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# COMPETITIVE ANXIETY, SELF-CONFIDENCE AND PSYCHOLOGICAL SKILLS IN TOP ATHLETES WITH AND WITHOUT DISABILITIES: A PILOT STUDY

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**Abstract**. *To test our premise of the positive impact of sport activities on the psychological health of persons with disability, which implies psychological well-being and the ability to live a full and creative life, we compared a profile of the specific psychological characteristics of athletes with disability (N=12) and without disabilities (N=12). The results of this pilot study indicate that there is only one significant difference between top athletes with and without disability, only in achievement under pressure (F=4.655, p=.043). The psychological profile of athletes with disability is very similar to the profile of athletes without it, which proves that sport positively contributes their physical strength making them equally ready for top results in sport as athletes without disabilities. Practicing sport has a positive impact not only on the sport Self-confidence (SCI) but on Global Self-Esteem (GSE) of athletes with disabilities. Their competitive anxiety is optimized (SCATr) and their psychological skills for overcoming stress are improved (ACSI28), so they are not different from their peers without disabilities. The age of athletes with disability is in a significantly positive correlation with the strength of their global self-esteem (r= .88, p= .001), with self-confidence and motivation for achievement in sport ACSI-coam (r= .67, p= .023) and in a negative correlation with their competition anxiety (r= -.65, p= .022). We can conclude that with the growth of their competitive experience their sport confidence grows, especially psychological resilience (r=.64, p=.45).*

**Key words**: *sport, disability, psychological characteristics specific for sport.*

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## INTRODUCTION

A number of studies show that sport is an important factor that positively contributes to the better psychological health of persons with disabilities as it makes the process of their re-socialization, adaptation and rehabilitation faster and easier, makes them stronger and more prepared to accept their handicap and to cope with different biases which threaten their sense of self-esteem and competence. The research done by Kirkby (1995) showed that athletes with disabilities say themselves that the main reasons for their participation in sport are psychological benefits such as: to develop self-confidence, regain self-esteem, and achieve social benefits. Omar-Fauzee et al. (2010) found five factors that influence the participation of individuals with disability in sports: fun, support, fitness, reward, and stress reduction. Ferreira & Fox (2008) got completely different results researching physical self-perception and self-esteem in male basketball players with and without disability. They explain this with unequal sport experience and the frequency of sport engagement per week. Comparing the personality profiles of basketball players with and without disability, Kasum et al. (2012) found that they significantly differ in 5 of 16 personality traits. Wheelchair basketball players, compared with basketball players without disability, were more emotional, less willing to do team work and cooperation, more naive and unpretentious. In another study, Kasum et al. (2011) showed that persons with disability engaged in sport, based on some personality characteristics, are significantly different from non athletes with disability, where their psychological profile is an indicator of higher psychological integrity, maturity and adaptability. Scarpa (2011) studied the role of physical activity and sports participation in physical self-concept and self-esteem in adolescents and young adults with and without physical disability. The results revealed that individuals with physical disability who practiced sport obtained similar results to the people without disability who practiced sport in ten of the eleven Physical Self-Description Questionnaire scales. The investigation showed that persons with physical disability who practice sport possessed positive physical self-concept and good self-esteem. The results of a large number of studies (Smith & Christensen, 1995; Geczi, 2009; Cox et al., 2010; Nikolić et al. 2011), in which the Athletic Coping Skills Inventory-28 was used to measure sport-specific psychological skills, unambiguously proved the usefulness of the ACSI-28 in predicting performance outcomes in collegiate baseball, in differentiating the Olympic champions from other less successful athletes, in the prediction of the competing success of athletes, hockey players selection, the prediction of subjective athletic performance, the differentiating of elite from non-elite level athletes. Studies (Bačanac et al., 2011; Kitanović, 2011) showed that male athletes, older athletes, who have more sport experience and those who practice contact sport games, have more developed psychological skills for overcoming stress than female athletes, younger athletes with less sport experience and athletes who practice non-contact sports and martial arts. The link between anxiety and performance in sport has been known for a long time, documented by empirical studies and explained by different theories, different questionnaires were developed to measure it and many techniques for its regulation were developed. By investigating the pre and poscompetitive anxiety and self-confidence of Portuguese athletes with disability, Ferreira et al. (2007) found that the athletes with disabilities show a similar pre-competition anxiety response to athletes without disability regarding the cognitive and somatic dimensions. Kolayis (2012) examined how self-esteem and

