EMOTIONAL INTELLIGENCE IN ACROBATIC GYMNASTICS: HOW IMPORTANT IS THE ATHLETIC PROFILE?

UDC 796.894:159.955

Vasiliki Tatsi, Eleni Selemidi, Christina Ypsilanti, Fotini Venetsanou

School of Physical Education and Sport Science, National and Kapodistrian University of Athens, Athens, Greece

Abstract. Emotional intelligence (EI) is considered to be an important parameter in the world of sports, as it affects the athletic performance and wellbeing of athletes. The purpose of this study was to examine EI in athletes of Acrobatic gymnastics (ACROGYM). Furthermore, potential differences in EI that may be associated with athletic profile (age, years of participation in ACROGYM, number of competitions, competition category) were investigated. In total, 95 acrobatic gymnasts, 9-18 years old (15.92 ± 3.17 years) participated voluntarily. The athletes’ EI was assessed with the Emotional Quotient Inventory-Youth Version (EQ-i: YV), culturally adapted for the Greek population. According to the results, the ACROGYM athletes presented high levels of EI. However, the correlation analyses revealed that the association between the athletes’ profile and scores on EI scales was not statistically significant (p > .05). The t-tests and the MANOVAs applied showed no statistically significant differences in the EI subscales associated with gymnasts’ (a) participation in national competitions (p > .05); (b) frequency of training sessions per week (p > .05); (c) (not) being a member of a duet or a trio (p > .05); (d) position in the group (base, middle, top). It can be concluded that Greek acrobatic gymnasts present high levels of EI regardless of their age, their sport’s experience or their level of performance. Moreover, neither their participation in a group nor their role in it seem to differentiate the dimensions of EI. Nevertheless, further research is needed in order to shed more light into EI in gymnastics.

Key words: ACROGYM, Emotional Quotient Inventory, mood, level of performance
1. INTRODUCTION

Emotional intelligence (EI) is the ability of individuals to recognize and understand both their own emotions and the emotions of others, control them and to use the information derived from them to guide their behavior (Brody, 2004). Emotion management outcomes are highly related to EI (Bahrololoum, Hassani, Bandeli & Akbari, 2012; Lane, Thelwell & Devonport, 2009) as EI plays an important role in reducing aggressive behaviors (García-Sancho, Salguero, & Fernández-Berrocal, 2014), job performance (Fox & Spector, 2000), social life (Chan & Mallett, 2011; Goleman, 1995; Lane et al., 2010; Meyer & Fletcher, 2007; Mavroveli et al., 2009; Saarni, 1999; Schutte et al., 2001) and well-being (Cabello & Fernandez-Berrocal, 2015).

Regarding sport, there is a growing interest in EI. Numerous authors state that sports offer a significant context, in which several aspects of EI are being developed (Allen & Laborde, 2014; Arikan, 2020; Bar-On, 1997, 2006; Bukaliya & Rupande, 2015; Petrides, Gomez & Perez-Gonzalez, 2017); whereas, research shows that athletes present higher EI levels than non-athletes (Rani, 2019; Singh, Singh & David, 2020; Szabo & Urbán, 2014). Furthermore, since EI contributes to the reduction of negative emotions (Laborde, Dosseville & Allen, 2016; Mikolajczak, Menil & Luminet, 2007; Mikolajczak & Luminet, 2008; Walton, Keegan, Martin & Hallock, 2018), its importance for athletic performance is undoubtedly recognized (Akelaitis & Malinauskas, 2018; Ciarrochi, Forgas, & Mayer, 2001; Nielsen et al., 2013; Weinberg & Gould, 2010). Several researchers argue that it is important for athletes to recognize, understand, control, and manage their emotions (Crombie, Lombard & Noakes, 2009; Magrum, Waller, Campbell & Schempp, 2019), and be able to make better decisions (Campo et al., 2017; Laborde, Guillén & Mosley, 2016; Laborde, Guillén & Watson, 2017; Petrides et al., 2017). Indeed, athletes with higher EI have been found to control their emotions better in stressful situations (Laborde, Dosseville, Guillén, & Chávez, 2014a), respond better to repetitive periods of strenuous exercise (Lane & Wilson, 2011) and perceive problems in their sports as learning opportunities (Jahroni & Ghaleh, 2015).

