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Original empirical article

PERSONALITY OF MALE WHEELCHAIR BASKETBALL PLAYERS AND NONATHLETE INDIVIDUALS WITH DISABILITY *

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Abstract. The aim of this study was to investigate the personality of male wheelchair basketball players and persons with disabilities who did not compete in sports. For the purposes of this study, wheelchair basketball players (N=25) and wheelchair nonathletes (N=32) completed a Cattell 16PF questionnaire. Basic descriptive statistics were used in the data processing, and differences between the two groups of participants were calculated by means of the t-test. The results demonstrated the existence of differences in the expression of certain forms of behavior within certain dimensions of personality between these two groups. Wheelchair basketball players had higher scores for factor B - Reasoning (p=.025) and factor G - Rule Consciousness (p=.001), which means that they exhibit a more developed ability of abstract thinking. problem solving, and have a higher "super ego", a higher level of reliability and sense of duty to the obligations, compared to people who do not practice sports. Basketball players had lower scores, than non-athletes, for the following factors: E – Dominance (p=.036), I – Sensitivity (p=.001), O – Apprehension (p=.005) and Q2 – Self-Reliance (p=.023). That means that they exhibit a higher level of behavior mildness, conformity, modesty, and also, "sharper temper", a higher level of confidence, resistance to stressful situations, and they are characterized as "dependent on the group".

Key words: Cattell 16PF/characteristics/differences/sport/benefits

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INTRODUCTION

Coaches and sport psychologists, for more than half a century, have been discussing the specific psychological structure of athletes' personality. Studying the personality of the athletes involved in different sports and at different skill levels can help the better understanding and prediction of their behavior due to an increase competitive efficiency and solving problems which appear in certain periods of their sports career (Bacanac, 2001). Sport psychologists, who examine athletes' personalities, were interested in the answers to three questions (Davis, Bull, Roscoe & Roscoe 1997): Is there an athletic "type"? Can success in sport be predicted from measures of personality? Does personality change as a result of participation in sport?

Butt (1987) indicated that female and male athletes exhibit personality traits such as: extroversion, dominance, enthusiasm, confidence, aggression and high activity levels. Weinberg and Gould (1995) noticed there is no consistent personality profile which distinguishes athletes from non athletes. On the other hand, Morgan (1980) suggested that successful athletes have a significantly more positive mental health profile than either less successful athletes or the population in general. In the same study, Morgan sets out with the question whether athletes are successful because of their particular personality profile, or their success created this profile for them. Still, there is no appropriate answer to this question. For example, Girdano, Everly & Dusek (1990) claim that personality characteristics related to stress, tension and cardiovascular disease can be reduced by exercise programs which as a result have health improvement. Sonstroem (1984) showed that improvement in self-esteem is related to exercise.

On the other hand, it can be said that in recent years an unduly small number of studies on athletes' personalities have appeared (Auweele et al. 2001). Sports psychologists are more interested in performance components that can be modified with training. But, this study focused on athletes and non-athletes and we consider investigations of personality adequate, in spite of the fact that personality traits are by definition a rather "stable" construct over time.

It is well known that sport is a very good tool for the rehabilitation of individuals with disability (Miyahara et al., 2008; Sporner et al., 2009). Wheelchair users who participate in some type of physical activity had better pulmonary functions, muscular strength, endurance and anaerobic power in comparison to those who do not (Wells, & Hooker, 1990). There are also psycho-social benefits of participating in sports for people with disability (Hutzter, & Bar-Eli, 1993). It has been noted that people with disability who do exercise deal better with pressure and stressful situations than those who do not. They also experience less depression, confusion, tension and anger (Campbell & Jones, G. 1994).

However, little is known about the psychological skill development of athletes with disabilities (Hanrahan, 1998). Although there are many similarities among athletes with and without disabilities, sport psychologists would benefit from an awareness of information unique to athletes with disabilities (Asken, 1991).