motivation levels influence the state and traits of wheelchair basketball players, as well as anxiety levels. The results indicated that self-esteem, intrinsic motivation, extrinsic motivation and amotivation predicted a 42% variance in state anxiety and a 50% variance in trait anxiety. The author concluded that motivation and self-esteem are the best predictors of traits and anxiety among the premier league wheelchair basketball players. The results of the research of Bačanac & Juhas (2004) proved that sex, age, competition experience and type of a sport presents significant predictors for their competitive anxiety. By influencing on the athletes` anxiety, these factors indirectly influence their competitive performance quality. The results of studies (Machida, 2008; Bačanac et. al, 2010) are often not consistent and unambiguous, and studies were mostly focused on general psychological constructs (apart from competitive anxiety and coping skills) which are not specific to sport. Their influence on sport achievement is not obvious and direct just like their relationship to general psychological well-being and health. Therefore, in this study we want to cover those psychological characteristic that are more directly tied with success in sport, including coping skills, sport self-confidence and competitive anxiety. Besides the description of the psychological characteristics of top athletes' with and without disability, defining similarities and differences in their sport-specific psychological profiles components, we wanted to investigate if those psychological components are under the influence of their age and sport experience. We expect that sport practice will have a positive influence on the global self-esteem of persons with disabilities, their sport-confidence and the development of their psychological skills for overcoming pressure and stress, and that they will not significantly differ from persons without disabilities that practice similar sports. In line with the results of previous studies, we expect that participation in top quality sport contributes to psychological improvement of persons with disability, helps them to build positive attitudes toward themselves, general and sport competence, and become more skillful in overcoming stress in sport and other life situations.

## THE METHOD

### Participants

The study includes 24 top athletes (participants in Olympic and Paralympic games, World and European championships) divided into two subsamples: 12 athletes with disability, 5 with sight impairment, 5 wheelchair athletes, 1 with audition impairment and 1 with impaired arm range movement. We attempted to make sure that the sample of athletes without disability, in terms of their age and the nature of the sport they are practicing is as similar to the sample of athletes with disabilities. We succeeded because they are statistically not significantly different based on average age (28.58±5.71 years - athletes with disabilities, and 26.21±6.36 – without disabilities). Athletes with disabilities practice athletics (7), shooting (2), table tennis, chess, and cycling (per 1), and those without disabilities practice athletics (8), table tennis (2), shooting and cycling (per 1). The sex composition of the participants in both patterns is similar (2 females and 10 males). The significant difference between the two samples is only in the duration of sport experience. Though athletes with disability are slightly older than athletes without disability, their sport experience is statistically significantly shorter (13.50±6.43:

8.04±3.90 years), which confirmed the fact that they took up the sport later, mostly when they encountered their own disability.

**The instruments**

Age and sport experience were used as independent variables, while the small number of female participants presents a limiting factor for the assessment of the nature and level of gender relation to the athletes' psychological characteristics. The set of dependent variables covers 14 psychological components. For the estimation of ***Global Self-Esteem*** (GSE) we used the Self-Esteem Scale RSES (Rosenberg, 1965). In the Serbian version of the instruments, the item are accompanied by a 5-point scale on which each participant responds from strongly agree (5) to strongly disagree (1). Global Self-esteem is represented by the sum of all item scores, providing a possible range from 10 to 50. ***Sport-confidence*** (SC) is "beliefs or degree of certainty that individuals possess about their ability to be successful in sport" (Vealey, 1986, p. 222). Vealey & Knight (as cited in Machida, 2008) developed a ***Sport-Confidence Inventory*** (SCI), which measures: *Physical skills and training (SC-pst), Cognitive efficiency (SC-cef)* and *Resilience (SC-res).* The three subscales can be summed up to form an overall sport-confidence score (SCI-tot). The results of studies carried out in Serbia showed accepted coefficients of reliability in the Serbian version of the SCI (Bačanac et al., 2010; Bačanac et al., 2011). The ***Athletic Coping Skills Inventory-28*** (Smith et al., 1995) was used to measure the Coping Skills in Sport. The ACSI-28 measured seven psychological skills: coping with adversity, peaking under pressure, goal setting/mental preparation, concentration, freedom from worry, confidence and achievement motivation, and coachability. The internal consistency for the total ACSI-28 score was .86, and for the subscales Cronbach's-α coefficients ranging from .62 (Concentration) to .78 (Peaking under Pressure). The Serbian version of the scale was defined by Bačanac et al. (2011). Its psychometric properties were accepted and approved by the Seven-factor structure instruments (Kitanović, 2011). Smith and Christensen (1995) give the following description of ACSI-28 subscales: Coping with Adversity (*ACSI-cwa*) - Remains positive and enthusiastic even when things are going badly; remains calm and controlled; can quickly bounce back from mistakes and setbacks. Coachability (*ACSI-coac*) - Open to and learns from instruction; accepts constructive criticism without taking it personally or becoming upset. Concentration (*ACSI-conc*) - Not easily distracted; able to focus on the task at hand in both practice and game situations, even when adverse or unexpected situations occur. Confidence and achievement motivation (*ACSI-cfam*) - Confident and positively motivated; consistently gives 100% during practice and games and works hard to improve skills. Goal setting and mental preparation (*ACSI-gsmp*) - Sets and works toward specific performance goals; plans and mentally prepares for games; has a clear game plan for performing well. Peaking under pressure (*ACSI-pup*) - Feeling challenged rather than threatened by pressure situations and performs well under pressure; a clutch performer. Freedom from worry (*ACSI-ffw*) - Not pressuring oneself by worrying about performing poorly or making mistakes; not worried about what others will think if he/she performs poorly. Overall athletic psychological skills or total personal coping resource score (*ACSI-tot*) – Total score of all seven subscales. The ***Sport Competitive Anxiety Test*** (*SCAT r*) was used as a measure of Sport Competitive Anxiety**.** SCATr is the extended version of Martens' SCAT which was extended by Bačanac, and its psychometric

