

Original empirical article

PERSONALITY TRAITS OF YOUNG GIFTED RHYTHMIC GYMNASTS

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Abstract. *The main goal of the research was to explore the personality traits of young gifted rhythmic gymnasts, from the point of view of the Five Factor Model. The sample consisted of 47 girls (average age 12.7 years), divided into four groups: amateurs, more successful amateurs, competitors and successful competitors (i.e. gifted rhythmic gymnasts) and both of their parents/custodians. For personality assessment both self-reports (Neuroticism Extraversion Openness for children (NEOZd)) and observer's ratings (NEO PI-R) were used. The results of the ANOVA showed that girls from both competitor groups score higher on the self-report measure of Openness, Agreeableness, and Conscientiousness and on Agreeableness assessed by mothers in comparison to both amateur groups. However, gifted girls did not differ significantly from other competitors. The results indicate that gifted girls have a certain personality pattern that along with the highest motor abilities makes them the most successful in rhythmic gymnastics.*

Key words: *personality traits, giftedness in sport, rhythmic gymnastics, Five Factor Model of Personality.*

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INTRODUCTION

Contemporary conceptions of giftedness consider high potential or achievement in various domains (intellectual and others) to be distinctive and equally important forms of giftedness (Gagné 1985; Gagné, 2005; Gardner, 1999; Reis and Renzulli, 2009; VanTassel-Baska, 2005). A growing body of evidence originating from neurology, neuropsychology, developmental psychology, psychometrics etc., supports the view that giftedness is domain-specific (Armstrong, 2006; Gardner, 1983, 2000). One of the domains in which giftedness can be demonstrated and developed is sport. Gagné (2005) in his Differentiated Model of Giftedness and Talent (DMGT), as well as Heller, Perleth, and Lim (2005) in their Munich Model of Giftedness (MMG) recognize superior motor and physical abilities as particular forms of giftedness. The authors of both the DMGT and MMG agree that giftedness (or the possession of outstanding natural abilities) transforms into externally validated high levels of mastery of a certain domain under the influence of intrapersonal (e.g. personality) and interpersonal (e.g. family, social support) factors (Gagné, 2005; Heller, Perleth, and Lim, 2005).

Although personality is considered to be an important moderator in the "unfolding" of giftedness, authors usually focus on certain aspects of personality, e.g. self-concept, motivation, locus of control, stress coping strategies, learning style, etc. while personality traits per se/in the strict sense are rarely investigated (e.g. Altaras, 2006; Kaufman and Sternberg, 2008; Olszewski-Kubilius, 2008; Sternberg and Davidson, 2005). Personality traits are always-present capacities which, although they are not constantly manifested in behavior, are in a dynamic relationship with other components of the personality system (basic tendencies, characteristic adaptations and self-concept) (McCrae and Costa, 2008).

The dimensional view of personality has several benefits. Personality traits have a significant predictive and discriminant power with respect to various psychological and socio-psychological variables (including those related to sport) and they also permit more general insights (McCrae and Costa, 2008; Weinberg and Gould, 2007). The dominant viewpoint in the field of individual differences is that personality can be described by means of five basic dimensions (Neuroticism (N), Extraversion (E), Openness to experience (O), Agreeableness (A) and Conscientiousness (C) and that idea is well, both conceptually and empirically, elaborated in Five Factor Model (FFM) (Larson and Buss, 2008; Matthews, Deary and Whiteman, 2003; McCrae and Costa, 2008). However, studies focusing on personality traits in sport giftedness which are based on contemporary FFM are still scarce (Weinberg and Gould, 2007). Some studies demonstrate that gifted individuals can be described as individuals with higher levels of overall psychological adjustment (i.e. a better ability to cope with stress and not being prone to depression) and more open to diverse intellectually stimulating contents (Altaras, 2006; Cross, Cassady, Dixon and Adams, 2008; Bogunović, 2008). Studies have also shown that with respect to the domain in which giftedness is demonstrated, there are certain differences in the personality characteristics of gifted individuals (Bogunović, 2008).