Nevertheless, the existing research on potential EI differences among athletes from different sport types and/or with different athletic profiles is limited and provides contradictory data, so far. In some studies it has been found that athletes from different types of sport present similar EI levels (Bal, Singh, Sood & Kumar, 2011; Laborde et al., 2017); whereas, there are other studies showing significant differences between team and individual sports in specific aspects of EI, such as psychological skill and motives (Kajbafnezhad et al., 2011; Sudheesh, 2020). Regarding the association of the athletic profile with EI, research is quite limited. There is some evidence supporting the superiority of elite athletes, compared to novices in some sports (canoe; track and field; football; taekwondo; tennis) (Arribas-Galarraga et al., 2019; Castro-Sánchez et al., 2018; Saies et al., 2014), but these findings cannot be generalized to other sports. Laborde, Dosseville, Guillén, and Chávez (2014b) found that the frequency and the duration of athletic involvement are more relevant to EI growth than years of participation. However, Laborde, Guillén and Watson (2014) found the opposite.

Acrobatic gymnastics (ACROGYM) is a gymnastics discipline in which the athletes cooperate to execute difficult gymnastics elements while being synchronized, and performing dance steps, acrobatic pyramids, jumps, etc. They present their gymnastic routines in duets or groups, in which each athlete has a different position/role, according
to their individual features and abilities. In more detail, duets are made up of a base and a top. Women's groups are comprised of a base, a middle, and a top partner and men's groups have a base, two middle and one top partner. Bases are generally older athletes that display strength and balance; tops are younger athletes and display flexibility and agility; middles are often required to show a combination of all attributes. ACROGYM is a highly demanding sport requiring among others, body control, balance, strength, courage, and trust between the members of group. It is obvious that EI is important in ACROGYM; however, to our knowledge studies addressing EI in gymnastics and in particular in acrobatics have not been published. Thus, the purpose of this study was to examine EI in athletes participating in ACROGYM and to investigate potential EI differences that may be associated with their athletic profile.

2. Method

2.1. Participants

In total, 95 acrobatic gymnasts, who were members of seven gymnastics clubs from different areas in Greece, volunteered to participate in this study. Among them, 91 were females and 4 males, and their age ranged between 9 and 18 years (M=15.92 ± 3.17 years).

2.2. Measures

The athletes’ EI was assessed with the Emotional Quotient Inventory-Youth Version (EQ-i: YV, Bar-On & Parker, 2000), culturally adapted to the Greek population (David-Spanopoulou, 2020). The EQ-i: YV is a 60-item self-report tool that is based on the Bar-On Emotional Quotient Inventory (EQ-i, Bar-On, 1997) and aims at measuring EI in youth between 7 and 18 years old.

The EQ-i: YV consists of five scales that represent different EI dimensions: the intrapersonal dimension (including emotional self-awareness, assertiveness, self-regard, self-actualization, independence); interpersonal dimension (including empathy, social responsibility, interpersonal relationship); adaptability (including reality testing, flexibility, problem solving); stress management (including stress tolerance, and impulse control); and the general mood (including optimism and happiness). Each item is scored on a four-point Likert scale (1 = Very Seldom or Not True for Me, 4 = Very Often or True for Me). The scores of the items that constitute each scale are summed up and the scale total score is calculated. Moreover, a total EI quotient (EQ) is provided. High scores indicate a better level, while low scores indicate a lower level (Ferrándiz, Hernández, Bermejo, Ferrando & Sáinz, 2012).

The internal consistency of the Greek version of the EQ-i: YV is excellent, ranging from .87 to 0.90 (David-Spanopoulou, 2020). In the present study, the values of Cronbach's α for the EQ-i: YV revealed satisfactory reliability for the Interpersonal Dimension (α = .76), Adjustment (α = .80), General Mood (α = .82) and Positive Impression (α = .70). However, item 28 and items 3 and 39 were deleted for a satisfactory level of reliability to be achieved for the Intrapersonal dimension scale (α= .73) and the Anxiety scale (α = .72), respectively.