properties were established in the Serbian Institute of Sport (Bačanac et al, 2011). The test contains 10 original Martens' items without five dummy statements and 20 new indicators of somatic and cognitive anxiety. Reliability and concurrent validity of the SCATr was approved in various studies (Bačanac et al., 2011).

### The procedure

The athletes were tested at the Serbian Institute of Sport within regular control of functional and motor abilities, the health and psychological status of candidates for Olympic and Paralympic Games. The athletes completed the tests, individually or in a group, but always in the presence of a psychologist. After they were informed about the purpose of measuring and the confidentiality of the acquired data, all of the athletes gave their consent and voluntarily completed the psychological inventory.

### Statistical analyses

The statistical analyses were carried out using SPSS version 13.0 for Windows. The one way ANOVA was applied to the studied variables and in order to determine the differences between the athletes with and without disabilities. The correlation between psychological measures was calculated (Person's r), and the Mann-Whitney U test is used for examining the difference among athletes within subsamples according to their age and sport experience.

## THE RESULTS

In table 1, descriptive statistics are given for sport experience, global self-esteem, sport-confidence, SCATr, ACSI subscales, as well as the one-way ANOVA results between athletes with and without disabilities. The sport experience of athletes without disabilities is significantly longer, though their average age is similar to the athletes with disabilities. It tells us that the athletes with disabilities enter sport much later than athletes without disabilities, and most of them after they experienced their own disability. The results of the one-way ANOVA show that between athletes with and without disabilities there are no statistically significant differences in their general qualities, i.e. global self-esteem, as well as the level of confidence in their abilities of being successful in sport. The overall personal coping resource score of athletes with disabilities does not differ from the coping potentials of athletes without disabilities; in addition, there is no difference in their scores in six from seven ACSI-28 subscales. Top athletes with disabilities are differ significantly from their colleagues without disabilities only in lower peaking under pressure. All other psychological skills: coping with adversity, concentration, coachability, confidence and achievement motivation, goals setting and mental preparation and freedom from worry were equally developed in both groups of athletes.

**Table 1** Means and standard deviations GSE, SCI, SCATr and ACSI subscales with ANOVA results between athletes with and without disability

| Disability | | N | AS | SD | ANOVA | |
|---|---|---|---|---|---|---|
| | | | | | F | p |
| Sport experience | With | 12 | 8.04 | 3.90 | 6.320 | .020 |
| | Without | 12 | 13.50 | 6.43 | | |
| GSE | With | 10 | 40.90 | 6.79 | .062 | .805 |
| | Without | 12 | 40.33 | 3.65 | | |
| SC - tot | With | 10 | 5.91 | .57 | .026 | .873 |
| | Without | 12 | 5.86 | .71 | | |
| SC - pst | With | 10 | 6.18 | .58 | .945 | .343 |
| | Without | 12 | 5.93 | .60 | | |
| SC - cef | With | 10 | 5.84 | .56 | .030 | .864 |
| | Without | 12 | 5.90 | .96 | | |
| SC- res | With | 10 | 5.70 | .73 | .015 | .903 |
| | Without | 12 | 5.75 | 1.09 | | |
| SCAT-r | With | 12 | 47.17 | 15.06 | .540 | .470 |
| | Without | 12 | 51.25 | 11.98 | | |
| ACSI-tot | With | 11 | 56.55 | 9.53 | .231 | .636 |
| | Without | 12 | 58.42 | 9.15 | | |
| ACSI-cwa Coping with adversity | With | 11 | 7.82 | 1.89 | .379 | .545 |
| | Without | 12 | 8.33 | 2.10 | | |
| ACSI-coac Coachability | With | 11 | 10.00 | 1.55 | 1.139 | .298 |
| | Without | 12 | 9.08 | 2.43 | | |
| ACSI-conc Concentration | With | 11 | 7.82 | 2.09 | 1.606 | .219 |
| | Without | 12 | 8.92 | 2.06 | | |
| ACSI-coam Confidence / Achievement motivation | With | 11 | 9.36 | 1.91 | .033 | .857 |
| | Without | 12 | 9.50 | 1.68 | | |
| ACSI-gsmp Goal setting / mental preparation | With | 11 | 8.18 | 2.99 | .137 | .715 |
| | Without | 12 | 7.75 | 2.60 | | |
| ACSI- pup Peaking under pressure | With | 11 | 5.45 | 2.46 | 4.655 | .043 |
| | Without | 12 | 7.33 | 1.67 | | |
| ACSI-ffw Freedom from worry | With | 11 | 7.91 | 2.25 | .113 | .740 |
| | Without | 12 | 7.50 | 3.40 | | |

