

SPORTS PRACTICE AS THERAPEUTIC METHOD IN PHYSICAL REHABILITATION PROGRAMS FOR CHILDREN WITH SPECIAL EDUCATION NEEDS

BAIAS Maria-Sofia^{1,2,*}, SANDOR Iosif^{1,*}

*Received 2022 October 07; Revised 2022 November 21; Accepted 2022 December 05;
Available online 2023 March 10; Available print 2023 March 30.*

©2022 Studia UBB Educatio Artis Gymnasticae. Published by Babeş-Bolyai University.



This work is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License

ABSTRACT. Our main concern consists in offering an optimal physical development rehabilitation program for children with special educational needs. The therapeutic programs we approach in special schools is based on the diversity of physiotherapy methods and playful physical activity. To increase pupil's interest in physiotherapy sessions and to make this therapy more pleasant for this children we introduced key elements from regular sport activities in their individual therapeutic intervention programs (e.g. basketball- played at a larger and lower positioned basket, football- played with a lighter ball in a small field, bocce- played with lightweight balls on a smaller field). These programs have been well received, no special needs child was yet to refuse playing any adapted sport for his condition. By introducing regular sports in the physiotherapy programs applied for the children in our school, we succeeded to forward socialization, team-work, improving gross and fine motor skills, developing high receptivity towards sports. In order to bring out the best out of their abilities, each and every child is given the opportunity and encouraged to compete in local sports competitions organized for children with special needs. There are connections between mental and physical wellness. Maintaining physical health can also support mental well-being. In this way, everyone can use athletics as a form of treatment. This review will go into great detail on the therapeutic benefits of sport for kids, including how it can help them individually achieve better physical and emotional results and facilitate social integration. For the diversity of the

¹ Faculty of Physical Education and Sports, Babeş-Bolyai University, Cluj-Napoca, Romania

² Transilvania Baciú Secondary Special School, Cluj, Romania

* Corresponding authors: maria.baias@ubbcluj.ro, ORCID ID: <https://orcid.org/0000-0003-2619-8118>; iosif.sandor@ubbcluj.ro, ORCID ID: <https://orcid.org/0000-0003-2677-4568>

therapeutic program and the healthy development of this children, as well as for the increase of their quality of life, it is necessary to integrate mainstream sports in the curriculum of special schools, as long as they are adapted to the needs of children with disabilities.

Key words: *sports practice, physiotherapy, special education needs, methods*

Sport practice, seen from the perspective of therapeutic applicability, has several dimensions in terms of its impact on people’s health by increasing physical, mental and social well-being.

According to Australian Physical Literacy Framework in 2019 (Scott et al., 2021) sports practice can be organized in four areas, each of which consists of key elements contributing to the development of physical culture (Almond & Whitehead, 2012): physical, psychological, social and cognitive (Figure 1). These four elements are interconnected and can be used in a variety of contexts and tasks. When engaging in activities that will support the growth or maintenance of physical literacy, a person will need to be aware of which components are pertinent to their personal development. Australian Physical Literacy Framework consist in the interrelation of **physical elements, psychological, social** and **cognitive**. It connects the skills and fitness of a person with the attitudes and the emotion that a person has regarding movement or sports practice that makes him interact with others.