In addition to motor and physical abilities, success in sport activities is determined by personality characteristics such as personality traits, cognitive characteristics, locus of control, goal orientation etc. (Cox, 2005). In the field of motor and physical abilities, some studies have indicated that elite athletes, overall, experience fewer psychological problems than their less successful peers and score significantly lower on interpersonal sensitivity, depression, psychoticism etc. (Mahoney, 1989). Research where Cattell's theory was used as the framework showed that athletes who play team sports, compared to

non-athletes, exhibited less abstract reasoning, more extroversion, more dependency and less ego strength, whereas individual sports athletes, compared to non-athletes, displayed less anxiety, less abstract thinking, higher levels of objectivity and more dependency (Weinberg and Gould, 2007). However, a large comparative study where personality profiles of athletes and non-athletes were compared using Cattell's 16PF showed that no single profile that distinguished athletes from non-athletes was found (Schurr, Ashley and Joy, 1977, in Weinberg and Gould, 2007). The results of various studies argue that the differences between athletes and non-athletes in terms of personality exist, but we cannot consider those differences to be definitive (Weinberg and Gould, 2007).

According to Gagne's theory of giftedness, in addition to high sensorimotor abilities, personality is an important catalyst for success. In this study, we focus on the personality traits of young rhythmic gymnasts where the theoretical background is the Five Factor Model of Costa and McCrae (1995). Rhythmic gymnastics is a good starting point for research of sport giftedness in individual sports for several reasons. Firstly, success in performance (and not at expert levels but for minimal achievement in terms of Gagné's theory) requires long and persistent practice (Law, Côté and Ericsson, 2007). Secondly, girls are recruited very early for this sport (starting from 3 or 4 years of age), because it is recommended by the World Health Organization (n.d.). Due to the benefit for general health, girls are often strongly urged by their parents to begin exercising. A consequence of this is that coaches have larger sample from which they can recruit gifted individuals. Finally, there is a possibility for longitudinal studies in this domain because girls start training at a very early age.

The main objective of this research is to investigate if gifted rhythmic gymnasts have a certain personality pattern different from other, non-gifted young athletes in this sport. In addition to exploring the personality characteristics of young gifted rhythmic gymnasts, due to the specificities of the sample (i.e. the age of the respondents), specific goals were set, including the exploration of the relationship between self-reports and observer ratings and the exploration of validity these measures have when assessing personality traits of young gifted individuals.

THE METHOD

Participants

The initial sample of participants consisted of 70 girls training rhythmic gymnastics (35 competitors and 35 amateurs) and both of their parents/custodians. The girls train in two rhythmic gymnastics clubs in Belgrade, Serbia: "Ritam" and "Palilula". In both clubs, the girls are classified into two groups, competitors and amateurs. The coaches classify the girls into these two groups based on several criteria: their judgment of their physical and motor skills and level and the success with which the girls compete. The coaches' assessment of motor abilities is based on everyday observation and their professional experience and not on some standardized instrument. With respect to the level of competition at which the girls compete, amateurs participate only in city and national competitions while the competitors participate in events at all levels (including international competitions). In addition to that, most of the girls from the amateur group do not have significant success at competitions.

It is important to mention that a lower age limit was set at 9 years of age, due to the self-report measure applied. Participants were excluded from the study if they provided

incomplete test protocols (13 protocols) or responses of questionable validity (10 protocols). The final sample consisted of 47 girls and their parents/custodians. The average age of the girls was 12.7 years ($SD=2.86$).

In order to provide a more systematic assessment of physical and motor abilities, in this research we have obtained the coaches' judgments on the relevant abilities by an instrument especially designed for this research – a check list for assessment of abilities relevant for rhythmic gymnastics – RG23 (Damnjanović, Lazarević and Petrović, 2009, details about the properties of the instrument are displayed in the Measures section). In both clubs, two coaches (one of which works with the girls on a regular basis every day for several hours) assessed the abilities of the girls.

