Peculiarities of the success achievement motivation display of elite athletes with cerebral palsy when preparing for basic competitions

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Abstract:
We studied the peculiarities of the success achievement motivation display of the 9 elite female athletes with cerebral palsy. We received the data at the beginning and at the end of the competitive period of preparation for the World Athletics Championship. Mean age = 25.4 ± 4.8, except for one female athlete who was 40.2 years old. The preliminary results showed that the three female athletes who competed in sprint and jumping had prevailing the failure avoidance motive, this particular motive and the success achievement motive were balanced for the one athlete. Two female athletes who competed in discus throw and shot-put had prevailing the success achievement motive, while the other three athletes had prevailing the failure avoidance motive. The results at the end of the competitive period showed that all female athletes had unchanged peculiarities of the motivation display. These athletes have shown high results at the competitions. The obtained data are discussed in terms of their use in sports psychology and the Paralympic athletes training process.

Keywords: adaptive sports, motivation, prevailing motive.

Introduction
Athlete training takes place after different directions (Dick, 2007). Psychological training is the content of the one of them (Silva, Weinberg, 1984; Wilmore, Costill, Kenney, 2012). Fully this applies to athletes with general functional impairment (DePauw, Gavron, 2005; Sherrill, 2004; Winnick, 2004) and locomotor system, in particular (Cooper, Sherrill, Marshall, 1986; Dummer, Ewing, Habeck, Overton, 1987; Kitisos, Domoutsoglou, Lazaridis, Zaggelidis, 2009). Already at the initial stage of their physical and technical and tactical training it is necessary to take into account the peculiarities of the morphological and functional indicators dynamics (Iedynak, 2005a; Iedynak, 2005b; Vanlandewijck, Thompson, 2017). The increased attention should be given to the psychological training of such athletes (Iedynak, 2003; Martin, 2006). In perspective, the share of such training in the total amount of training loads of athletes with cerebral palsy should increase. This is due to a complex of reasons, including the ability to manage biological reserves more effectively (Gagea, 2010; Derkach, Iedynak, 2014), to maintain the highest result for a long time (Dick, 2007; Makarowski, 2013), to increase the effectiveness of the coach and athlete interaction (Winnick, 2004), to complete a sports career with the least negative consequences (Raalte, Andersen, 2007).

The psychological training content of athletes with cerebral palsy, especially at the stage of maximal realization of sport possibilities, should be individually oriented (Dunn, Fait, 1997; Hutzler, 2007; Gagea, 2010; Wilmore, Costill, Kenney, 2012). One of the major tasks of such training is to strengthen and maintain a high level of athletes motivation (Winnick, 2004). Motivation is an important psychological variable in physical activity and sports as it determines both entry and continued adherence to training (Iedynak, Mytskan, Galamanjuk, 2011; Rintaugu, Ngetich, 2012). Understanding motivating factors is an antecedent to the understanding of behaviour change and programming of athletic performance (Sherrill, Rainbolt, 1988; Dick, 2007; Makarowski, 2013). Due to the latter, it is important to take into account the peculiarities of the athlete's motivation to achieve success, taking note of sex (Ajzen, 2005). This is due to the fact that the success achievement motive and the failure avoidance motive are two generalizing motives of the individual (Ehlers, 1965; Stanley, Cumming, Standage, & Duda, 2012). However, there is no research on the establishment of common trends, as well as the display peculiarities of the above-noted motives of women and men who are...
athletes of the highest qualification, but are characterized by functional impairment of the locomotor system. The existing situation does not contribute to improve the psychological training of such athletes, and therefore to achieve their higher results in basic competitions, including the World Athletics Championship and the Paralympic Games. In connection with the above, there is a necessity for conducting a special study.

Material & methods

Participants

The study involved 9 female athletes who were part of the National Paralympic League of Athletics, and then participated in the World Athletics Championship (WAC). The diagnosis was the same for all - cerebral palsy, the specialization of 4 athletes - two types, namely sprint and long jump, specialization of the other 5 - discus throw and shot-put. The age of the each athlete was within the range of 25.4 ± 4.8 years, except for the one athlete (Y.T.), who was 40.2 years, and her specialization was discus throw and shot-put. The research was conducted in compliance with the WMA declaration of Helsinki: Ethical principles for medical research involving human subjects, 2013. The study protocol was approved by the Ethical committee of the Kamianets-Podilsky Ivan Ohienko national university.