Significant correlation coefficients of psychological variables with age and sport experience in both subsamples pf athletes are given in table 2. The fact that subsamples are small, decreases the possibility of reliable and generalized conclusions about the possible age and sport experience impact on the other three psychological coping skills (coping with adversity, freedom from worry, goal setting/mental preparation) and cognitive efficiency as one of three components of sport-confidence.

**Table 2** Correlations between age, sport experience and psychological variables for total sample with subsample of athletes with and without disabilities

| Age | All athletes | | | With disability | | | Without disability | | |
|---|---|---|---|---|---|---|---|---|---|
| | N | r | p | N | R | p | N | **r** | **p** |
| SCAT-r | 24 | -.430 | .036 | 12 | -.652 | .022 | 12 | -.154 | .633 |
| GSE | 22 | .576 | .005 | 10 | .880 | .001 | 12 | .219 | .494 |
| SC - rez | 22 | .396 | .068 | 10 | 264 | .461 | 12 | .490 | .106 |
| ACSI - conc | 23 | .336 | .117 | 11 | .228 | .500 | 12 | **.578** | **.049** |
| ACSI - coam | 23 | **.414** | **.050** | 11 | **.672** | **.023** | 12 | .203 | .527 |
| ACSI - pup | 23 | .395 | .062 | 11 | .522 | .100 | 12 | **.612** | **.035** |
| ACSI – coach | 23 | -.268 | .216 | 11 | .047 | .892 | 12 | -.546 | .067 |
| Sp. experience | N | r | p | N | R | p | N | r | p |
| SC - fv | 22 | .176 | .518 | 10 | .590 | .073 | 12 | -.382 | .220 |
| SC - rez | 22 | **.475** | **.026** | 10 | **.643** | **.045** | 12 | .470 | .123 |
| ACSI - conc | 23 | **.430** | **.041** | 11 | -.014 | .967 | 12 | **.578** | **.049** |
| ACSI - coam | 23 | .320 | .137 | 11 | .537 | .089 | 12 | .253 | .428 |
| ACSI - pup | 23 | **.577** | **.004** | 11 | .289 | .389 | 12 | **.694** | **.012** |
| ACSI - coach | 23 | -.353 | .099 | 11 | .308 | .357 | 12 | -.492 | .104 |

**Table 3** Mann-Whitney U test: differences in psychological profiles of athletes with and without disabilities according to their age and sport experience