Apart from their EI, information about the athletes’ age, as well as their athletic profile was gathered via a questionnaire that the athletes filled. Data regarding the participants’
athletic profile included years of participation in ACROGYM; the number of competitions, competition category, participation in national competitions, frequency of training sessions per week, participation in duets or trios, and position in the group (basis, middle, top).

2.3. Procedure

Data collection started in February and was completed in April 2021. Initially, an informative online meeting was held, during which the researcher informed the coaches of the teams about the purpose and procedure of the research. Due to COronaVirus Disease 19 pandemic [COVID-19, as defined by the World Health Organization (WHO) in February 2020], and the restrictions in Greece, communication with the coaches was conducted via e-mail or telephone. Then, the consent statement form and the EQ-i: YV was uploaded to an online platform (Google forms), and after the approval of the coaches and parents of the athletes, the questionnaires were administered to the athletes through social networks. The average time needed for the participants to fill in the questionnaires was 10min and the use of personal means with internet access facilitated the process of data collection in an environmentally friendly way.

2.4. Statistical analysis

First, the participants’ descriptive data regarding their demographic characteristics, athletic profile and responses to the EQ-i: YV were calculated. Then, Cronbach’s α was computed to check the internal consistency of the questionnaire. Then, correlations between the athletes’ age, years of participation in ACROGYM, number of competitions, and the ACROGYM competition category (A, B1, B2, C, D, E) with their scores on the EQ-i: YV were computed, using Pearson’s r or Spearman’s ρ correlation coefficient, depending on the type of variables. Cohen’s (1988) cut-offs were used to estimate the strength of the statistically significant correlations.

The participants were classified into sub-groups according to whether (a) they had (or not) participated in national competitions, (b) they participated in fewer (or ≥) than three training sessions per week, (c) were members of duets or trios or participated in a team without executing routines in duets or trios. Potential differences between them in the components of EI were examined using independent samples t-tests and multivariate analyses of variance, respectively. Finally, gymnasts who were members of duets or trios (n=78) were classified into three groups according to their position/role in the group (basis, middle, top). Differences between them in the components of EI were examined using multivariate analyses of variance. For the above analyses, the IBM SPSS 25.0 software package was used for all data analysis, while the level of statistical significance was set at 0.5.

3. RESULTS

The descriptive statistics of the gymnasts’ profile are presented in Table 1, whereas their scores in the EQ-i: YV are presented in Table 2. Starting with the correlation coefficient indexes that were computed, Pearson’s r revealed that the correlation between the athletes’ age, the years they participated in AG, and the number of competitions they took part in with EI scales was not statistically significant, (p>.05). The correlation between the years of participation in AG and the adaptability was the only exception
found with a weak statistical significance (r = 27.3, p = .007). Spearman’s ρ that was computed between the athletes’ competition category and EI scales did not show a statistically significant correlation (p > .05).

Table 1 Descriptive statistics (M, SD, %) of the participants’ characteristics

<table>
<thead>
<tr>
<th>Age</th>
<th>15.92 ± 3.17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years of participation in ACROGYM</td>
<td>8.09± 3.76</td>
</tr>
<tr>
<td>Number of competitions</td>
<td>3.11± 3.16</td>
</tr>
<tr>
<td>Competition category (%)</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>6%</td>
</tr>
<tr>
<td>B1</td>
<td>18%</td>
</tr>
<tr>
<td>B2</td>
<td>10%</td>
</tr>
<tr>
<td>C</td>
<td>38%</td>
</tr>
<tr>
<td>D</td>
<td>18%</td>
</tr>
<tr>
<td>E</td>
<td>10%</td>
</tr>
<tr>
<td>Participation in national competitions (%)</td>
<td>63%</td>
</tr>
<tr>
<td>Training sessions per week (%)</td>
<td></td>
</tr>
<tr>
<td>&lt; 3</td>
<td>25%</td>
</tr>
<tr>
<td>≥ 3</td>
<td>75%</td>
</tr>
<tr>
<td>Members of duets (%)</td>
<td>22%</td>
</tr>
<tr>
<td>Members of trios (%)</td>
<td>60%</td>
</tr>
<tr>
<td>Not a member of a group (%)</td>
<td>18%</td>
</tr>
</tbody>
</table>