Procedures

Athletes were tested twice, namely at the beginning of the training period and one week prior to the start of the WAC. The questionnaire was used for testing. The questionnaire prescribes: 41 statements, each with two answer options ("yes", "no"); assessment of the respondent by the number of points received. Points are interpreted as follows: 1-10 points - low level of the success achievement motivation, and therefore high level of the failure avoidance motive display; 11-16 points - the average level of both motives (balance of motives), 17-20 points - higher than the average level of success achievement motivation (lower than the average level of the failure avoidance motive display), 21 points or more - a high level of success achievement motivation (low level of failure avoidance motive display). The questionnaire includes the key to each question for answer assessment.

Data analysis

We studied the questionnaire data separately at the beginning and at the end of the competitive period of athletes' training. All statistical analyses were performed using SPSS Version 21. Results of descriptive statistics in this study were presented as percentages. The 0.05, 0.01 and 0.001 levels of probability were used to indicate statistical significance.

Results

Athletes specializing in sprint and jumping, at the beginning of the competitive period received an uneven number of points according to the answers contained in the questionnaire. However, the majority of the results showed a low level of success achievement motivation: three athletes scored in range of 6-9 points (see Table 1). In other words, these athletes had prevailing failure avoidance motivation. Only one result was 14 points, indicating an average level of success achievement motivation or the balance of both motives.

Table 1. Peculiarities of the success achievement motivation display of the female athletes with cerebral palsy (specialization - sprint and long jump) in the competitive period of preparation for the WAC (points)

<table>
<thead>
<tr>
<th>Surname, name</th>
<th>Class acc. to nosology</th>
<th>Result at the beginning</th>
<th>Interpretation</th>
<th>Result At the end</th>
<th>Interpretation</th>
<th>Alteration</th>
</tr>
</thead>
<tbody>
<tr>
<td>K. V.</td>
<td>T-37</td>
<td>9</td>
<td>MAF</td>
<td>10</td>
<td>MAF</td>
<td>+1</td>
</tr>
<tr>
<td>Sn. M.</td>
<td>T-37</td>
<td>6</td>
<td>MAF</td>
<td>10</td>
<td>MAF</td>
<td>+4</td>
</tr>
<tr>
<td>St. I.</td>
<td>T-38</td>
<td>14</td>
<td>MS=MAF</td>
<td>13</td>
<td>MS=MAF</td>
<td>-1</td>
</tr>
<tr>
<td>Kr. O.</td>
<td>T-37</td>
<td>6</td>
<td>MAF</td>
<td>10</td>
<td>MAF</td>
<td>+4</td>
</tr>
</tbody>
</table>

Note: MS – prevailing of the success achievement motive, MAF – prevailing of the failure avoidance motive, MS=MAF – display of both motives at the same level

Athletes specializing in field-and-track throws, after completing the questionnaire tasks, also received an uneven number of points. Notably, two athletes had points indicating the high level of the success achievement motivation, the other three athletes, on the contrary - had the low level of such motivation (see Table 2). We interpreted the latter as these athletes had prevailing the failure avoidance motivation.
After performing the volume of training loads determined for the competitive period of training, the athletes were re-examined, concerning the peculiarities of the motivation under study display. We established that all athletes had the changed number of points, by which we assessed questionnaire tasks' performance (see Table 1 & 2). However, this fact did not lead to a change in motivation: all athletes had prevailing the same motive as at the beginning of the competitive period of their training.

During the competition, all athletes have shown high achievements. One golden reward was taken in 100-meters race, shot-put and discus throw. There were 2 silver awards (in a long jump and 200-meters race), also 2 bronze awards, namely in 200- and 400-meters race.