| Age | | Athletes without disabilities, N=12 | | | | | Athletes with disabilities, N=12 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | MR | MWU | Z | Sig | N | MR | MWU | Z | Sig |
| SCAT-r | Younger | 6 | 6.75 | 16.5 | -.241 | .818 | 6 | 8.58 | 5.5 | **-2.012** | **.041** |
| | Older | 6 | 6.25 | | | | 6 | 4.42 | | | |
| GSE | Younger | 6 | 6.75 | 16.5 | -.241 | .809 | 5 | 3.00 | 0.0 | **-2.627** | **.008** |
| | Older | 6 | 6.25 | | | | 5 | 8.00 | | | |
| SC-rez | Younger | 6 | 4.50 | 6.0 | -1.925 | .065 | 5 | 4.10 | 5.5 | -1.471 | .082 |
| | Older | 6 | 8.50 | | | | 5 | 6.90 | | | |
| ACSI - coam | Younger | 6 | 5.00 | 9.0 | -1.467 | .180 | 5 | 3.00 | 1.5 | **-2.499** | **.009** |
| | Older | 6 | 8.00 | | | | 6 | 8.25 | | | |
| ACSI - pup | Younger | 6 | 4.33 | 5.0 | -2.139 | .041 | 5 | 3.40 | 2.0 | **-2.435** | **.017** |
| | Older | 6 | 8.67 | | | | 6 | 8.17 | | | |
| | Sp. Exp. | N | MR | MWU | Z | Sig | N | MR | MWU | Z | Sig |
| SCAT-r | Less exp. | 5 | 7.40 | 13.0 | -.732 | .530 | 4 | 5.00 | 10.0 | -1.224 | .268 |
| | More exp. | 7 | 5.86 | | | | 6 | 7.57 | | | |
| GSE | Less exp. | 5 | 6.30 | 16.5 | -.163 | .876 | 4 | 5.13 | 10.5 | -.322 | .762 |
| | More exp. | 7 | 6.64 | | | | 6 | 5.75 | | | |
| SC -rez | Less exp. | 5 | 5.30 | 11.5 | -.976 | .343 | 4 | 3.63 | 4.5 | -1.609 | .114 |
| | More exp. | 7 | 7.36 | | | | 6 | 6.75 | | | |
| ACSI - coam | Less exp. | 5 | 5.00 | 10.0 | -1.240 | .268 | 4 | 5.20 | 11.0 | -.740 | .537 |
| | More exp. | 7 | 7.57 | | | | 6 | 6.67 | | | |
| ACSI - pup | Less exp. | 5 | 4.20 | 6.0 | -1.919 | .073 | 4 | 5.00 | 11.5 | -.656 | .537 |
| | More exp. | 7 | 8.14 | | | | 6 | 6.83 | | | |

AGE (athletes without disabilities) - younger: 17-26.58 years, older: 26.75-38 years; SP. EXP=sports experience- Less. exp: 5-11years, more exp:12-23 years; AGE (athletes with disabilities)-younger: 20-27 years, older: 28-40 years; SP. EXP-Less. exp: 2-7 years, more exp: 8-13 years; MR= mean rank; MWU=Mann-Whitney U test coeff.

As we can see in table 3, between the younger and older athletes with disabilities there are significant differences in 4 psychological variables (SCATr, GSE, SC-coam and SC-pup), while in the subsample of athletes without disabilities we noticed only one significant difference (SC-pup) and one difference which is close to being significant (SCI-res). Contrary to our expectations, the length of sport experience did not appear as a significant predictor in any of 14 components of the athletes' psychological profiles (with or without disabilities). By analyzing the results in table 3, we noticed the tendency of experienced athletes without disabilities to be more successful under competitive pressure than less experienced ones (ACSI-pup: Z = -1.92; p=.07). Higher psychological resilience, i.e. the ability to recover after mistakes and stagnation, we noticed with athletes with disabilities with longer sport experience (Z=-1.61; p=.11).

## DISCUSSION

He most important finding of our study is the lack of difference in the sport-specific psychological profiles of elite athletes with and without disabilities. The level of global self-esteem (GSE) in athletes with disabilities is slightly higher than in athletes without disabilities (40.90:40.33), and it is optimal and according to the standards that Bačanac et al. (2009) obtained on Serbian adult athletes (N=1155; M=40.69). Finding that athletes with disabilities at the same quality level are not significantly different in terms of global self-esteem than athletes without disabilities are in accordance to the results of similar studies (as cited in Martin & Wheeler, 2011; Scarpa, 2011). Although the GSE level of athletes with disabilities is higher than that of athletes without disabilities this difference did not reach statistical significance. We believe that research with larger samples of individuals with and without disabilities engaged or not engaged in sport would confirm that practicing sport significantly contributes to building positive relation toward oneself, one's own abilities and personal values, as it offers individuals the opportunities to test their capabilities, experience success and view themselves positively and as worthy of their own and others' esteem.

High significant coefficients of correlation GSE of athletes with disabilities with their coping skills ACSI-tot (.77), ACS-coam (.86), ACSI-gsmp (.79) and ACSI-pup (.70) indicate that self-esteem and psychological skills for overcoming stress are in close mutual relation, and it is difficult to determine whether the athletes with disabilities build global self-esteem based on confidence in their abilities and skills to deal with competitive stress, or vice versa. On the whole, high global self-esteem positively affects general psychological coping skills, especially sport-confidence and achievement motivation, setting goals and psychological readiness, as well as high achievement under pressure. The self-esteem of athletes with disabilities is positively related to their age (Table 2, r=.88), but not to their sport experience. The duration of sport experience is more directly and more firmly related to their sport-confidence (SC), especially with their confidence in psychological resilience and physical skills and training (r=.59; p=.073). This is consistent with previous research (Vliet et al., 2008; Bačanac et al., 2010) which also indicated a significant correlation between global self-esteem and total sport-confidence and all of its subcomponents. For global self-esteem we could say that it is at the same time an antecedent and consequence of sport-confidence, and through sport-confidence influences the athletes' performance. Athletes are similar in their level of confidence and in their ability that they can be successful in sport. In none of three components of sport confidence (SC-pst; SC-cef; SC-