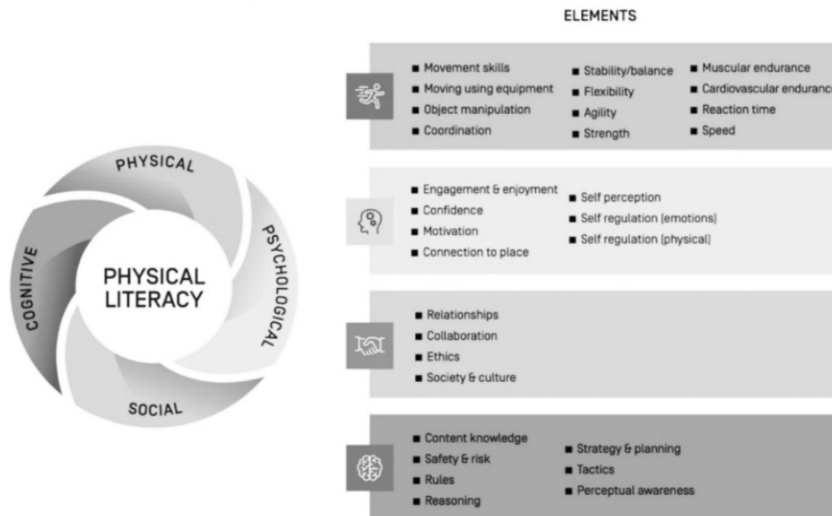


Figure 1. *Australian Physical Literacy Framework*

Physical literacy, according to Almond and Whitehead (2012), is a fundamental and important human skill that can be characterized as an attitude acquired by human individuals and including motivation, confidence, physical skill, knowledge, and understanding that establish intentional physical activity as an integrated part of their lifestyle. Whitehead (2012) uses the following qualities—adaptability, distinctiveness, and applicability—to characterize the basic and significant components of physical education. A physically educated person values and accepts responsibility for maintaining lifelong goal-oriented physical activity; preparation is indicated by the joy of being active, which is at the core of the concept (Shearer et al., 2018).

Sports practice, a social integration method for children with special needs

Through specific methods and means, physical education and sport practice provide an accessible educational environment with a strong formative and educational impact on people with disabilities (Albrecht et al., 2019).

In recent years, physical education and adapted sports have established themselves as sub-systems with specific objectives for different types of disabilities. Adapted motor structures, specific rules, modified material and organizational resources make it easier for these people to express themselves according to their own abilities and capacities. On the other hand, in this way, therapeutic-compensatory and developmental effects are possible, which allow the creation of a new self-image, favorable to social integration (Rapp & Corral-Granados, 2021).

Modern physical education and adapted sport programs promotes inclusive education by including people with and without disabilities in joint activities (Winnick & Porretta, 2016a).

Sport aims to strengthen the body and leads to good physical fitness, providing opportunities for early physical development, improved spatial orientation and safe movement. Sports practice lead to increased fine and gross motor coordination, improved concentration, listening skills, self-esteem and confidence, playfulness, creativity, cooperation and communication skills with others.

Some children with severe learning difficulties have good motor skills, they can work independently. Others may need special assistance while playing sports. (Winnick & Porretta, 2016b; UK Parliament, 2006; Carey et al., 2009)

Sports activities must be different from those practiced by pupils in mainstream schools, so that the pupil with multiple disabilities is able to perform the movements required for the sport he/she wants to practice.

Thus, each pupil must be encouraged to participate to the maximum of his or her ability in physical education classes and to carry out activities as diversified as possible, such as games, gymnastics, dancing and swimming (O'Reilly, 2001).

All sports are based on motor skills and abilities. The difference of sports practice consists in the degree of difficulty that all sports require. For example, Entertainment and Sports Programming Network defined a list of degree of sports practice difficulties - endurance, strength, power, speed, flexibility, nerve, durability, hand-eye coordination and analytic aptitude (Caple, 2012).

The complexity of physiotherapy practice in rehabilitation programs for children with special needs requires a high level of knowledge of the deficiencies and a precise assessment of the progression of students' results (Afxonidis et al., 2022). In this article we will present the importance of using sport-based qualitative techniques in physiotherapy.

Sports practice by children with special needs

The play patterns and skills of children with disabilities are often shown to be lower in development, disorganized, and less diversified than those of their non-disabled colleagues. Fewell & Kaminski, 1988; Harrison & Kielhofner, 1986; Howard, 1996; Linder, 1993; Restall & Magill-Evans, 1994; Bundy, 1989; Desha, Ziviani, & Rodger, 2003). Their capacity to play may be restricted by traits or obstacles related to their impairment (Swinth & Tanta 2008).