Based on the data obtained by means of the RG23, a cluster analysis was carried out in order to check if the girls group into two groups, "amateurs" and "competitors", and if those clusters statistically significantly overlap with the categories these girls initially belonged to. The results confirmed a grouping into two groups, and a significant overlap of those clusters with the initial categories ($\chi^2=27.957$, $p=.000$). Based on this empirical confirmation, subsamples in first phase of the research were defined according to the coaches' assessment of the girls' abilities on the RG23.

In the second phase, median scores on the RG23 were calculated for both of the two aforementioned groups and we obtained four groups: amateurs, successful amateurs (girls in the amateur group who scored higher on the RG23), competitors, and successful competitors (competitors in the competitor group who scored higher on the RG23). The division of the groups by median scores was done in order for us to obtain a more precise division of the sample according to the girls' physical and motor abilities and to make a distinction between girls that could be regarded as gifted based on their scores on the RG23. Girls from the "successful competitors" group can be considered gifted for rhythmic gymnastics. The median as a "cut-off" score was chosen because of the sample size, which is relatively small. A selection of stricter criterion for the "cut-off" score would lead to a sample size reduction in certain categories, and it would have a significant effect on validity and data analysis.

Based on the coaches' initial classification, in the sample there were 29 competitors (mean age 12.84, $SD=3.32$) and 18 amateurs (mean age 12.59, $SD=2.28$). However, a final division of the sample (25 competitors and 22 amateurs) was made based on the coaches' assessment of the girls' abilities on the RG23. Although subsamples were not equal according to the duration of their training experience (competitors on average trained for 6.33 years ($SD=2.71$) and amateurs for 3.85 years ($SD=1.62$), where this difference is statistically significant ($t(45)=-3.014$, $p=.005$)), the transfer from the amateur to the competitive group is not related to the length of training but to the physical, motor abilities and motivational characteristics that the coaches assessed. The correlation coefficient between the duration of training and the tempo of the transfer from the amateur to competitor group (which in this case varies from several months to a couple of years) is $r=.024$ and is not statistically significant.

The data collection was in accordance with the ethical standards of the APA. For every girl who agreed to participate, parental permission was obtained. We instructed the parents about the research and gave them envelopes with the instructions and the instruments which they returned sealed after filling them in. The girls completed self-report measures before one of their training sessions in a room adapted for the testing situation.

Instruments and measures

Due to the well-known limitations of self-reports in personality assessment, the generally accepted view is that we should include various measures (e.g. self-reports, observer ratings, behavioral observations) in order to reliably assess the measured construct (McCrae and Weiss, 2007). A solid body of evidence gives support for the usage of observer ratings as reliable, stable and valid complementary measures and stresses their particular value when the targets are not available to make self-reports, when assessing the personality of the respondents whose self-reports are regarded as untrustworthy or if the researchers want to improve the accuracy of the assessment (McCrae and Weiss, 2007).

In order to obtain a more reliable measure of the girls' personalities, both self-reports and observer ratings were used. In order to assess the basic personality traits from the point of view of the FFM (Neuroticism (N), Extraversion (E), Openness to experience (O), Agreeableness (A) and Conscientiousness (C)), the girls completed a self-report measure on the NEOzd (NEO for children) which is a 90-item version of the Neuroticism Extraversion Openness Personality Inventory Revised adapted for children above the age of 9 (Mišić and Hodžić, 2006). All of the items are on a 5-point Likert type, but instead of numbers, the responses are verbally formulated. The parents/custodians assessed the five basic personality dimensions of their children on the Neuroticism Extraversion Openness Personality Inventory Revised (R-form) (Knežević, Radović and Opačić, 1997; Knežević, Džamonja-Ignjatović, and Đurić-Jočić, 2004). The NEO PI R (R form) is a 240-item scale.