res), was a significant difference between these two groups of athletes registered. Due to top achievements in sport, athletes with disabilities have to build a strong sense of their own sport competences, and they build them based on manifesting their skills and achieved success, but also on knowledge that possess good physical skills, the ability to focus and maintain concentration, and the ability to make effective decisions and developed psychological resilience. An analysis of the results (tables 2 and 3) reveals that the sport-confidence of athletes with disability grows in the function of their competitive experience, which is very important for strengthening their confidence in their own psychological resilience (SC-res), and sport-confidence in physical skills and training (SC-pst). The length of sport experience in athletes without disabilities is positively related to their sport-confidence about resilience (SC-res) and confidence about physical skills and training (SC-pst). The research of Bačanac et al. (2010) showed that sport experience is an important generator of sport confidence, and that it is one of the main components for successful sport performance, as quoted by Vealey & Chase (2008). According to the multidimensional model of sport confidence and the research results of Vealey & Knight (as cited in Vealey & Chase, 2008), sport confidence and competitive anxiety are negatively related, while the relations between sport confidence and athletes' coping skills (ACSI-28) is positive. The results of this research also indicate that the relation between the total score of sport confidence (SC-tot) and competitive anxiety (SCATr) is negative (r= -.58 in the subsample of athletes without disabilities and r= -.03 in the athletes with disability), while the relations between each components of sport confidence and SCATr are different and also negative. In the sample of athletes with disabilities that correlation is pretty weak, while in the sample of athletes without disabilities it is far stronger. These correlations indicate that sport-confidence buffers negative effects of anxiety on competitive performance. Athletes that believe in their ability to cope, resilience and cognitive efficiency, see anxiety as something facilitative and positive and attempt to manage their anxiety in productive ways and perform effectively. It is obvious that the trait of global self-esteem (GSE) is the main predictor for the total sport-confidence of athletes with disabilities and for all three components, while competitive anxiety (SCATr) showed significantly greater disturbing effects on cognitive efficiency (SC-cef) and psychological resilience (SC-res) than on confidence in physical skills and training (SC-pst). These data are consistent with the previous findings Bačanac et al. (2010), and can be explained by fact that high competitive anxiety increases athletes' somatic and cognitive excitement and concern. High somatic and cognitive anxiety negatively influence the quality of performance, because they increase muscle tension, undermine coordination, destroy proper focus and attention direction. Our data (table 1) indicate that athletes with disabilities are characterized by an almost identical level of each individual coping skill and total personal coping resource (ACSI-tot). The exception the ACSI-pup (peaking under pressure), which means that athletes with disabilities significant are less able to cope with competitive pressure and stress situations and experience it as a challenge and not a threat and that they can always give their maximum (F=4.65; p=.043). Since the skill peaking under pressure is mainly influenced by sport experience (table 2), and it is significantly lower in athletes with disabilities than in athletes without disabilities (table 1), then it is understandable why that ability is less developed. The Mann-Whitney U test results (table 3) show differences between younger athletes with disability and those who are older in their confidence/achievement motivation (ACSI-coam) and Peaking under pressure - ACSI-pup (Z= -2.499, p=.009; Z=2.435, p=.017), while between more and less experienced athletes there is no significant difference

in total personal coping resource (ACSI-tot) and its subcomponents. A high positive correlation of psychological skills for overcoming stress (ACSI-28) with global self-esteem of athletes with disabilities (r=.77), allows us to conclude that it is vital for the more successful development and application of these skills. The results clearly show that the age of athletes with disabilities is positively correlated (r=.67) with their confidence and motivation and that they work hard to improve their skills (ACSI-coam), while the athletes without disabilities with concentration skills (r=.58) and achievement under pressure (r = .61). Our study shows that regardless of the sport experience of the athletes with disabilities, which is significantly smaller than in the athletes without disabilities, they equally mastered most of basic psychological skills such as: coping with adversity, coachability, concentration, goal setting, mental preparation, self-confidence, concern and anxiety management and peaking under pressure.