Moreover, according to the t-test and the MANOVAs, there were no statistically significant differences on the EI scales associated with (a) participation in national competitions (p > .05); (b) frequency of training sessions per week (p > .05); (c) being a member of a duet, a trio or not (p > .05). Similarly, in the subsample of participants who were members of groups, no statistically significant differences were detected due to the position (base, middle, top) of the athlete in the group.

Table 2 Means and standard deviations of acrobatic gymnasts on the EQ-i: YV subscales

<table>
<thead>
<tr>
<th></th>
<th>Intrapersonal</th>
<th>Interpersonal</th>
<th>Adaptability</th>
<th>Stress Management</th>
<th>General Mood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>Dimension</td>
<td>Dimension</td>
<td>Dimension</td>
<td>Dimension</td>
<td>Dimension</td>
</tr>
<tr>
<td>Acrobatics groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Duets</td>
<td>11.00±2.64</td>
<td>42.24±3.08</td>
<td>31.00±4.02</td>
<td>22.24±4.44</td>
<td>43.90±5.30</td>
</tr>
<tr>
<td>Trinos</td>
<td>11.95±3.19</td>
<td>42.02±3.67</td>
<td>32.33±4.00</td>
<td>22.35±5.05</td>
<td>43.60±4.72</td>
</tr>
<tr>
<td>Basis</td>
<td>12.09±3.13</td>
<td>42.28±3.51</td>
<td>32.05±4.07</td>
<td>22.65±4.78</td>
<td>43.75±5.46</td>
</tr>
<tr>
<td>Position in group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top</td>
<td>11.64±2.73</td>
<td>42.36±3.32</td>
<td>30.57±4.24</td>
<td>20.57±5.02</td>
<td>43.93±5.36</td>
</tr>
<tr>
<td>National competitions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-participating</td>
<td>11.03±2.72</td>
<td>41.77±2.82</td>
<td>30.83±3.47</td>
<td>23.00±5.10</td>
<td>43.63±5.32</td>
</tr>
<tr>
<td>Participants</td>
<td>11.97±3.04</td>
<td>41.88±3.70</td>
<td>32.03±4.22</td>
<td>22.67±5.03</td>
<td>43.95±5.31</td>
</tr>
</tbody>
</table>
4. DISCUSSION

The purpose of this study was to examine EI in athletes participating in ACROGYM. Our main findings were that the acro gymnasts present high levels of EI; however, EI does not associate with any feature of their athletic profile.

Regarding the gymnasts' athletic profile, according to our results, no element (years of participation in ACROGYM, number of competitions, competition category) correlated with EI. Those findings are contrary to those of other studies, who report that elite athletes present higher levels of EI components (empathy, emotional recognition, emotional control and regulation) (Chakarvati & Lal, 2016; Crombie et al., 2009; Laborde, Brüll, Weber, & Anders, 2011; Laborde, Yot, Dosseville & Salinas, 2012; Lane et al., 2009; Mikolajczak et al., 2007; Perlini & Halverson, 2006; Saies et al., 2014; Zizzi, Deaner, & Hirschhorn, 2003). Similarly, there was no association between the number of training sessions per week and the athletes' EI level. This is in agreement with Guillen and Laborde (2014), who found that practice frequency is not associated with EI, and argue that the key component is practice duration. Nevertheless, in the current study, data regarding practice duration were not gathered.

Since the requirements for teamwork increase in acrobatic routines in duets and trios, the potential EI differences of gymnasts who participate (or not) in duets or trios were examined. However, statistical analyses did not reveal any differences between the gymnasts. Nevertheless, previous researchers noted that team sport athletes are involved with their teammates, spending time training together (Kajbafnezhad et al., 2011); however, they present high emotional management (Castro-Sánchez et al., 2018) and higher rates of emotional self-regulation and sociability than individual sport athletes (Petrides, 2009).