Both self-reports and observer ratings show satisfactory psychometric properties on this sample. For the NEOzd Kayser-Mayer-Olkin (KMO), the measure of sampling adequacy ranges from .81 (Nzd) to .95 (Ezd), and the coefficients of internal consistencies (Cronbach α) range from .72 (Nzd) to .87 (Czd). For the mothers' observer ratings on the NEO PI R, the KMO ranged from .80 (Em) to .97 (Cm), and the Cronbach α ranged from .72 (Em) to .90 (Cm). For the fathers' observer ratings on the NEO PI R, the KMO ranged from .76 (Af) to .99 (Cf), the Cronbach α ranged from .64 (Af) to .93 (Cf). The reasons for the slightly lower values of the psychometric properties on the NEOzd can be found in the sample size. Nevertheless, the self-reports and mothers' and fathers' observer ratings correlate moderately on the E (.40, and .31), O (.29 and .37), and C (.51 and .38), respectively. These coefficients are in accordance with those reported in the relevant literature, where in general self-reports and observer ratings correlate moderately (.43-.60). Slightly lower correlations could be due to the different inventories used, although they are designed for the assessment of the same dimensions. Intercorrelations of self-reports and observer ratings on the dimensions of Neuroticism and Agreeableness are not statistically significant. An evaluation of the correlation matrices indicate that on the NEOzd these dimensions capture only certain facets of the domains (e.g. depression, compliance and tender-mindedness). Observers' ratings intercorrelate moderately and highly: N=.35, E=.64, O=.75, A=.64, C=.74. Both psychometric properties of all the instruments and intercorrelations suggest that the data can be treated with confidence.

For the assessment of abilities relevant for rhythmic gymnastics, the Check list RG23 was used. It consists of 23 Likert-type items, 19 of which are motor skills and 4 are tendencies in behavior related to training (e.g. discipline, punctuality, etc.). Item-selection was based on literature review, the International gymnastics federation guide and interviews with trainers. The factor analysis with a Varimax rotation extracted two factors explaining 72% of the variance ("physical qualities" and "motivational qualities"). The analysis shows that both factors on the check list ("physical qualities" and "motivational qualities") have very good coefficients of representativeness (KMO=.99 and KMO=.94), reliability (Cronbach α =.98 and α =.93 and

Lord-Kayser-Caffrey's $\beta=.98$ and $\beta=.84$) and homogeneity ($h1=.69$ and $h1=.50$), respectively (Damnjanović, Lazarević and Petrović, 2009).

Data analysis

Phase 1: An analysis of variance was conducted in order to examine the differences in basic personality traits between two groups of rhythmic gymnasts: competitors and amateurs.

Phase 2: An analysis of variance was conducted in order to examine the differences in basic personality traits between four groups of rhythmic gymnasts: amateurs, more successful amateurs, competitors, and successful competitors (called "gifted rhythmic gymnasts").

RESULTS

Phase1: In the first phase, the girls were classified into two groups (amateurs and competitors) according to the results of the coaches' assessment on Check list RG23. In this phase, the univariate analysis of variance (ANOVA) was conducted in order to assess whether competitors and amateurs differ in terms of basic personality traits assessed by both self-reports and observers ratings. The homogeneity of the variances was checked and since this assumption was not violated we can interpret the results obtained by the ANOVA.

Table 1 shows the means of the groups (competitors and amateurs) when compared on the basis of 18 variables, basic personality traits assessed by both self-reports and observer ratings (mothers and fathers).

Table 1. A summary of the descriptive statistics – amateurs and competitors.

