency, Love, Conscientiousness, Emotional Control, and Openness dimensions.

2) In the development of Athletic Coping Skills Inventory-28 (ACSI-28), Smith and his associates are to be mentioned (Crocker et al. 1998, Smith et al. 1995, Kimbrough et al. 2007). The Hungarian adaptation of the questionnaire was elaborated in 2000 by Jelinek and Oláh (Jelinek 2000). The scales of the questionnaire measure the following: Coping with Adversity, Peaking Under Pressure, Goal Setting, Concentration, Mental Preparation, Freedom From Worry, Confidence and Achievement Motivation, Coachability.

3) Competitive State Anxiety Inventory (CSAI-2) (Cox, Russell and Robb 1998, Martens et al., 1990). The questionnaire was adapted and standardized in Hungary by Sipos et al. in 1994 (Sipos et al. 1999). The scales used in the questionnaire focus on the factors of Cognitive Anxiety, Somatic Anxiety and Confidence.

4) Lastly, the Pieron Attention Test (Pieron et al., 1952) - the most widely used attention test method, where the test person should draw a certain combination of letters from a series of letters by focusing his attention. The task primarily measures the general psychomotor pace, and attention concentration. In addition, it also shows the persistence of the subject, his commitment to the task, and his motivation.

Our qualitative analysis was based on an athletes' self-report analysis, also. We attempted to involve the subjects of quantitative data collection in our qualitative examination, but only 14 people committed themselves to preparing a written self-report within one month. The athletes made a brief report through instructions including

how to describe the experiences they have gained in sport psychological counseling, and how have that influenced their performance. In the qualitative study, subjects were given a semi-structured instruction according to which they had to answer this question freely: "What is your personal experience and opinion about sport psychological preparation?" The received reports were then subjected to content analysis using the dimensions of Hanin (2003). The main themes are thus the "Form" - a cognitive, affective, motivational dimension; "Time" - time dimension; "Content" - task-focused dimension; "Context" - situational dimension; and finally the content elements of the "Intensity" - subjective experience dimension.

#### 4.1 About the sample

The total sample (N = 185) in the OSEI Psychology Ambulance was a group of athletes receiving sport psychological care over a defined period of time (average age: 21.2, standard deviation: 7.2). Heterogeneity is indicated by the presence of over 30 sports in the sample. We found the highest frequency in the following sports: karate, fencing, followed by kayaks and tennis. The sample was coded according to Rókusfalvy's clustering of sports (1981). Most of the responding athletes pursue some kind of combat sport (28.6%), human-powered sport (13%), or spatial and temporal sport (13%). We also find a large proportion of respondents pursuing team sports (11.4%) or double sports (10.8%). For further analysis, the sports were classified into dichotomous categories. The time of sport psychological counseling was also evaluated. Based on the time spent in counseling, 40.5% of the sample participated in sport psychological preparation for less than one year, while the remaining 59.5% of the sample for more than a year. Women were found to be overrepresented. Sport performance - the best achievement so far - was studied with a three-category variable, where we measured international, national and other sport scores. During the encoding, the international category contained ranked 1-3. places, while the national category the national tournaments' 1-3. places. The other category covered 4th or worse rankings in international and national tournaments as well as the results of county races. In the sample, the share of international achievers is 8.6%, the share of those with national outcomes is 25.9%, and 65.4% of had other achievements. In addition, the older the athlete was, the more effective he was considered.

## 5. Results and discussion

### 5.1. The heterogeneous athletes' model - the socio-demographic determination

During our quantitative data collection, demographic differences drew attention to important differences. By examining our sample by gender, we have found that there are significant differences in the choice of sports. We also found significant differences in the choice of sports according to age groups. For example, it has been observed that younger people prefer structured spaces, while "older" age groups favor outdoor sports. Young people under the age of 21 mostly chose individual sports. As school education has been closely linked to age, it is not surprising that the choice of sports has also developed accordingly. Consequently, it can be stated that the choice of sports vary in consonance with socio-demographic characteristics. Due to the heterogeneity of the sports, sport-specific conclusions can not be drawn, but it is important to note the role of sport as a highlight in the preparation.