In the last fifteen years in Serbia the number of persons with some kind of disability has increased. This is mostly a consequence of the traumatic events in the area of the West Balkans – civil war, economic sanctions. In particular, the number of young people with disability has increased. Serbian society and the government are trying to help these people, to make their life better and to enable them to live like equals with others. The aim of these activities is to bring psycho and social benefits. The psychological and social

benefits are just as important as the physical benefits that a person receives from being physically fit.

The Basketball Federation of Serbia and basketball coaches show great interest in wheelchair basketball. Basketball is a complex and polystructural activity (Drinkwater, Pyne & Mckenna, 2008; McInnes, Carlson, Jones & McKenna, 1995); it means that participation in basketball has multiple influence on a player's body. One of the most important aspects of a coach's work with players is his relationship with the players. A coach must determine the psychological characteristics and specifics of each player. The examination of the psychological profiles and personalities of the athletes is carried out in different sports, and therefore in basketball too. (Craighead & Vallianos, 1986; Maddi & Hess, 1992; Svoboda 1993; Hoffman, Bar-Eli, & Tenenbaum, 1999; Kirker, Tenenbaum, & Mattson, 2000). There are, also, a few studies about particular wheelchair basketball players' psychological dimensions and skills. Wheelchair basketball players showed a willingness for cooperation and a need for sport psychologist consultations. (Page, Martin & Wayda, 2001). Martin (2008) examined performance, training, resiliency, thought control self-efficacy, positive and negative affect in wheelchair basketball athletes and found that basketball players who were efficacious in their ability to overcome training barriers were also confident in their basketball skills and efficacious in their ability to overcome having distressing thoughts while simultaneously cultivating positive thoughts. Paulsen, French & Sherrill (1990) noticed that wheelchair basketball players scored significantly better than non-athletes when it came to depression.

The recognition of the need and benefits of sport activity for people with disability is on the increase in Serbia. In the past few past years Serbian athletes have achieved good results at the Paralympics Games, but usually in individual sports. On the other hand, team sports, especially basketball, have a long tradition and enjoy great popularity in Serbia. Because of that team characteristic, basketball has been developed more intensively in wheelchair basketball in Serbia lately. There is the intention to support the concept that sports participation contributes to good mental health by comparing the personality of wheelchair basketball players and wheelchair non athletes.

Because of the numerous psycho-social benefits of participating in sport (basketball as well) for people with disability, the purpose of this study was to examine and compare the personalities of male wheelchair basketball players and persons with disability who are not sport participants.

METHOD

Participants

The participants were 25 wheelchair basketball players (group 1) and 32 wheelchair non-athletes (group 2). The mean age for the basketball players was 33.5 years (SD = 8.66), and for the non-athletes was 35.2 years (SD = 8.00). The average playing experience for this sample of basketball players was 5.6 years (SD = 1.97). Finally, the basketball players were categorized into the following classes: class 1 (n = 7), class 1.5 (n = 3), class 2 (n = 4), class 2.5 (n = 2), class 3 (n = 2), class 3.5 (n = 1), class 4 (n = 3), class 4.5 (n = 3). The lower classes of wheelchair basketball players are more limited in their

functional skills, while the athletes assigned to higher classes have few, if any, limitations. They trained basketball three times per week, plus one game during the competitive season. Among the participants with disability who do not practice sports, 22 of them suffered from paraplegia and 10 had undergone amputation of the lower extremities.

Questionnaire

For the purposes of this study, wheelchair basketball players and wheelchair non-athletes were asked to complete a Cattell 16PF questionnaire (Fifth edition) based on Raymond Cattell's theory of personality. The 16PF global scales have even higher reliabilities; the 2-week test-retest estimates ranges from 0.84 to 0.91 with a mean of 0.87 (Cattell & Schverger, 2003). This questionnaire was very often used in clinical practice, counseling, industrial-organizational, educational, and research settings (Cattell & Schverger, 2003). Also, this questionnaire (early editions) was often used in the past few decades to test athletes' personalities in Serbia (Havelka & Lazarević, 1981; Bačanac, 2001; Jakovljević, Karalejić & Lazarević, 2010). The primary factors that the Cattell 16 PF test measures are bipolar dimensions of personality: A - Warmth; B - Reasoning; C - Emotional Stability; E - Dominance; F - Liveliness; G - Rule-Consciousness; H - Social Boldness; I - Sensitivity; L - Vigilance; M - Abstractedness; N - Privateness; O - Apprehension; Q1- Openness to Change; Q2 - Self-Reliance; Q3 - Perfectionism; Q4-Tension.