| Var. | Group | | Total (N=47) |
|------|-----------------|--------------------|----------------|
| | Amateurs (N=24) | Competitors (N=23) | |
| | M (SD) | M (SD) | M (SD) |
| Nzd | 1,69 (.48) | 1,73 (.50) | 1,71 (.48) |
| Ezd | 2,94 (.51) | 3,15 (.40) | 3,05 (.47) |
| Ozd | 2,85 (.48) | 3,16 (.42) | 3,02 (.47) |
| Azd | 2,66 (.39) | 3,03 (.33) | 2,85 (.40) |
| Czd | 2,87 (.44) | 3,29 (.49) | 3,09 (.51) |
| Dzd | 1,26 (.47) | 1,03 (.23) | 1,14 (.40) |
| Nm | 76,91 (24,22) | 72,22 (15,91) | 74,41 (20,14) |
| Em | 120,45 (20,95) | 119,11 (11,42) | 119,74 (16,40) |
| Om | 109,55 (17,71) | 112,77 (19,28) | 111,26 (18,43) |
| Am | 118,23 (15,30) | 132,71 (17,48) | 125,72 (17,78) |
| Cm | 124,73 (25,39) | 135,42 (21,04) | 130,41 (23,54) |
| Dm | 2,17 (.33) | 2,09 (.28) | 2,13 (.30) |
| Nf | 78,08 (14,06) | 72,23 (18,34) | 74,97 (16,57) |
| Ef | 116,95 (14,38) | 116,99 (13,14) | 116,97 (13,58) |
| Of | 111,10 (12,17) | 109,09 (17,64) | 110,03 (15,20) |
| Af | 120,92 (11,69) | 123,81 (14,71) | 122,46 (13,32) |
| Cf | 122,88 (22,37) | 130,73 (24,19) | 127,05 (23,44) |
| Df | 2,24 (.23) | 2,21 (.35) | 2,22 (.29) |

Note. Nzd, Ezd, Ozd, Azs, Czd – five personality traits self-reports; Nm, Em, Om, Am, Cm – mothers' observer ratings on five personality traits; Nf, Ef, Of, Af, Cf – fathers' observer ratings on five personality traits; M – Mean, SD – standard deviation. Scale scores for Nzd, Ezd, Ozd, Azd and Czd are calculated as average, while the scores for the scales Nm, Em, Om, Am, Cm, and Nf, Ef, Of, Af, Cf are calculated as summary score, based on procedures recommended by the authors of the instruments. Numbers where statistically significant differences exist are shown in bold.

The results of the ANOVA show that the two groups differ in terms of Openness (Ozd), Agreeableness (Azd), Conscientiousness (Czd), as assessed by self-reports and on Agreeableness (Am) as assessed by the mothers, $F(1, 45) = 5.509, p = .023$, $F(1, 45) = 12.215, p = .001$, $F(1, 45) = 9.407, p = .004$, $F(1, 45) = 8.426, p = .006$, respectively.

Girls from the competitive group scored higher on Openness (Ozd), Agreeableness (Azd), and Conscientiousness (Czd) on the self-reports. In addition, when discussing the results based on the mothers' observer ratings, we see that the girls from the competitive group have statistically significant higher scores than girls from the amateur group in terms of Agreeableness (Am). The results show that based on the fathers' observer ratings there are no differences between the two groups of girls.

Phase 2: After the classification of girls into two groups (in the first phase), in the second phase, the groups were divided according to the median scores of both groups obtained on the RG23. Now, the sample was divided into four groups: amateurs, "successful" amateurs (amateur girls with higher scores on the RG23), competitors and "successful" competitors (competitors with the highest scores on the RG23). Table 2 shows the means and standard deviations of basic personality traits for each cell.

Table 2. A summary of descriptive statistics for all personality measures for the 4 groups of girls.