### 5.2. Discussion of the psychological profile

In terms of analysis, the dimension of Sociability played a prominent role. Based on this, those who can easily and efficiently integrate into different communities and have superior skills above the average to develop social relationships, benefit from it. As demonstrated by earlier theories, we found gender differences along the psychological variables (Gyömbér et al., 2013, Gyömbér et al., 2016a, Géczi 2009, O'Sullivan 1997). The results showed that women scored significantly higher than men on the scales Self-acceptance, Good Impression, Communality, Achievement via Independence, and Intellectual Efficiency. This means that women are more aware of their personal values, skills, have a higher level of self-esteem, are satisfied with their established social status and role, are able to create a positive impression, intrinsically motivated, creative and sensitive to problems, and they also vividly inquiring and intellectually effective.

Significant differences also emerged at the age, and the results showed differences in the groups of athletes under and above the age of 21. Younger people below the age of 21 scored higher points on scales Domination, Sociability, Self-Acceptance, Anxiety, Social Presence, Good Impression, Achievement via Conformity



and Intellectual Efficiency. These results have shown that the younger age group is able to unite, organize and guide communities, easily and efficiently integrate into different communities, their social skills are advanced, they are aware of their values, abilities, they have high self-esteem, are satisfied with their established social situation and their role, they can create a positive impression, their orientation towards achieving performance is fundamentally stimulated by external/extrinsic motives, and are intellectually effective, interested. In the interpretation of these results, it is essential to emphasize the characteristics of the age and the role of youth development. During the analysis, personality traits were subjected to a multi-point analysis so that the difference between sex, age and gender and age interaction could be traced. An interesting result of the personality test is the dominant influence of age and the significance of gender in the case of Good Mood and Communality. It is also important to point out that the interaction effect of gender and age was detectable for many scales, so the athlete's personality is determined together and complexly. After gender and age effects, it is worth mentioning other factors that may indicate definite differences. For example, the nature of sport, which draws attention to sport-specificity.

The results confirm the fact that we can talk about some kind of psychological profile regarding athletes. Among the features we can find a solid self-esteem, confidence, self-control and a high level of ambition.

### 5.3. The relations of time spent in sport psychological counseling and sport achievement

Interestingly, there was no significant relationship between the time spent in sport psychological counseling and the variable of sport achievement. Sport performance itself can include many factors. The conceptual understanding of the athlete's needs is an important basis for approaching the sport performance integrative model, where the athlete is considered to be an individual who exists and develops in the athletic world, and sometimes faces certain sporting challenges and demands but also struggles with endogenous conditions and exogenous life events and circumstances (Gardner And Moore 2006, Ginger 2011, Moore and Gardner 2001). Athletes' performance therefore includes basic personality factors, a specific set of skills, circumstantial requirements and co-ordinated strategies for coping that characterize the performance area. The key to psychological preparation is the assessment of

psychological characteristics and then placing it into an athlete's self-concept through effective tools.

In the knowledge of our results, we need to ask how the effectiveness of sport psychology should be measured, and what is the effectiveness of sport psychological counseling. In formulating the answer, we must emphasize the fact that the effect of sport psychological counseling is truly present in sport performance, but we can not measure it solely through the effectiveness of counseling. It is wiser to work with finer variables, categories, and long-term follow-up studies in the future. Furthermore, it is undoubtedly important to reveal in the future what method or accurate indicator could be used to demonstrate the effectiveness of sport psychological preparation and counseling. Undoubtedly, it is worthwhile to make self-reports part of the counseling (with structured open questions), as self-reporting, and the qualitative methods themselves, can make a significant contribution to the evaluation of sport psychological work, so it can be a method of satisfaction and efficiency measurement.