The protocol used in the present study received institutional approval and informed consent was obtained from each participant.

Procedure

Wheelchair basketball participants were recruited by contacting their coaches. At that time, the coach was asked to solicit the participation of his players for the present study.

Wheelchair non-athlete participants were recruited by personal contact and by the National Organization of Persons with Disability in Serbia. The participants were instructed that their participation was voluntary and that all the information reported in their questionnaire was confidential. It is important to note that these two points were reinforced in the instructions found at the beginning of the questionnaire. The participants completed the questionnaire individually. To indicate informed consent, the participants signed their copy of the questionnaire.

Basic descriptive statistics were used in the data processing, and the differences between the two groups of participants were calculated by means of the t-test. Data processing was done in the SPSS16 statistical program.

RESULTS AND DISCUSSION

Table 1 shows the means and standard deviations of both groups of participants in terms fo the Cattell 16 factors. The participants from both groups have different results for all 16 factors. Table 2 shows the results of the t-test, in regard to the significance of the differences between the two groups.

Table 1 The means and Standard Deviation of 16 personal factors for both groups

Variable	wheelchair basketball players		non-athletes	
variable	Mean	Std. Deviation	Mean	Std. Deviation
A - Warmth	10.96	2.99	11.43	2.35
B - Reasoning	7.36	2.22	5.78	2.49
C - Emotional Stability	14.96	2.85	14.52	3.15
E - Dominance	12.16	3.51	14.27	3.22
F - Liveliness	13.93	3.13	13.79	2.67
G - Rule Consciousness	14.29	2.67	11.65	2.64
H - Social Boldness	14.60	4.06	14.09	4.13
I - Sensitivity	6.40	2.29	8.91	2.52
L - Vigilance	10.32	3.04	10.35	2.44
M - Abstractedness	12.56	3.32	13.83	2.61
N - Privateness	9.00	2.31	9.26	2.54
O - Apprehension	9.48	3.24	11.95	2.49
Q1 – Openness to Change	9.60	2.16	8.78	2.43
Q2 – Self-Reliance	10.20	2.96	12.17	2.85
Q3 - Perfectionism	12.12	2.49	12.13	2.67
Q4 – Tension	11.24	3.64	13.09	3.78

Table 2 The results of the t-test between wheelchair basketball players and non-athletes

Variable	t	Sig.	Mean Difference
A - Warmth	-0.607	0.547	-0.475
B - Reasoning	2.325	0.025	1.577
C - Emotional Stability	0.506	0.615	0.438
E - Dominance	-2.155	0.036	-2.100
F - Liveliness	0.163	0.871	0.137
G - Rule Consciousness	3.426	0.001	2.628
H - Social Boldness	0.433	0.667	0.513
I - Sensitivity	-3.618	0.001	-2.513
L - Vigilance	-0.035	0.972	-0.028
M - Abstractedness	-1.462	0.151	-1.266
N – Privateness	-0.372	0.711	-0.261
O - Apprehension	-2.947	0.005	-2.476
Q1 – Openness to Change	1.234	0.224	0.817
Q2 – Self-Reliance	-2.348	0.023	-1.974
Q3 - Perfectionism	-0.014	0.989	-0.010
Q4 – Tension	-1.724	0.091	-1.847

Wheelchair basketball players compared with people with disability, who do not take part in sports, achieved a statistically higher score on scale B which examines reasoning and general mental ability. This difference is statistically significant at the 014 level, which indicates that wheelchair basketball players exhibit a significantly more developed ability of abstract thinking, understanding ideas, speed of learning and problem solving compared to persons who do not take part in sports. Basketball activity has a lot of atypi-

cal situations. Players must solve these situations very quickly. The basis of these solutions lies in tactical thinking and the basis of tactical thinking are mental abilities.