Discussion

There are very few result improvement reserves of athletes with any functional impairments at the stage of maximal realization of the individual possibilities (Silva, Weinberg, 1984; DePauw, Gavron, 2005). Fully this concerns the athletes with cerebral palsy, who are the part of the National Paralympic Team (Derkach, Iedynak, 2014). Herewith, regardless of the class in which competes the Paralympian, one of the main reserves is related to the field of psyche (Sherrill, 2004; Winnick, 2004; Gagea, 2010; Vanlandewijck, Thompson, 2017). This fact is confirmed by the data of the implementation of the proposed complex: performing exercises during the jogging, also counter movement jumping with the recommended dosage and adjusting to their performance contribute to the results improvement in the hammer throw (Karampatos, 2013). The use of musical accompaniment in the preparation of athletes with cerebral palsy, whose specialization is the field-and-track throwing, provides improved psychological, and functional performance and motor skills (Efraimidou, Tsimaras, & Orologas, 2016). It is possible to improve sports results in the case of targeted impact on psychological indicators, among with the physical, technical and tactical training. (Mhlailescuc, 2008; Priego, 2014; Arai, 2015). However, during the development of psychological indicators, it is necessary to take into account the motivation peculiarities (Ray, 1982; Hagger, & Chatzisarantis, 2009). It should also be taken into account that athletes with a strong physical health and elite athletes with cerebral palsy have similar self-actualization profiles. Elite cerebral palsied male athletes were found to be significantly less self-actualized than normal adults in the areas of time competence, existentiality, self-acceptance, nature of man, and synergy. Able-bodied college-age male athletes were generally more self-actualized than members of their age-appropriate reference group (i.e., male college students) (Sherrill, Rainbolt, 1988). At the same time, it should be taken into account that men prefer team sports and men's sports, while women are much more motivated by individual sports and physical activity, as well as with aesthetic content (Rintaugu, Ngetich, 2012).

We identified the peculiarities of the success achievement motivation for women, who are members of the National Paralympic Athletics Team (Derkach, Iedynak, 2014). One of them is that the part of such athletes have prevailing the success achievement motive, the others have prevailing the failure avoidance motive, or both motives are balanced. But in the qualifying competitions, they all have demonstrated the higher results than other athletes who also claimed to be in the Paralympic Team. Significantly, the obtained data can be predetermined by the following: female athletes reported significantly higher outcome expectancies (OE) than male athletes and team sport athletes reported higher OE than those in individual sports. OE was significantly related to number of training hours and team meetings per year for female individual athletes (Arai, 2105). At the same time we discovered that disabled winners used both internal and external explanations to a greater degree than losers, which was inconsistent with previous literature. Previous results linking persistence in sport to the use of internal and stable attributions were supported. Subjective outcome, defined in terms of satisfaction with performance, was a more powerful explanation of achievement behavior for the disabled athletes in this study than objective outcome. Satisfaction was associated with demonstration of positive qualities such as using the right strategy and ability, with realistic assessment of ability, and with enjoying competition (Dummer, Ewing, Habeck, Overton, 1987). On the other hand, Gammage et al. (2000) suggests that appearance-based images serve a motivational function for exercisers, but data Stanley et al. (2012) indicates that the quality of that motivation may be quite controlled.
Another peculiarity we have established is that during the competitive period of preparation for WAC the motivation constancy of any female athlete has not changed. That is to say, the initial set peculiarity of the success achievement motivation display is preserved at the end of the competitive period. Other researchers also pointed out the relative constancy in the peculiarities of the success achievement motivation display (Ray, 1982; Ajzen, 2005; Makarowski, 2013; Nemček, 2016). Concurrently, it must be taken into account that the results indicated significantly increased anxiety and reduced self-efficacy and performance in the group that was integrated in both instruction and playing, suggesting that full integration might be a barrier to both acquiring the skill and to developing motivation to participate, due to reduced performance and self-efficacy perceptions (Hutzler, 2007).

Conclusions

It is essential to take into account expert advice (Platonov, 2013; Derkach, Iedynak, 2014; Vanlandewijck, Thompson, 2017) on the organization and content of psychological training of elite female athletes, including those with limited capacity of the locomotor system. Given the results obtained, the content of the psychological training of such athletes should ensure the improvement of psychological indicators, but without changing their peculiarities of the success achievement motivation display. Such recommendations should be performed not only during the competition period, but also during other periods of one-year training of the cited athletes.

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