Barriers to the development of play behaviours in children with disabilities can occur in several ways: excessive caregiver dependence; physical, psychological or sensory limitations; environmental restrictions; or reduced social interactions (Missiuna & Pollock, 1991; Royeen, 1997). These barriers to engagement in play activities can result in secondary disabilities such as increased dependency, diminished imagination, poor social skills, and lack of motivation (Missiuna & Pollock, 1991).

Learned helper dependence is a secondary developmental disadvantage that can have an impact on a kid with disabilities' social relationships and functioning capabilities. The perception that a person cannot exert control over the events taking place as a result of interactions with the environment is known as acquired helplessness (Gargiulo & O'Sullivan, 1986; Wen, 2020). Motivational, cognitive and emotional deficits occur when children feel they have no control over the performance of their own motor activities. Low self-esteem could develop, which would have a negative impact on how they behave and function. They typically exhibit a lack of assertiveness and an incapacity to react to the activities around them. To prevent secondary impairments brought on by a lack of

play, educational interventions are required in these circumstances to assist children in overcoming components of their physical and environmental disabilities that restrict social inclusion in children's play (Missiuna & Pollock, 1991).

Researches has shown that children with disabilities can be taught movement skills that will be generalized to all movement activities (Goldstein & Cisar, 1992; Lifter et al., 1993; Le Goff, 2004; Rogers, 2000). Such data provide support for instructional programs and goals that address the development of play skills. In this way, including play activities in the curriculum for all students is a realistic and necessary goal of curriculum planning.

In order to increase children's physical activity and the number of rehabilitation activity sessions, it is important to implement an individual physical training program for children with special needs based on therapeutic sports.

Balance skills must be developed during this time period as a foundation for future movement skills and competences in order to support the early development of coordination abilities to support the preparation of children with special needs for the sports rehabilitation phase. The degree of development of balance abilities affects the quality of several special activities.

It has been found that the effectiveness of specially designed exercises for particular sports is influenced by children's training levels and the movement abilities taught in physical education programs for kids with special needs (Akulovich, 2021).

Adapted physical education and physiotherapy consist of a number of sports-related exercises, programs, and activities that have been adapted to be appropriate for those with disabilities. The goals of the disabled children's physiotherapy are based on the fundamental physical education curriculum. Simply taking part in adaptive sports is insufficient; it's also critical to improve the self-efficacy of kids with disabilities, change the way their parents and teachers view the sport, adapt the equipment, and improve the school's physical infrastructure. In this case, social and personal factors, the wrong equipment, and insufficient facilities may make it difficult for a child with special needs to participate in physical education activities (Wang, 2019). Some centers for integrated rehabilitation see sports practice activities and adapted physical education as supplements to physiotherapy rather than as an essential component of the treatments (Standal et al., 2018). Curriculums could encourage social inclusion and autonomy in special education settings (Al-Zoubi, & Bani Abdel Rahman, 2017). Sports participation has a positive effect on the development of the physical, functional, and motor efficacy of every body part because physical sports activities are intended to increase the physical, motor, functional, psychological, social, and mental abilities of children with special education needs (SEN). This must lead to the organization of sporting events for SEN

students. The health of a person's body organs is typically associated with how active they are. The range of physical and sporting activities largely aids individuals in improving their physical fitness and reducing their risk of illness (Sayyid et al., 2020). Sports activities have importance since they are intended to help people develop their talents and are also thought of as a type of clinical and rehabilitative therapy that enables people to integrate into society. Adapted sports and physical activities help SEN children's motor and functional skills since exercise is correlated to heart rate, blood pressure, bioactivity, muscle strength, power, and response time (Abdel-Hussein, 2009). Because the majority of SEN children have disabilities, physical exercises develop them physically, psychologically, and socially; specific physical education programs in schools improve kids' social and motor skills (Shaheen, Al Saadi, & Al-Hadabi, 2019).

In our special school, a school that has an educational program adapted for children with severe motor and physical disabilities, the main concern consists in offering a good physical development for pupils dealing with special needs, in particular motor disabilities, by introducing key elements from regular sports activities in their personalized intervention programs, primarily adapted to their needs.