What is interesting is the result on scale E which examines dominance or the degree of submission. Wheelchair basketball players achieved a statistically lower score on scale E (p=.036). They exhibit a lower level of need for competitive dominance, for independence, a lower level of controlled aggression, extrapunitive reactions, etc. This means that wheelchair athletes exhibit a higher level of behavior mildness, conformity, modesty, reticence, and even humility, which may be a consequence of insecurity, compared to those persons who do not practice sports. These results deserve to be checked and examined with other instruments too, because it is assumed, and the tests also show, that the sports population, or athletes, exhibits a higher level of the need for dominance, greater aggressiveness, the need to prove oneself etc., so similar results among athletes in wheelchairs, compared to those in wheelchairs who do not take part in sports, would be expected. It can be supposed this is a consequence of the current wheelchair basketball status in Serbia. It is completely amateur status, which means that any material stimulation for playing does not exists, as compared to basketball players without disabilities. In addition to that, ordinary basketball leagues do not exist. Also, there is no great numbers of wheelchair basketball clubs (only four) and players, so there is slight competition. Wheelchair basketball players play on an absolutely voluntary basis, and it can be supposed they play for joy and with a desire for closer social contacts, without strong motives to compete. No organized system of player selection exists. This results in the fact that individuals who take part in wheelchair basketball are more willing to cooperate and have a will for subjugation to the team. The motivation for playing should be checked with some kind of instruments which estimate motive for sports activities.

Wheelchair basketball players, compared to non-athletes, have a statistically significant higher level on scale G – rule consciousness, more exactly the "super ego". Since this scale examines the personality traits that are responsible for moral behavior or, according to the interpretation given by Cattell's personality theory, — "reliable character". Given the high level of important differences, we may say that wheelchair basketball players, compared to persons who do not take part in sports, exhibit a significantly higher level of diligence, perseverance, reliability, responsibility, sense of duty to obligations, thoughtfulness towards other people, etc. This result with the results obtained from the sports population, according to Cattell's theory, developed largely under the influence of the environment, i.e. it is formed by a social impact, thus confirming the views of a number of researchers that social agents, in this case sports and the sports milieu, significantly affect the development of certain personality dispositions. Basketball requires all players to be responsible and to fulfill their tasks for the purpose of good team cooperation. The unreasonable behavior during practices and games of at least one player will lead to team inefficiency.

The score on scale I – sensitivity, which examines "mental acuity", or Harria and Premsia, shows that wheelchair basketball players exhibit a "sharper temper" and that the difference is significant at the .001 level. Based on the interpretation of this result, it means that wheelchair basketball players are more independent, tough, realistic, and emotionally mature, they have control over their feelings, they are unsentimental towards rival in competitive situations, they are more practical in achieving the set tasks, compared to individuals in wheelchairs who do not practice sports. These results are in concordance with results of Paulsen at al. (1990) and Campbell & Jones (1994). As the development of this extent is to a large part determined by environmental factors and that

it by nature contains dynamic-motivational components, i.e. dynamic components for specific behavior patterns, then this dimension is an important confirmation of the difference between a person engaged in sport and one that is not, and proof that sport in each case significantly affects the development and promotion of certain personality traits. Basketball games have a lot of "conflict" situations which are a consequence of the interaction between both team players, and also the referees and the audience. Because of that we can suppose that basketball requires these personality traits. A basketball team is a group with a certain system of values and relations and there is a special need for common and unsentimental actions against the opposing team.

Statistically significant differences also occur on scale O – apprehension, which examines the degree of guilt or tranquility. Wheelchair basketball players differ in a statistically significant manner (p=.005) from those who do not practice sports because they exhibit a higher level of tranquility, confidence, the absence of feelings of guilt, resistance to stressful situations, easier excitement subdual, they are less suspicious and worried, more independent. The dimension belongs to the dynamic characteristic of personality, and it is under the significant influence of environmental factors. The assumption that this dimension has to do with the super ego, or with moral categories, indicates a need for the development of those components that are important for success in sport and makes up the content of these dimensions.