## CONCLUSION

The results of the comparative analysis for sport-specific psychological profiles of top athletes with and without disabilities that practice similar sport activities, confirmed our general hypothesis that practicing sport positively affects the development of those psychological components which are considered to be key factors for high achievements. Our findings are in accordance with the results of many current studies which confirmed the assumption that top results of all participants, whether they are with disability or not, requires similar psychological characteristics: a high level of global self-esteem (GSE), a strong sense of sports competence (SC) and confidence in possession of physical skills and fitness, tactical knowledge and the ability to make appropriate decisions, as well as confidence in their own psychological resilience. From a total of 14 psychological characteristics measured using four tests, athletes with disabilities significantly differed from athletes without disabilities only in one psychological coping skill - the less developed peaking under pressure (ACSI-pup), which is primarily attributable to their less competitive experience. Other coping skills (ACSI-28: tot, cad, coac, conc, coam, gsmp, ffw), global self-esteem (GSE), general sport confidence and its subcomponents (SCI: tot, pst, cef, cef) and competitive anxiety (SCATr) show very similar levels of development in both groups of athletes. Although differences between specified psychological profile components of athletes with and without disability are not statistically significant, the following indicators deserve our attention. The tendency that athletes with disabilities in comparison to athletes without disabilities, achieve higher scores on global self-esteem; prior to performance they show less level of competitive anxiety, they are more confident in their physical skills and training, coachability, less burdened by worry and the assessment of others, and they have strong achievement motivation and a readiness to give 100% in every training session and competition. These tendencies are valuable because they further confirm that practicing sport for individuals with disabilities enables them to be psychologically stronger and develop valuable life skills which will help them to successfully cope with different everyday' challenges, pressures and demands not only in sports but in other life situations.

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## REFERENCES


Bačanac, Lj., Nikolić, M., & Ilić, J. (2010). Self-confidence Relationship with Demographic Situation and Psychological Characteristics of Athletes. In R. Stankovic (Ed), *14th International Science Conference „Fis Communication 2010"* (pp. 359-378). Niš: University in Niš, Faculty of Sport and Physical Education.

Bačanac, Lj., & Juhas, I. (2004). Level of Sport Competitive Anxiety Trait as a Function of Sex, Age and Sport Experience. In *Third International Scientific Congress „Sport, Stress, Adaptation"*. (pp. 85-94), Sofia: National Sport Academy.

Bačanac, Lj., Petrović, N., & Manojlović, N. (2009). *Degree and types of sport related violence in Serbia*. Belgrade: The Republic institute for sport; Ministry of Youth and Sport.

Bačanac, Lj., Kitanović, V., Nikolić, M., Ćirković, T., & Ilić, J. (2011). Psychometric properties and norms for the tests: SCATr, SCI, ACSI-28 and GSE. *Document for internal use.* Belgrade: Serbian Institute of Sport and Sports Medicine.

Cox, R., Shannon, J., McGuire, R., & McBride, A. (2010). Predicting subjective athletic performance from psychological skills after controlling for sex and sport. *Journal of sport Behavior*, 33 (2), 269-286.

Ferreira, J. P., & Fox, K. R. (2008). Physical self-perceptions and self-esteem in male basketball players with and without disability: a preliminary analysis using the physical self-perception profile. *European Journal of Adapted Physical Activity*, 1 (1), 35–49.

Ferreira, J. P., Chatzisarantis, N., Caspar, P.M., & Campos, M. J. (2007). Precompetitive anxiety and self-confidence in athletes with disability. *Perceptual and Motor Skills*, 105 (1), 339-334.

Geczi, G. (2009). *Success and talent development as indicated by motor tests and psychometric variables of U18 ice hockey players.* Unpublished doctoral dissertation, Budapest: Semmelweis University - Sport Sciences Doctoral School.

Kasum, G., Lazarević, Lj., Jakovljević, S., & Bačanac, Lj. (2011). Personality of Male Wheelchair Basketball Players and Non-athletes Persons with Disability. *Facta Universitatis, series Physical education and Sport*, 9 (4), 407-415.

Kasum, G., Lazarević, Lj., Jakovljević, S., Bačanac, LJ., & Eminović, F. (2012). Personality characteristics of Serbian male wheelchair and profesional basketball players. *Acta Universitatis Palackianae Olomucensis Gymnica*, 42 (2), 41-47.

Kirkby, R. J. (1995). Wheelchair Netball: Motives and Attitudes of Competitors With and Without Disabilities. *Australian Psychologist*, 30 (2), 109–112.

Kitanović, V. (2011). *Metrijske karakteristike testa Inventar psiholoških veština prevladavanja stresa u sportu, ACSI-28* [Metric characteristics of Athletic Coping Skills Inventory ACSI-28]. Unpublished master thesis, University in Belgrade, Philosophy Faculty.