| | Group | | | | Total |
|------|----------------|----------------|----------------|----------------|----------------|
| | A (N=12) | SA (N=12) | C (N=11) | SC (N=12) | |
| Var. | M (SD) |
| Nzd | 1,76 (.41) | 1,42 (.68) | 1,77 (.49) | 1,71 (.48) | 1,71 (.48) |
| Ezd | 2,81 (.45) | 3,24 (.56) | 3,20 (.38) | 3,03 (.48) | 3,05 (.47) |
| Ozd | 2,96 (.42) | 2,74 (.37) | 3,13 (.49) | 3,04 (.52) | 3,02 (.47) |
| Azd | 2,63 (.28) | 2,46 (.45) | 2,95 (.40) | 3,07 (.30) | 2,85 (.40) |
| Czd | 3,05 (.44) | 2,50 (.37) | 3,14 (.54) | 3,26 (.46) | 3,09 (.51) |
| Dzd | 1,45 (.54) | 1,04 (.29) | 1,01 (.29) | 1,04 (.28) | 1,14 (.40) |
| Nm | 86,25 (24,96) | 71,2 (22,06) | 73,96 (16,20) | 66,47 (15,81) | 74,41 (20,14) |
| Em | 114,50 (19,27) | 130,8 (22,47) | 124,45 (13,60) | 115,53 (12,35) | 119,74 (16,40) |
| Om | 109,58 (19,22) | 104,8 (15,66) | 119,75 (14,55) | 106,27 (20,57) | 111,26 (18,43) |
| Am | 118,58 (16,10) | 112,6 (15,6) | 126,11 (17,28) | 135,40 (16,16) | 125,72 (17,78) |
| Cm | 126,92 (29,01) | 109,8 (17,6) | 129,89 (17,83) | 140,60 (21,89) | 130,41 (23,54) |
| Dm | 2,27 (.35) | 2,15 (.22) | 2,04 (.30) | 2,09 (.27) | 2,13 (.30) |
| Nf | 82,58 (14,66) | 66,59 (13,16) | 76,19 (17,78) | 70,46 (16,41) | 74,97 (16,57) |
| Ef | 113,66 (15,94) | 119,39 (14,15) | 120,26 (13,04) | 115,53 (12,41) | 116,97 (13,58) |
| Of | 112,34 (14,67) | 108,81 (7,43) | 111,34 (15,49) | 107,27 (17,86) | 110,03 (15,20) |
| Af | 119,95 (10,95) | 117,69 (12,32) | 120,63 (13,44) | 127,89 (14,69) | 122,46 (13,32) |
| Cf | 128,85 (25,07) | 114,01 (8,59) | 119,08 (24,50) | 137,94 (20,76) | 127,05 (23,44) |
| Df | 2,28 (.24) | 2,19 (.16) | 2,24 (.35) | 2,17 (.32) | 2,22 (.29) |

Note. Nzd, Ezd, Ozd, Azs, Czd – five personality traits self-reports; Nm, Em, Om, Am, Cm – mothers' observer ratings on five personality traits; Nf, Ef, Of, Af, Cf – fathers' observer ratings on five personality traits; A-amateurs, SA-successful amateurs, C-competitors, SC-successful competitors. Scale scores for Nzd, Ezd, Ozd, Azd and Czd are calculated as average, while the scores for the scales Nm, Em, Om, Am, Cm, and Nf, Ef, Of, Af, Cf are calculated as summary scores, based on procedures recommended by the authors of the instruments. Numbers where statistically significant differences exist are bolded.

In this phase the ANOVA was conducted in order to explore the differences between the four groups in terms of the measured variables. The homogeneity of the variances was checked and this assumption was not violated.

Significant differences were obtained for the dimensions Agreeableness (Azd), Conscientiousness (Czd) assessed by self-reports and Agreeableness (Am) assessed by mothers, $F(3, 45) = 6.295, p = .001$, $F(3, 45) = 3.299, p = .029$, $F(3, 45) = 3.457, p = .025$, respectively. The results show that when compared to the fathers' observer ratings there are no significant differences between the groups of girls.

We conducted a Post hoc Sidak test for multiple comparisons of the differences between four groups of respondents in terms of significant dimensions. The results (Table 3) show that in terms of Agreeableness (Azd) both groups of competitors differed from both groups of amateurs, but between the groups of competitors (successful and less successful) there are no significant differences for this dimension. Conscientiousness (Czd) differences exist only between the "successful" competitors and "successful" amateurs. Generally speaking, mothers' observer ratings on Agreeableness (Am) show that there are statistically significant differences between the groups, and multiple comparisons do not show statistically significant results. Therefore, we can assume that there are differences between the 4 groups of girls in terms of this variable, but they are not sufficiently strong enough to emerge in the Sidak Post hoc test.