These programs have been well received by our children, no special needs child was yet to refuse playing the specially adapted sport for his condition. Top favorite activities have been the bocce game, bowling, football and table tennis amongst the oldest.

Sports games are adapted for groups of children following certain criteria: depending on the deficiencies children are differentiated in groups making up the teams for whom have the same kind of need; children who use wheelchairs prefer sports like: bowling, bocce, table, basketball. By age: the little ones prefer sports entertainment, less aggressive: gymnastics, athletics, bowling, and the big ones prefer individual sports with a competitive character - chess and backgammon, or team games: football and basketball. Children who agree each other form the teams for a good flow of the game. Preferences by gender: girls prefer sports like athletics, gymnastics, dance, and boys prefer sports balls: football, tennis, table tennis, bowling and bocce.

Therapeutic effects pursued in the mass sports adapted for children with special needs

In the Rehabilitation programs of gross and fine motor and during physical education classes of pupils with SEN, we are using elements from motor games and sports adapted to each student and groups to diversify motions, stimulate

teamwork, and increase self-esteem, motor rehabilitation for independence and functionality. In preventing accidents we have changed the rules of game play, adapted the play spaces and the necessary materials.

Football and ball games. Football is a broad-spectrum therapy against lifestyle disorders and the most popular sport in the world, providing much more than just amusement (Milanović et al., 2018).

Scientists have concluded that football training is an intense and diverse training method that includes endurance, aerobic high-intensity interval training, and strength training for participants of all ages and ability levels (Oja et al., 2015; Milanovi et al., 2015). Football can therefore be described as an all-in-one sort of training having good and simultaneous effects on cardiovascular, metabolic, and musculoskeletal fitness for the whole population (Krustrup et al., 2010; Krustrup, Helge & Hansen, 2018).

In order to be applied as a therapeutic method for our SEN pupils, game rules are changed the way of progress is simplified. Football is practiced on a much smaller field and played with a lighter ball.

Standing balance is educated and by passing and stopping the ball. Education of coordination by the kick of ball, by hitting lateral and front of ball and driving the ball through pole trailers or by passing between obstacles.

Spatial orientation – developing this capacity is made by applying the simplified scheme of defense and attack tactics (long pass, stopping, hitting, and displacement between pole trailers), pass in two exchanging places, and pass with left – right leg and pass in three with shift.

Basketball. Repeated motions in basketball might cause musculoskeletal abnormalities.

It's not always the case that playing basketball will especially overload some energy systems or actions and promote strength, vertical leap height, and fitness adaptability.

When creating a therapeutic program that uses basketball as a therapeutic tool, it is important to consider the fitness elements that are utilized. Then, it is necessary to evaluate each player's fitness in the following areas: speed endurance since basketball involves sporadic, high-intensity running and direction change (Ben Abdelkrim, 2007; McInnes et al., 1995; Strumbelj et al., 2014); speed and agility (Conte et al., 2015). Basketball speed and agility drills should emphasize maximum sprint attempts over maximum distances, strength and power, core strength, and injury prevention (Hoffman et al., 1996). (Puente et al., 2016; Hertel et al., 2007). These factors contribute to the prevalence of ligament injuries and knee deformities. There is evidence to support the requirement for an

efficient preseason injury prevention training program (Kofotolis & Kellis, 2007). Basketball knee and ankle injuries can be avoided with the help of a competent program that trains dynamic core stability, proper single- and double-leg landing mechanics, and good muscular force and capacity.

If played at a larger and lower positioned basket, grasping and shoulder joint mobility is developed through catching and throwing in two shifting place, huge and shift. The development of coordination in walking and ocular-motor is educated by throwing the ball on the basketball hoop from different positions with one or two hands. Balance development is made by throwing the ball from an inclined or unstable surface.

Bowling and bocce are played with lightweight balls made from different materials to increase the possibility of easy playing for these children. It develops spatial orientation, accuracy and coordination.