Kolayis, H. (2012). Examining how wheelchair basketball players' self-esteem and motivation levels impact on their state and trait anxiety levels. *Biology of Sport*, 29 (4), 285-90.

Machida, M. (2008). *An examination of sources and multidimensionality of self-confidence in collegiate athletes.* Unpublished doctoral dissertation, Miami University. Retrieved July 2013, from www.ohiolink.edu/etd/

Martin, J. J., & Wheeler, G. (2011). *Psychology.* In: Y. C. Vanlandewijck, & W. R. Thompson, (Eds), Handbook of Sports Medicine and Science: The Paralympics Athlete (pp.116-134). Oxford: IOC Medical Commission, Wiley-Blackwell.

Nikolić, M., Bačanac, Lj., Kitanović, V., Ćirković, T. (2011). Psychological coping skills of elite and non-elite level athletes. In S. Stojiljković (Ed), *International Scientific Conference: Physical Activity for Everyone,* Book of abstracts (pp. 24-25). Belgrade: Faculty of Sport and Physical Education.

Omar-Fauzee, M. S., Mohd-Ali, M., Geok, S, K, & Ibrahim, N. (2010). The Participation Motive in the Paralympics. *J. of Alternative Perspectives in the Social Sciences*, 2 (1), 250-272.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton: University Press.

Scarpa, S. (2011). Physical self-concept and self-esteem in adolescents and young adults with and without physical disability: the role of sports participation. *European Journal of Adapted Physical Activity*, 4 (1), 38-53.

Smith, R., Schutz, R., Smoll, F. & Ptacek, J. T. (1995). Development and Validation of a Multidimensional Measure of Sport-Specific Psychological Skills: The Athletic Coping Skills Inventory-28. *Journal of Sport and Exercise Psychology*, 17 (4), 379-398.

Smith, R. E., & Christensen, D. S. (1995). Psychological Skills as Predictors of Performance and Survival in Professional Baseball. *Journal of Sport and Exercise Psychology*, 17 (4), 399-415.

Vealey, R. S. (1986). Conceptualization of sport-confidence and competitive orientation: Preliminary investigation and instrument development. *J. of Sport Psychology*, 8 (3), 221-246.

Vealey, R.S., & Chase, M.A. (2008). *Self-confidence in sport: Conceptual and research advances*. In T. Horn (Ed.), Advances in Sport Psychology (pp.65-97). Champaign, IL: Human Kinetics.

# OSEĆANJA TAKMIČARSKE ANKSIOZNOSTI, SAMOPOUZDANJA I PSIHOLOŠKOG BLAGOSTANJA VRHUNSKIH SPORTISTA SA I BEZ INVALIDITETA: PILOT ISTRAŽIVANJE

*Proveravajući hipotezu o pozitivnom uticaju sportske aktivnosti na psihološko zdravlje osoba sa invaliditetom, koje podrazumeva psihološko blagostanje i sposobnost da se živi ispunjen i kreativan život, uporedili smo profil za sport specifičnih psiholoških karakteristika sportista sa invaliditetom (N=12) i sportista bez invaliditeta (N=12). Rezultati pokazuju da između sportista sa i bez invaliditeta postoji samo jedna statistički značajna razlika, i to u postignuću pod pritiskom (F=4.655; p=.043). Psihološki profil sportista sa invaliditetom veoma je sličan psihološkom profilu sportista bez invaliditeta, što potvrđuje da bavljenje sportom pozitivno doprinosi njihovoj psihološkoj snazi čineći ih podjednako spremnim da uspešno, kao i sportisti bez invaliditeta, ostvaruju visoka postignuća u sportu. Bavljenje sportom pozitivno se odrazilo, ne samo na sportsko samopouzdanje (SCI), već i na globalno samopoštovanje (GSE) sportista sa invaliditetom, optimalizovalo je njihovu takmičarsku anksioznost (SCATr) i unapredilo sveukupne psihološke veštine prevladavanja stresa (ACSI), tako da se po ovim, za sportsko postignuće značajnim varijablama, oni ne razlikuju od svojih vršnjaka sportista bez invaliditeta. Pokazalo se da je starost sportista sa invaliditetom značajno pozitivno povezana sa snagom njihovog globalnog samopoštovanja GSE (r=.88; p=.001), sa samopouzdanjem i motivacijom postignuća u sportu ACSI-coam (r=.67; p=.023), a negativno sa takmičarskom anksioznošću SCATr (r=-.65; p=.022). Istovremeno, sa rastom takmičarskog iskustva, raste i njihovo sportsko samopouzdanje, a naročito psihološka rezlijentnost (r= .64; p= .045).*

Ključne reči: *sport, invaliditet, psihološke karakteristike specifične za sport.*