Table 3. Multiple comparisons of differences between the four groups – Post hoc Sidak test.

| Var. (I) | Group (J) | Groups | Mean Difference (I-J) | SE | p | |
|----------|-----------|--------|-----------------------|------|-------|-------|
| Azd | A | SA | ,18 | ,18 | ,922 | |
| | | C | -,32 | ,13 | ,129 | |
| | | SC | -,44* | ,13 | ,012* | |
| | SA | A | -,18 | ,18 | ,922 | |
| | | C | -,49 | ,18 | ,050* | |
| | | SC | -,62* | ,18 | ,008* | |
| | | C | A | ,32 | ,13 | ,129 |
| | | | SA | ,49 | ,18 | ,050* |
| | | | SC | -,12 | ,13 | ,909 |
| | Czd | A | SA | ,55 | ,25 | ,190 |
| | | | C | -,09 | ,18 | ,996 |
| | | | SC | -,22 | ,18 | ,817 |
| SA | | A | -,55 | ,25 | ,190 | |
| | | C | -,64 | ,24 | ,067 | |
| | | SC | -,76* | ,24 | ,019* | |
| C | | A | ,09 | ,18 | ,996 | |
| | | SA | ,64 | ,24 | ,067 | |
| | | SC | -,12 | ,17 | ,982 | |

Note. Azd, Czd – Agreeableness, Conscientiousness (self-reports); A-amateurs, SA-successful amateurs, C-competitors, SC-successful competitors. * $p < .05$

In order to have a more comprehensive view of the results, it is important to compare the results on the NEOzd obtained in this study with the results obtained on the convenience sample from a general population of children on which the NEOzd instrument was tested (Mišić and Hodžić, 2006). A comparison of the means between the girls training rhythmic gymnastics (both amateurs and competitors) and the girls from convenience sample shows statistically significant differences in terms of the dimensions Nzd, Azd, and Cz ($F=10.658$, $p<.05$, $F=4.131$, $p<.05$, $F=5.379$, $p<.05$, respectively). Both groups of rhythmic gymnasts score lower on Neuroticism in comparison to the girls from the convenience sample. On the Azd and Cz scales, the competitors have significantly higher scores compared to both the amateur and convenience sample. The differences on the Extraversion and Openness scales are not statistically significant.

DISCUSSION

In general, the results show that girls from the competitive group differ from the amateurs significantly in terms of Agreeableness (Azd), Conscientiousness (Czd), Openness (Ozd), as assessed by the self-reports and in terms of Agreeableness (Am) assessed by the mothers. In addition, compared to the participants from the convenience sample (from a general population), competitors have significantly higher scores on Agreeableness (Azd) and Conscientiousness (Czd) and significantly lower scores on Neuroticism (Nzd).

These results suggest that girls that have very high achievements (i.e. demonstrate talent in Gagné terms) in this sport can be described as more cooperative, kind, friendly, pleasant (i.e. they have higher scores on the self-report Agreeableness scale), are organized, responsible and thorough (i.e. they have higher scores on the self-report Conscientiousness scale), which is very important for a successful training process. In sports, such as rhythmic gymnastics, long hours of practice and intensive work with a coach are important for successful performance (Weinberg and Gould, 2007). In addition, these girls have to focus very early on rhythmic gymnastics and do not have the opportunity to take part in some other activities (Law et al, 2007). Therefore, a higher presence of positive characteristics stemming from Agreeableness (e.g. willingness to cooperate, friendliness, tolerance) and Conscientiousness (e.g. sense of responsibility, good organization, willingness to fulfill tasks) is very important for high achievements in this sport.

In rhythmic gymnastics, the ability to articulate the aesthetic component is essential for supreme achievement. A higher tendency in the group of competitors, in comparison to amateurs, to appreciate art, music etc., action and a receptiveness to inner emotional states (i.e. a higher score on the self-report Openness scale) is of special relevance, having in mind that this discipline comprises both a sport and aesthetic component.