#### 5.4. The role of personality factors and psychological profile in sport performance

The results showed that sport performance is influenced by different personality factors, especially the - formerly high average - Sociability, Social Presence, Self-acceptance and Self-control. So the higher the athlete's ability to effectively fit in, his confidence in interpersonal space and his self-satisfaction and tension control, the better sport performance can he achieve (Allen and Laborde 2014). In the present study, therefore, the role of sociability can be underlined several times as the part of the athlete's profile that influences sport performance. Based on the results of the study, the first hypothesis can be considered justified and the second is partially justified.

In the age group analysis, in the younger age group, Sociability and Self-acceptance proved to be significant (see the main characteristics of the earlier life stage), while the older group there were significantly more personality factors showing effects. For this reason, psychological preparation should be strengthened and therefore preparation and the exploitation of psychological features should be started early among young athletes (Gyömbér et al., 2016b). However, it is also important to emphasize that Sociability and Self-acceptance play a vital role in sport performance regardless of age.

The role of Sociability is particularly important, as it is unattached to both age and gender as well.

Based on the Big Five dimensions, Love and Social Efficiency reached the highest average, while Openness and Emotional Control were the lowest. A high level of love, friendliness, emotional support, and self-confidence were general in the whole sample of athletes; as well as lower creativity and vulnerability. The key role of Social Efficiency in the athlete's personality was already emphasized by a number of studies (Arai and Hisamichi 1998, Douse and McManus 1983, Mannell and Kleiber 1997, Nickerson and Ellis 1991, Kovács 2005), and it was supported by our own research results as well.

The average score for women and men in Social Efficiency and Openness scales showed significant differences, with women achieving significantly higher scores. Confirming CPI results, women seem to be more creative and responsive to issues, vividly interested, open, and intellectually effective. The high scores achieved in the Social Efficiency dimension emphasize the sociable character, which is also consonant with the results observed in the CPI test, such as having high social maturity, sociability, cooperation and high social responsiveness. The age effects again are considerable regarding the Big Five Dimensions, but attention must be drawn again to the non-combined effect of age and gender. Results showed that the interaction between age and age-gender was the most significant in the personality test.

As for the hypothesis (H3), we also assumed that the personality factors in the scales of Social Efficiency, Love, Conscientiousness, Emotional Control, Openness (Big Five) will differ based on the achieved sport performance. On this sample, this hypothesis could not have been verified. The analysis did not show a statistically significant difference in Big Five dimensions in the groups divided by sport achievement, only to the extent that dimensions can affect performance.

##### 5.5. The role of athletes' anxiety, coping and attention in sport performance

The Competitive State Anxiety Inventory (CSAI-2) measured the athletes' current anxiety, current cognitive and somatic anxiety about competition (Martens et al.,

1990). The highest average score can be found on the Confidence scale, and the more frequent appearance of cognitive anxiety can be seen opposed to the less frequent somatic anxiety. According to our results, we can emphasize the negative correlation of anxiety with self-confidence, as well as Hajdúné's studies did, which shows that anxiety decreases as self-confidence increases due to race results. (Hajduné 2003, 2004). Freedom From Worry means that an athlete is not filled with anxiety if his performance falls short of his level of preparedness, and is not worried about how others are judging his performance after a race. In our results, Freedom From Worry was represented in the highest number among outdoor sports athletes. Also in Géczi's survey, the coping questionnaire (ACSI-28) dimension Freedom From Worry showed significant differences between national and non-national reps, where the more experienced the players were, the lower the anxiety level was. Although Géczi's studies emphasize the importance of age, gender differences must also be examined. In our study, gender differences were significant (in scales Freedom From Worry, Confidence and Achievement Motivation, Peaking Under Pressure, Concentration), male athletes achieved higher averages in six factors. Only Coachability was significantly stronger among women.

