

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

GENNADII IEDYNAK¹, LESIA GALAMANDJUK², VOLODYMYR MYSIV², VALERII MAZUR², OLENA KLJUS², LARISA BALATSKA³, YURIY YURCHYSHYN²

¹Department of Theory and Methodology of Physical Education, Lviv State University of Physical Culture, UKRAINE

²Department of Theory, Methodology of Preschool and Elementary School Education, Kamianets-Podilsky Ivan Ohienko National University, UKRAINE

³Department of Theory and Methodology of Physical Education, Chernivtsi Yuriy Fedkovych National University, UKRAINE

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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; Kitsios, 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 duration of the training period was 2.5 months. The questionnaire by T. Ehlers (1965) 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)

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

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.

Table 2. Peculiarities of the success achievement motivation display of the female athletes with cerebral palsy (specialization – discus throw and shot-put) in the competitive period of preparation for the WAC (points)

Surname, name	Class acc. to nosology	Result at the beginning		Result At the end		Alteration
		Result	Interpretation	Result	Interpretation	
P. M.	F-35	22	MS	23	MS	+1
M. A.	F-36	7	MAF	10	MAF	+3
J. V.	F-37	4	MAF	8	MAF	-1
Sh. O.	F-34	5	MAF	9	MAF	+4
Y. T.	F-33	22	MS	21	MS	-1

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

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 (Karampatsos, 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, & Orogas, 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. (Mihailescu, 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 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 structure of any female athlete has not changed. That is to say, the initially 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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References

- Ajzen, I. (2005). *Attitudes, personality, and behavior* (2nd ed. ed.). Maidenhead, Berkshire, England: Open University Press.
- Arai, H. (2015). Outcome expectancies for collective psychological performance among collegiate athletes. *Journal of Physical Education and Sport*, 15(1), 64-69. doi: 10.7752/jpes.2015.01011
- Cooper, M. A., Sherrill, C., Marshall, D. (1986). Attitudes toward physical activity of elite cerebral palsy. *Adapted physical activity quarterly*, 3 (1), 14-21. doi.org/10.1123/apaq.3.1.14
- DePauw, K. P., Gavron, S. J. (2005). *Disability and sport*, 2nd ed. Champaign, IL: Human Kinetics.
- Derkach, V. N., Iedynak, G. A. (2014). On the question of periodization training content and paralympic athletes with disorders of the musculoskeletal system in the light of the general theory of sports training. *Pedagogics, psychology, medical-biological problems of physical training and sports*, 5, 13-18. doi:10.6084/m9.figshare.971026
- Dick, F. W. (2007). *Sports training principles*, 5th ed. London: A & C Black.
- Dummer, G., Ewing, M., Habeck, R., Overton, S. (1987). Attributions of athletes with cerebral palsy. *Adapted physical activity quarterly*, 4(4), 278-292. doi.org/10.1123/apaq.4.4.278
- Dunn, J. M., Fait, H. (1997). *Special physical education: adapted, individualized, development*, 2nd ed. Dubuque, IA: Brown.
- Efrimidou, V., Tsimaras, V., Proios, M., Christoulas, K., Pgiagazoglou, A., Sidiropoulou, M., Orologas, A. (2016). The effect of a music and movement program on gait, balance and psychological parameters of adults with cerebral palsy. *Journal of Physical Education and Sport*, 16(4), 1357-1364. doi: 10.7752/jpes.2016.04217
- Ehlers, T. (1965). Ueber persoenlichkeitsbedingte unfallgefaehrung. *Archiv fuer die gesamte psychologie*, 11, 252-279.
- Gagea, A. (2010). Concerning the advanced science in high performance sport. *Journal of Physical Education and Sport*, 10(1), 13-18.
- Gammage, K. L., Hall, C. R., & Rodgers, W. M. (2000). More about exercise imagery. *The Sport Psychologist*, 14, 348-359.
- Hagger, M. S., & Chatzisarantis, N. L. D. (2009). Integrating the theory of planned behaviour and self-determination theory in health behaviour: A meta-analysis. *British Journal of Health Psychology*, 14(2), 275-302. doi: 10.1348/135910708x373959
- Hutzler, Y. (2007). A systematic ecological model for adapting physical activities: theoretical foundations and practical examples. *Adapted physical activity quarterly*, 24(4), 287-304. doi: 10.1123/apaq.24.4.287
- Iedynak, G. A. (2003). Rukhova perevaha u pedahohichnomu upravlinni fizkul□turnoyu diyal□nistyu ditey shkil□noho viku z naslidkamy tserebral□noho paralichu [Motor mobility in pedagogical management of physical activity of school-age children with the consequences of cerebral palsy]. *Pedagogics, medical-biological problems of physical training and sport*, 9, 9-16.
- Iedynak, G. A. (2005a). Vikova dynamika deyaknykh pokaznykh fizychnoho stanu uchenyts□ z obmezhenymy funktsiyamy v umovakh tradytsiyno orhanizovanoyi fizkul□turnoyi diyal□nosti [The age dynamics of