When discussing the personality characteristics of gifted rhythmic gymnasts, the results indicate that successful competitors (i.e. gifted rhythmic gymnasts) scored highest on the Agreeableness and Conscientiousness scales (assessed by self-reports), but they did not differ significantly from the group of competitors. These results support the prevailing consensus among authors that personality differences among athletes of both sexes are narrowing with the level of sport excellence (Cox, 2005).

Based on these results, we cannot say that individuals gifted in rhythmic gymnastics have a specific pattern of personality traits that would differentiate them from less successful competitors. These results are in accordance with the results of other studies

which show that when compared on the basis of personality traits, elite athletes of both sexes do not differ significantly from competitors at lower competitor levels and ranking (Cox, 2005). However, the results imply that compared to the amateur group, successful competitors have a different pattern of personality traits. This assumption is empirically validated with the result that between the group of amateurs and girls from the convenience sample from the general population there are no significant differences with respect to personality traits. We can assume that a certain pattern of personality traits and high physical and motor abilities make individuals, the ones we call gifted, highly successful in rhythmic gymnastics. In other words, a certain pattern of personality traits supports the transformation of gifts (i.e. high physical and motor abilities) into externally validated success. However, in order to test the stability of the results and to gain a more thorough overview on the mutual relationship between intensive sport activity and personality traits in those gifted in sport it is recommended to perform a retest analysis on this sample.

In spite of the fact that slightly lower reliability coefficients of some dimensions of NEOzd can be due to small sample size, these results and lack of intercorrelations of self-reports and observer ratings on Neuroticism and Agreeableness indicate that attention should be paid to the re-examination of items from the Nzd and Azd scale.

The results indicate that when assessing the personality traits of young respondents, self-reports can be used as valid measures. Although for self-reports and observer ratings identical inventories were not used, both moderate correlations between self-reports and corresponding dimensions from observer ratings and intercorrelations of observer rating dimensions support the use of self-reports in the personality assessment of young individuals.

In conclusion, having in mind that rhythmic gymnastics is a sport discipline that sets a wide range of demands even at the youngest age, the results are potentially valuable for making generalizations in terms of gifted persons involved in other individual sports. But, in order to make generalization of these results it would be recommendable to replicate a similar methodology (i.e. a multi-method approach in the assessment of target concepts) on a larger sample of gifted individuals both in this sport and other individual sport disciplines.

Authors' note. The treatment of the participants was in accordance with the rules of the American Psychological Association (APA) and was approved by the Institutional review board of the Department of Psychology, Faculty of Philosophy, University of Belgrade, Serbia.

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OSOBENE ODLIKE MLADIH NADARENIH RITMIČKIH GIMNASTIČARKI

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Glavni cilj istraživanja bio je da se ispituju osobne karakteristike mladih nadarenih ritmičkih gimnastičarki, putem petofaktorskog modela ličnosti. Uzorak ispitanica se sastojao iz 47 devojčica (prosečne starosti 12.7 godina), podeljenih u četiri grupe: amaterke, uspešnije amaterke, takmičarke i uspešnije takmičarke (t.j. nadarene ritmičke gimnastičarke) pod starateljstvom oba roditelja. Za procenu osobnosti korišćeni su i izveštaj o samovrednovanju (Neuroticism Extraversion Openness for children (NEOzd) i rangiranju (NEO PI-R). Rezultati analize varijanse (ANOVA) pokazali su da su ispitanice iz obe takmičarske grupe ostvarile veće vrednosti samovrednovanja u Otvorenosti, Prijatnosti, i Savesnosti (na osnovu procena majki) u poređenju sa obe grupe ispitanica amaterki. Rezultati ukazuju da nadarene ispitanice imaju osoben model ličnosti koji ih na osnovu visokih motoričkih sposobnosti čini najuspešnijim među ritmičkim gimnastičarkama.

Ključne reči: osobene odlike, nadarenost u sportu, ritmička gimnastika, petofaktorski model ličnosti.