The significant difference between the two samples of respondents was also reached on scale Q2 – self-reliance, more exactly "dependence on the group self-sufficiency". Wheelchair basketball players expressed a significantly higher dependence on the social environment, and the affection of others, and therefore they are characterized as "dependent on the group". They care about the opinions and support of others. They prefer to work in a group, to jointly make decisions, and therefore they are considered good team members and "followers" of the group. These people are "loyal to the group". What may be an obstacle to their creativity and success is that despite the need for self-confirmation and success, this dependence makes them dependent and indecisive in decision making and creativity. If we take into account the fact that basketball is a team sport and that each success depends on group team work, the success of each individual is conditioned by cooperation, then these characteristics are understandable, and the difference compared to non-athletes — the expectation and the impact of sports on personality development and education — is an important factor that every coach should take into account.

CONCLUSION

The results on the 16 PF test show that wheelchair basketball players are significantly different from people with disability who do not take part in sports. These differences do not indicate that there are significant differences in the structure or organization of dispositions in the personality structure of the respondents in these samples, but suggest the existence of differences in the expression of certain forms of behavior within certain dimensions of personality. Wheelchair basketball players, compared to non-athletes with disability, exhibit more developed abilities of abstract thinking and problem solving, a lower level of need for competitive dominance, higher level of diligence, perseverance, reliability, responsibility, a higher level of tranquility, confidence, and resistance to stressful situations. Also they are more independent, tough, realistic, independent, emotionally mature, and prefer to work in a group.

It cannot be claimed for certain that basketball practice has a significant effect on the personality profile of wheelchair basketball players. The benefits brought by practicing basketball are significant, regardless of whether the basketball players were in wheelchairs before they started practicing basketball or whether basketball itself contributed to the development of these characteristics. So, these findings support the hypothesis that sport participation is beneficial to the mental health of people with disabilities.

Because of that, in Serbia, it is very important to work hard on improving wheelchair basketball through the inclusion of more athletes – basketball players. Knowing the personality characteristics of basketball players in wheelchairs, can for certain give us a better direction on how to motivate non-athlete persons with disability to start practicing basketball. Therefore, the inclusion of persons with disability in wheelchair basketball will stimulate development of these, social desirable, personality characteristics.

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KARAKTERISTIKE LIČNOSTI KOŠARKAŠA U KOLICIMA I OSOBA SA INVALIDITETOM KOJE SE NE BAVE SPORTOM

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Cilj ove studije je bio da se istraži ličnost košarkaša u kolicima i osoba sa invaliditetom koje nisu uključene u sport. U tom cilju košarkaši u kolicima (N=25) i osobe koje su korisnici kolica i koje se ne bave sportom (N=32) su ispunili Katelov 16PF uputnik. U obradi podataka je korišćena deskriptivna statistika, a u ispitivanju razlika između dve grupe ispitanika korišćen je t-test. Dobijeni rezultati su pokazali postojanje razlika između ovih grupa ispitanika u ispoljavanju pojedinih formi ponašanja unutar određenih dimenzija ličnosti. Košarkaši u kolicima su imali više skorove na faktoru B – opšta mentalna sposobnost (p=.025) i faktoru G – snaga super ega (p=.001), što znači da oni pokazuju više razvijenu sposobnost apstraktnog mišljenja, rešavnaja problema, te izraženiji "super ego", viši nivo pouzdanosti i osećaja za dužnost u poređenju sa osobama koje nisu uključene u sport. Košarkaši imaju niže skorove od nesportista na faktorima: E – dominacija (p=.036), E – senzitivnost (E001), E0 – spokojstvo (E001) i E0 – grupna zavisnost (E023). To znači da oni imaju viši nivo skromnosti, konformizma, "oštriju narav", viši nivo samopouzdanja, otpornosti na stresne situacije i da se karakterišu kao "zavisnici od grupe".

Ključne reči: Katel 16PF, karakteristike, razlike, sport, dobrobit.