Table tennis, tennis, badminton are played with balloons or sponge balls without a net; table tennis game is done with appropriate modifications of the rules of children with SEN. This sports improve range of movement in joints of the arms, rehabilitation spine alignment, the development of spatial orientation, speed of reaction and reflexes, coordination and skill development, capacity development of effort development of volition qualities: attention, concentration, developing team spirit, fellowship, friendship and fun.

Basic Gymnastics develops of correct posture and body alignment and balance, improves motor skills: strength, speed, strength, skill and aesthetic sense: exercises with various portable devices, developes general mobility: flexibility, extension, rotation, running, rolling, climbing.

Dancing improves motor skills aesthetic sense. Learning and applying dance steps in made on background music (step added, changed, jump, cross, simple jumping on one foot and two).

Athletics- for the rehabilitation of our children we use basic exercises and some elements from school of walking and running. It educates gross motor skills: variety of walking and jumping, alternatives of running, catching and throwing.

In **chess and backgammon** are used larger pieces or pawns to be handled with greater ease. Are being educated fine motor skills - grasping and coordination are deficient for spastic children. Attention and spatial orientation are stimulated within delimited action spaces.

Conclusions

By introducing regular sports in the programs we undertake with our children we succeeded to forward socialization, team-work, improving gross and fine motor skills, developing high receptivity towards sports. In order to bring out the best out of their abilities, each and every child is given the opportunity and encouraged to compete in local sports competitions organized for children with special needs. We believe in the harmonious up growth of each and every child and stride to better the quality of their lives by introducing these adapted sports in the special school's curriculum.

REFERENCES

- Abdel-Hussein, Z. (2009). Impact of adapted physical activities on kinetic and functional characteristics of children with disabilities. *Journal of Physical Education Sciences*, 2(2), 193-227
- Albrecht, J., Elmose-Østerlund K., Klenk C. & Nagel, S. (2019). Sports clubs as a medium for integrating people with disabilities, *European Journal for Sport and Society*, 16:2, 88-110, DOI: 10.1080/16138171.2019.1607468
- Al-Zoubi, S., & Bani Abdel Rahman, M. (2017). Social empowerment of individuals with intellectual disabilities. *European Journal of Education Studies*, 3(1), 177-19
- Almond, L. & Whintehead, M. (2012). Physical Literacy: Clarifying the Napure of Concept. *Physical Education Matters*. 7(1) ISSN 1751-0988
- Afxonidis, G., Tsagkaris, C., Papazoglou, A.S, Moysidis, D.V., Tagarakis, G., Foroulis, C., & Anastasiadis, K. (2022) Gender equity, equitable access to multilevel prevention and environmental sustainability: less-known milestones in the history of cardiac rehabilitation. *Disability and Rehabilitation* 44:17, 4944-4945.
- Ben Abdelkrim, N., El Fazaa, S. & El Ati, J. (2007). Time-motion analysis and physiological data of elite under-19-year-old basketball players during competition. *British Journal of Sports Medicine*; 41(2):69-75.
- Bundy, A. C. (1989). A comparison of the play skills of normal boys and boys with sensory integrative dysfunction. *Occupational Therapy Journal of Research*, 9, 84-100
- Caple, J. (2012). Degree of Difficultiy Project. *Retrived from ESPN.com*
<https://www.espn.com/espn/page2/sportSkills?sort=endurance#grid>
- Carey, W.B, Crocker, A.C., Elias, E.R., Feldman, H.M, & Coleman, W.P (2009). Developmental-Behavioral Pediatrics E-Book, *Elsevier Health Sciences*, V4, 824
- Conte, D., Favero, T.G., Lupo, C., Francioni, F.M., Capranica, L., & Tessitore, A. (2015). Time-Motion Analysis of Italian Elite Women's Basketball Games: Individual and Team Analyses. *The Journal of Strength & Conditioning Research* 29(1):144-50.