By age, except for the Concentration scale, older athletes achieved higher averages. The differences between the averages in the Peaking Under Pressure scale showed statistically significant differences in favor of the elderly, so we can conclude that they are able to achieve higher performance in competitive situations, probably because this factor is better integrated into their athlete's psyche due to their racing experience. Taking the sub-scales into consideration, our results do not fit Géczi's results as he pointed out that the Coachability results was relatively low among hockey players (Géczi 2009). This is contradicted by our own aggregated data, according to which Coachability reached the highest average among the respondents. The contradiction can be solved with the sport's specificity, which is the examination of the hockey players featuring Géczi's study against our own research, where we have worked with a heterogeneous sample. Sport specificity can contribute to refining the results, such as combat athletes, among whom we found lower scores on Coping with Adversity and Concentration scales. In this case, it is necessary to yet again emphasize the role of sport-specificity in sport performance and sport psychological work. From the attention's point of view we can also see gender or age group differences. Women and the younger age group have reached lower scores on the scales of Attention and Work

performance. So, in our sample, concentrated attention was more pronounced among "older" male athletes. We can recommend that methods for the effective development of concentration should be taught, starting from young age (Orosz 2009).

Relating the listed psychological characteristics to achievement, regression analysis and variance analysis were performed. In the case of the ACSI-28 scale, the regression model was not proven to be adequate, so we must conclude that the coping scales had no impact on the sport performance in our sample. Additionally, the variance analysis did not indicate significant differences in the sport performance categories, so the fourth hypothesis that „H4: Athletes can enhance their performance through the acquisition of effective coping strategies, so we expect ACSI-28 scales to vary based on sport performance”, must be abandoned on this sample.

In the CSAI-2 anxiety scales, the regression model was not satisfactory either. However, the variance analysis has drawn attention to a tendency-based deviation that the Competition confidence was the highest among those who had the best international achievements. Competition confidence showed a significant negative correlation with both cognitive ( $r = -0.769$   $p < 0.001$ ) and somatic anxiety ( $r = -0.734$   $p < 0.001$ ), so as confidence in the competition outcome increases, anxiety decreases.

Our sixth hypothesis assumed that „H6: Attention is related to sport performance, concentrated attention affects performance.” We have to outline our sixth hypothesis on this sample because we did not find any significant correlation between attention and sport performance.

In summary, despite the fact that we did not find any significant predictive effect on the aforementioned psychological variables for sport performance, we must point out that it is necessary to continuously monitor and exploit them through the sport psychological preparation. Independently, neither anxiety, coping or attention scales did clearly predict the improvement or deterioration of sport performance, but in a complex model the Competitive Achievement - viewed with personality traits - is still a significant factor.

## 5.6. Specifications of sport psychological work

Sport psychology emphasizes performance enhancement and its impact on the individual's psyche, working with goals, strategies and techniques for performance optimization (Gyömbér et al., 2012, Moore and Gardner 2001, Streat and Strozzi-Heckler, 2009). The objective of sport psychology is to enhance the performance of athletes, to understand and mitigate certain psychological constraints; it thoroughly analyzes the athlete before starting an empirically-based intervention. Both sport psychology and athletes have a growing interest in cognitive, affective and behavioral strategies that can help with optimizing competitive performance. In the quantitative study, we have seen that more than a half of the athletes have been involved in sport psychological preparation for more than a year at the time of our research. In addition, as it was stated in the self-reports, it is not uncommon for preparation to last from intensive shorter periods to many years. It is important to point out that to this date, it is typical in the domestic practice that many athletes with negative attitudes, already experiencing great problems are advised to visit a sport psychologist for sudden intervention before competition.