Even though in this study no significant differences were detected among acrobatic athletes due to their athletic profile, the high levels of their EI should be taken into consideration. Similar values were observed in previous studies, which found that the ability of the athletes to use and control their motions and other components, social skills, self-awareness, empathy, emotional stability, altruistic behavior as well as adaptability and psychosocial function were higher in athletes than non-athletes (Rani, 2019; Rutkowska & Bergier, 2015; Singh et al., 2020; Szabo & Urbán, 2014).

Nevertheless, the fact that the scale of general mood, which reflects the participants’ optimism and happiness, presented the lowest values should be noted. This finding can be attributed to the period in which this study was conducted, which was during the second lockdown due to the COVID-19 pandemic. In two studies conducted in 2020 it was revealed that the pandemic negatively affected the mood of handball players and the quality of sleep in soccer players. In both studies the findings were attributed to perceived fatigue’s level, depression and stress that were caused by negative lifestyle changes (lower levels of physical exercise, higher consumption of alcohol, other abusive behaviours, etc.) (Mon-López, García-Aliaga, Bartolomé & Solana, 2020; Mon-López, de la Rubia Riaza, Hontoria Galán & Refoyo Roman, 2020).

To our knowledge, this is the first study shedding light into EI in acrobatic gymnasts. However, there are some limitations that should be considered when interpreting the results. To start with, as mentioned before, data collection was conducted during the COVID-19 lockdown, which means that the participants’ routine was involuntarily altered. Moreover, among the participants there were only 4 males; thus, potential gender related differences could not be investigated.
5. CONCLUSIONS

Summarizing the aforementioned, Greek acrobatic gymnasts present high levels of EI regardless of their age, their experience in this sport, or their level. Moreover, neither their participation in a group nor their role in it seems to differentiate the dimensions of EI. However, ACRO gymnasts presented low scores on the scale of general mood, which may be due to the negative impact of the pandemic of COVID-19 on their lives. Although this study provides useful information about EI in acrobatic gymnasts, further research after the end of the pandemic will shed more light on EI, which is an important factor affecting not only the athletes’ performance but also their well-being.

REFERENCES


Emotional Intelligence in Acrobatic Gymnastics

Emotional intelligence (EI) smatra se važnim parametrom u sportskom svetu, s obzirom na to da utiče na sportske performanse i dobrobit sportista. Cilj ovog istraživanja bio je da se analizira EI sportista koji se takmiče u akrobatskoj gimnastici (ACROGYM). Potencijalne razlike u EI koje se mogu povezati sa profilom sportistike (godine starosti, godine bavljenja ACROGYM, broj takmičenja na kojima je sportista učestavljao, rang takmičenja) takođe su analizirane. Ukupno je 95 akrobatskih gimnastičara, starosti 9-18 godina (15.92 ± 3.17 years), dobrovoljno učestvovalo u istraživanju. Njihova EI analizirana je uz pomoć EQ-i: YV upitnika, koji je prilagođen populaciji grčkih sportista. Kod ACROGYM atletičara uočeni su visoki nivoi EI. Uprkos tome, korelaciona analiza utvrdila je da korelacije između profila sportistika i vrednosti na EI nisu bile statistički značajne (p > .05). T-testom i MANOVA analizom nisu utvrđene statistički značajne razlike za EI podskale za (a) učestvovanje na nacionalnim takmičenjima (p > .05); (b) broj treninga nedeljno (p > .05); (c) (ne)učestvovanje u duševnom ili tijeku (p > .05); (d) mesto u timu prilikom ekipnog nastupa. Međe se zaključiti da grčki akrobatski gimnastičari imaju visok nivo EI uprkos njihovim godinama starosti, iskustvu u sportu, i sportskih performansi. Ni njihovo učestvovanje u timskim nastupima ni njihova uloga u timu ne utiče na razlike u dimenzijama EI. Ipak, dalja istraživanja su neophodna kako bi se bolje razumela uloga EI u gimnastici.

Ključne reči: ACROGYM, Emotional Quotient Inventory test emotivne inteligencije, raspoloženje, nivo sportskih performansi