- Crompton, E. (2016). Football therapy. *The Lancet Psychiatry*, 3(12), 1109
doi:10.1016/s2215-0366(16)30382-0
- Desha, L., Ziviani, J., & Rodger, S. (2003). Play preferences and behavior of preschool children with autistic spectrum disorder in the clinical environment. *Physical and Occupational Therapy in Pediatrics*, 23(1), 21-42.
- Fewell, R. R., & Kaminski, R. (1988). Play skills development and instruction for young children with handicaps. In S. L. Odom & M. B. Karnes (Eds.). *Early intervention for infants and children with handicaps: An empirical base* (pp. 145-158). Baltimore: Paul H. Brookes.
- Gargiulo, R. M., & O'Sullivan, P. S. (1986). Mildly mentally retarded and non-retarded children's learned helplessness. *American Journal of Mental Deficiency*, 91, 203-206
- Goldstein, H., & Cisar, C. L. (1992). Promoting interaction during sociodramatic play: Teaching scripts to typical preschoolers and classmates with disabilities. *Journal of Applied Behavior Analysis*, 25, 265-280
- Howard, L. (1996). A comparison of leisure-time activities between able-bodied children and children with physical disabilities. *British Journal of Occupational Therapy*, 59, 12.
- Jaarsma, E., Haslett, D., & Smith, B. (2019). Improving communication of information about physical activity opportunities for people with disabilities. *Adapted Physical Activity Quarterly*, 36(2), 185-201.
- Akulovich, K.D. (2021). Technology of Selection and Preparation of Children Aged 6-7 for the Stage of Sports Rehabilitation in Uzbekistan. *Annals of the Romanian Society for Cell Biology*, 5510-5529. Retrieved from <https://www.annalsofrscb.ro/index.php/journal/article/view/3119>
- Kofotolis, N. & Kellis, E. (2007). Ankle sprain injuries: a 2-year prospective cohort study in female Greek professional basketball players. *Journal of Athletic Training*, 42(3), 388-94.
- Krustrup, P., Aagaard P. & Nybo L. (2010). Recreational football as a health promoting activity: a topical review. *Scandinavian Journal of Medicine & Science in Sports*, 20 (Suppl 1),1-13
- Krustrup, P., Helge EW. & Hansen PR., (2018). Effects of recreational football on women's fitness and health: adaptations and mechanisms. *European Journal of Applied Physiology*, 118, 11-32
- Krustrup, P., & Krustrup, B. R. (2018). Football is medicine: it is time for patients to play! *British Journal of Sports Medicine*, *bjsports*. doi: 10.1136/bjsports-2018-099377
- LeGoff, D. B. (2004). Use of LEGO© as a therapeutic medium for improving social competence. *Journal of autism and developmental disorders*, 34(5), 557-571.
- Lifter, K., Sulzer-Azaroff, B., Anderson, S. R., & Cowdery, G. E. (1993). Teaching play activities to preschool children with disabilities: The importance of developmental considerations. *Journal of Early Intervention*, 17(2), 139-159
- Linder, T. W. (1993). Transdisciplinary play-based assessment. Baltimore: Paul H. Brookes.