In addition, it is particularly important to emphasize that based on self-reports all athletes have a positive experience regarding sport psychology. After their initial skepticism, they all reported that the beneficial effects of counseling and preparation were perceptible. Regardless of how much time they spent in sport psychological counseling, many of them mentioned that in the future, besides physical training, they would also like mental training to be a part of their preparation. They feel the necessity and positive advantage of sport psychological work, which contributes to their preparedness and thus to their sport performance (Cockerill 2002, Moore and Gardner 2001). According to the positive opinions of the self-reporters, it is worthwhile to work on a holistic and integrative approach to sport psychological preparation and counseling as part of everyday life for athletes of any age. Athletes should be able to concentrate on balanced psychological functioning and to enhance their sport performance with continuous sport psychological support.

After analyzing the dimensions, based on the answers, our hypothesis that „H7: In sport psychological work - in order to achieve optimum performance - a system

approach, an integrative approach that holistically treats the athlete is inevitable”, can be considered verified.

## **6. Conclusions and suggestions**

Modern sport psychology is developing dynamically in our country, so more and more is known about its beneficial effects. It is essential to constantly monitor the psychological condition, the psychological profile and psychological well-being of athletes, and to emphasize individual strengths. There is no doubt that many personality factors, psychological characteristics and skills contribute to good sport performance. Consequently, existing resources should be exploited and skills, such as anxiety management and the usage of effective coping techniques, need to be developed.

We may also find that the earlier the psychological preparation of an athlete begins, the more efficient it is in exploiting the benefits of psychological factors, so it is worthwhile to start sport psychological counseling at a young age, in the practice of youth development. Sport psychological training should therefore be considered thematically, allowing the athletes' life situations and their age-related problems to determine the course of sport psychological work. In addition, gender features and differences as well as sporting features should be considered in sport psychological work. There is a need to broaden the range of research to age and sport-specific differences, so a large number of comparable research data should be sought for a better overview.

There is a special role for „personalization” through the process of preparation: one must concentrate on the individual, and develop a personal plan to follow. The holistic approach could be facilitated by the use of projective tests in counseling, which are suitable for global assessment of personality, but also have subjectivity as an important element. The athlete must be observed as an integrative individual. The athlete must be followed in a system approach that is constantly changing - not only the athlete but his environment (teammates, coaches, etc.) must also be followed and involved in sport psychological work.

Coaches play an important role in the athletes' environment. Therefore, it should also be emphasized that the coaches should integrate sport psychology into their work, and both the sport psychological awareness of the coaches and their willingness to cooperate should be increased.

In addition to the above, we have raised a novel and indispensable question for future work, namely the determination and the need to measure the success and efficiency of sport psychological preparation and counseling. In the future, it is indispensable to try to answer that exactly how, with what kind of quantitative or qualitative methods - indicators, or structured open questioned self-reports - could we measure the effectiveness of sport psychological work. It is well known that sport psychology is a key factor in athletic performance, it contributes to successful sport performance at a number of points. However, sport performance can not be the sole measure of sport psychological work.



## List of publications by the author

Publications related to the topic of the dissertation

**Gyömbér, N., Lénárt, Á., Kovács, K. (2016a)** Do psychological factors play a crucial role in sport performance? – Research on personality and psychological variables of athletes in Hungary. *Cuadernos de Psicología del Deporte*, 16(1), 223-232.

**Gyömbér N., Kovács K., Ruzits É. (2016b)** *Gyereklélek sportcipőben. Fiatalok és utánpótlás sportpszichológia mindenkinek.* Noran Libro Kiadó. Budapest

**Gyömbér, N., Lénárt, Á., Kovács, K. (2013)** Differences between Personality Characteristics and Sport Performance by Age and Gender. *Acta Facultatis Educationis Physicae Universitatis Comeniana*, Publicatio LIII/II. 5-17.

**Gyömbér N., Kovács K., Imre Tóvári Zs., Lénárt Á., Hevesi K., Menczel Zs. (2012)** *Fejben dől el. Sportpszichológia mindenkinek.* Noran Libro Kiadó, Budapest.

**Gyömbér N. (2011)** Sportteljesítmény a klinikai sportpszichológia tükrében. *Kalokagathia*, 2-4: 86-102.