- some indicators of physical condition of students with limited functions in the conditions of traditionally organized physical activity]. *Young sports science of Ukraine*, 9(2), 161-166.
- Iedynak, G. A. (2005b). Vikova dynamika deyakykh pokaznykiv fizychnoho stanu khloptsiv z obmezhenymi funktsiyamy v umovakh tradytsiyno orhanizovanoyi fizkul'noho turnoyi diyal'nosti [The age dynamics of some indicators of the physical condition of boys with limited functions in conditions of traditionally organized physical activity]. *Pedagogics, psychology, medical-biological problems of physical training and sport*, 3, 11-18.
- Iedynak, G. A., Mytskan, B. M., Galamanjuk, L. L. (2011). Teoretyko-metodychni osnovy rukhovoyi diyal'nosti ditey z tserebral'nym paralichem u fizychnomu vykhovanni [Theoretical and methodical foundations of motor activity of children with cerebral palsy in physical education]. *Newsletter of Precarpathian University. Physical culture*, 13, 53-62.
- Karampatsos, G., Terzis, G., Polychroniou, C., Georgiadis, G. (2013). Acute effects of jumping and sprinting on hammer throwing performance. *Journal of Physical Education and Sport*, 13(1), 3-5. doi: 10.7752/jpes.2013.01001
- Kitsios, A., Domoutsoglou, A., Lazaridis, S., Zaggelidis, G. (2009). The effect of a 12-week physiotherapy program with respiratory exercises on the vital capacity and forced vital capacity in adult males and females with cerebral palsy. *Journal of Physical Education and Sport*, 9(3), 1-6.
- Makarowski, R. (2013). The stimulating and instrumental risk questionnaire – motivation in sport. *Journal of Physical Education and Sport*, 13(2), 135-139. doi: 10.7752/jpes.2013.02022
- Martin, J. J. (2006). Psychosocial aspects of youth disability sport. *Adapted physical activity quarterly*, 23(1), 65-77. doi.org/10.1123/apaq.23.1.65
- Mihailescu, L. (2008). Contributions concerning the anaerobic capacity optimization in 400 m runners. *Journal of Physical Education and Sport*, 8(3), 18-25.
- Nemček, D. (2016). Quality of life of people with disabilities: Differences in satisfaction with indicators and domains between active and inactive individuals. *Physical Activity Review*, 4, 62-71. doi: http://dx.doi.org/10.16926/par.2016.04.08
- Platonov, V. N. (2013). *Periodizatsiya sportivnoy trenirovki. Obshchaya teoriya i yeye prakticheskoye primeneniye* [Periodization of sports training. General theory and its practical application]. Kyiv: Olympic literature.
- Priego Quesada, J. I., Lucas-Cuevas, A.G., Llana-Belloch, S., Pérez-Soriano, P. (2014). Effects of exercise in people with cerebral palsy. *Journal of Physical Education and Sport*, 14(1), 36-41. doi: 10.7752/jpes.2014.01006
- Raalte, J. L. V., Andersen, M. B. (2007). When sport psychology consulting is a means to an end(ing): roles and agendas when helping athletes leave their sports. *The sport psychologist*, 21(2), 227-242. doi: 10.1123/tsp.21.2.227
- Ray, J. J. (1982). *Self-report measures of achievement motivation: a catalog* (Eric publication number ED 237523).
- Rintaugu, E. G., Ngetich, E. D. K. (2012). Motivational gender differences in sport and exercise participation among university sport science students. *Journal of Physical Education and Sport*, 12(2), 180-187. doi: 10.7752/jpes.2012.02028
- Sherrill, C., Rainbolt, W. (1988). Self-actualization profiles of male able-bodied and elite cerebral palsied athletes. *Adapted physical activity quarterly*, 5 (2), 108-119. doi.org/10.1123/apaq.5.2.108
- Sherrill, C. (2004). *Adapted physical education, recreation, and sport: cross disciplinary and lifespan*, 6th ed. Boston: McGraw Higher Education.
- Silva, J., Weinberg, R. (1984). *Psychological foundations in sport and exercise*. Champaign: Human Kinetics.
- Stanley, D. M., Cumming, J., Standage, M., & Duda, J. L. (2012). Images of exercising: Exploring the links between exercise imagery use, autonomous and controlled motivation to exercise, and exercise intention and behavior. *Psychology of Sport & Exercise*, 13(2), 133-141. doi: 10.1016/j.psychsport.2011.10.002
- Training and Coaching the Paralympic Athlete* / edited Yves C. Vanlandewijck, Walter R. Thompson. (2017). John Wiley & Sons.
- Wilmore, J. H., Costill, D. L., Kenney, L. W. (2012). *Physiology of sports and exercise*, 5th ed. Champaign, IL: Human Kinetics.
- Winnick, J. P. (2004). *Adapted physical education and sport*. Champaign, IL: Human Kinetics.