- Restall, G., & Magill-Evans, J. (1994). Play and preschool children with autism. *American Journal of Occupational Therapy*, 48, 113-120
- McInnes, S.E., Carlson, J.S., Jones, C.J. & McKenna, M.J. (1995). The physiological load imposed on basketball players during competition. *Journal of Sports Sciences*, 13(5), 387-97
- Milanović, Z., Pantelić, S. & Čović, N. (2015). Is recreational soccer effective for improving VO₂max a systematic review and meta-analysis. *Sports Medicine*, 45, 1339-53
- Milanović, Z., Pantelić, S. & Čović, N. (2018). Broad-spectrum physical fitness benefits of recreational football: a systematic review and meta-analysis. *British Journal of Sports Medicine*. doi:10.1136/bjsports-2017-097885.
- Missiuna, C., & Pollock, N. (1991). Play deprivation in children with physical disabilities: The role of the occupational therapist in preventing secondary disability. *American Journal of Occupational Therapy*, 45, 882-888
- Oja, P., Titze, S. & Kokko, S. (2018). Health benefits of different sport disciplines for adults: systematic review of observational and intervention studies with meta-analysis. *British Journal of Sports Medicine*, 49, 434-40.,
- O'Reilly, N. (2001). Introduction to Coaching Athletes with a Disability; Hillary Commission, Wellington, New Zealand Retrieved from <https://resources.relabhs.org/>
- Puente, C., Abián-Vicén, J., & Del Coso, J. (2017). Physical and Physiological Demands of Experienced Male Basketball Players During a Competitive Game. *The Journal of Strength & Conditioning Research*, 31(4), 956-962. doi:10.1519/JSC.0000000000001577
- Rapp, A. C. & Corral-Granados, C. (2021). Understanding inclusive education – a theoretical contribution from system theory and the constructionist perspective, *International Journal of Inclusive Education*, doi:10.1080/13603116.2021.1946725
- Rogers, S. J. (2000). Interventions that facilitate socialization in children with autism. *Journal of Autism and Developmental Disorders*, 30, 339-409.
- Royeen, C. B. (1997). Play as occupation and as an indicator of health. In B. E. Chandler (Ed.), *The essence of play: A child's occupation* (pp. 1-14). Bethesda, MD: American Occupational Therapy Association
- Sayyd, S., Zainuddin, Z., Ghan, D., & Altowerqi, Z. (2020). Sports activities for undergraduate students in Saudi Arabia universities: A systematic literature review. *International Journal of Human Movement and Sports Sciences*, 8(1), 1-16
- Scott, J. J., Hill, S., Barwood, D., & Penney, D. (2021). Physical literacy and policy alignment in sport and education in Australia. *European Physical Education Review*, 27(2), 328-347. <https://doi.org/10.1177/1356336X20947434>
- Shaheen, M., Al Saadi, K., & Al-Hadabi, B. (2019). Effects of a program based on educational technology to improve attention, kinetic abilities, and social skills for Omani students with hearing impairment. *International Journal of Sport Science & Arts* (3), 56-8
- Shearer, C., Goss, H. R., Edwards, L. C., Keegan, R. J., Knowles, Z. R., Boddy, L. M., & Fowweather, L. (2018). How Is Physical Literacy Defined? A Contemporary Update. *Journal of Teaching in Physical Education*, 1-9. doi:10.1123/jtpe.2018-0136

- Special Educational Needs: Third Report of Session (2005) Great Britain: Parliament: House of Commons: Education and Skills Committee. (2006) (p91) Retrieved from <https://publications.parliament.uk/pa/cm200506/cmselect/cmeduski/478/478i.pdf>
- Standal, O., Nyquist, T., & Mong, H. (2018). Adapted physical activity professionals in rehabilitation: an explorative study in the Norwegian context. *Adapted Physical Activity Quarterly*, 35(4), 458–475.
- Swinth, Y., & Tanta, K. (2008). Play, Leisure, and Social Participation in Educational Settings. *Play in Occupational Therapy for Children*, 301–317. doi:10.1016/b978-032302954-4.10011-x
- Wang, L. (2019). Perspectives of students with special needs on inclusion in general physical education: A social-relational model of disability. *Adapted Physical Activity Quarterly*, 36(2), 242–263
- Wen, J. (2020). Do parents enjoy travelling with their young children? An application of learned helplessness theory. *Anatolia*, 31(3), 511–513. doi:10.1080/13032917.2020.1720757
- Whitehead, M. (2010). *Physical Literacy throughout the Lifecourse*. London and New York: Routledge, pp 12-14
- Winnick J.P., & Porretta D.L. (2016a). Adapted Physical Education and Sport, *Human Kinetics* (p XII)
- Winnick J.P., & Porretta D.L (2016b). Adapted Physical Education and Sport, *Human Kinetics* (p 169)