The Virginia Journal

VIRGINIA AHPERD

THE VIRGINIA ASSOCIATION FOR HEALTH, PHYSICAL EDUCATION, RECREATION, & DANCE

FALL 2023 Vol. 44, No.2

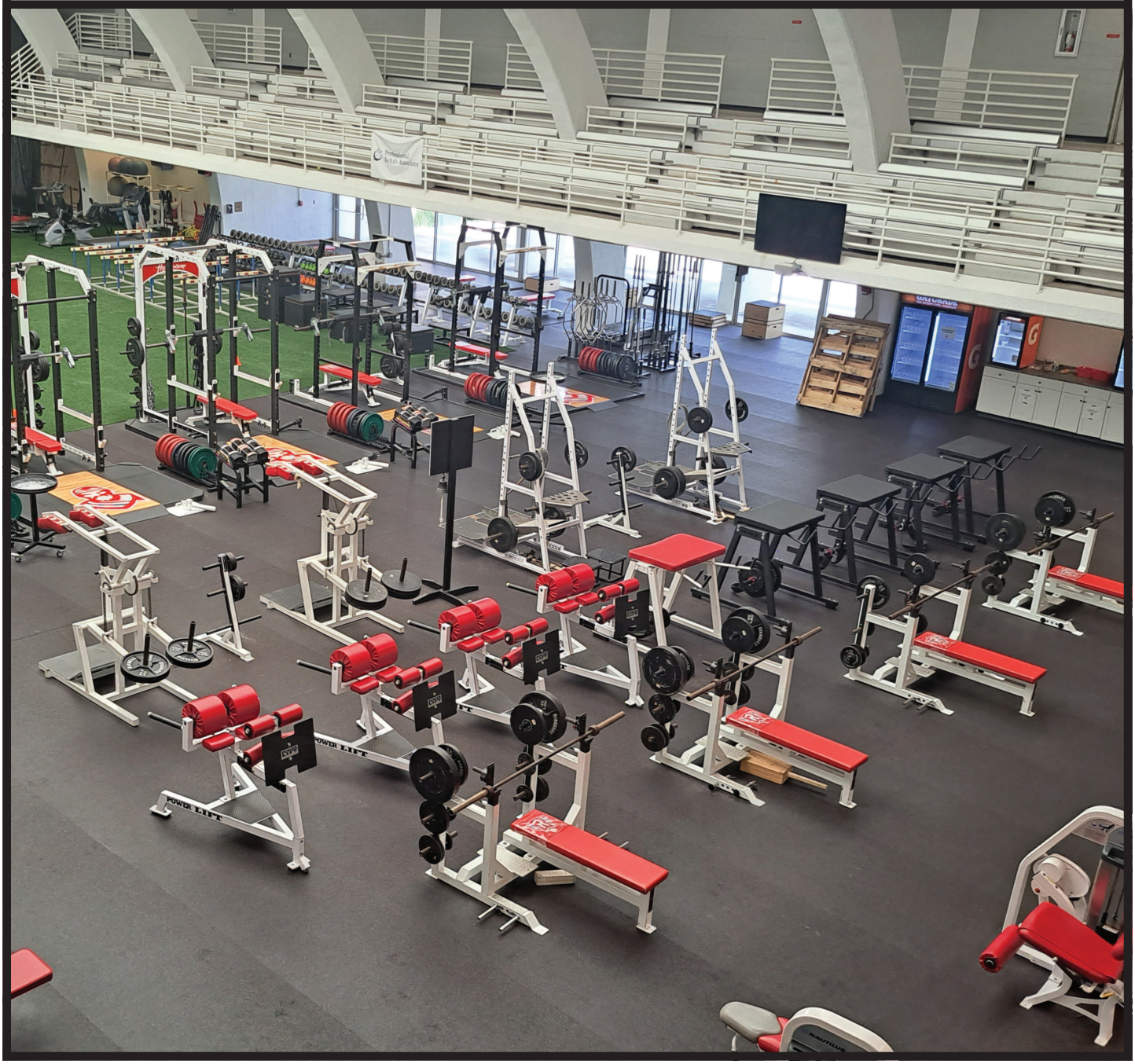

Photo Credit: Dr. Michael Moore, Radford University

Virginia AHPERD Members,

It is my pleasure to serve as the editor of The Virginia Journal (TVJ) and Communicator. Enclosed you will find the Fall 2023 issue. I hope to continue the successful publications of TVJ and Communicator.

However, the success of TVJ and the Communicator only go as far as the members and our submissions. I ask that you continue to submit the quality work you have in the past. Let the state, region and nation know the outstanding work we are doing in Virginia AHPERD. So, this is my continued call for manuscripts for the next issue of TVJ and news information for the Communicator. The TVJ and Communicator depend on the submissions from our exceptional professionals working in the field.

So please continue to e-mail me your manuscripts and news by January 15 and July 15 as a Word attachment for the two publications. Please follow the manuscript guidelines posted in each issue of TVJ. My contact information is below.

Sincerely,

Michael Moore, PhD, LAT, ATC
Radford University
Professor, HHP
Clinical Coordinator, ATP
mbmoore@radford.edu
540-831-6218

About Virgina AHPERD

Mission Statement

Virginia AHPERD is a professional association of educators that advocate quality programs in health, physical education, recreation, dance and sport. The association seeks to facilitate the professional growth and educational practices and legislation that will impact the profession.

Virginia AHPERD Values

- Excellence in teaching, research and educational practices in HPERD and related professions
- Positive efforts to promote our disciplines
- Professional integrity and high ethical standards
- Effective communication within and between members and related professionals
- An active and healthy lifestyle
- Embracing the role of special and diverse populations

Virginia AHPERD Priorities

Member Services
Communication
Marketing and Promotion
Education

Visit Virginia AHPERD's Web Site

www.virginiaahperd.org

Learn About:

Virginia AHPERD	Membership
Leadership	Publications
Divisions	Resources
Students	Links
Awards and Grants	Forms

Table of Contents

Volume 44, Number 2 **Fall 2023**

Mild Traumatic Brain Injuries and their Chronic Neurocognitive and Physiological Effects on the Body

Rachel Bird, BS, Radford University Graduate
Michael Moore, PhD, LAT, ATC, Professor, Health and Human Performance Department , Radford University

Mild traumatic brain injuries, or concussions, frequently occur in sports and have been in the headlines over the past few years (Musumeci et al., 2019). These traumas can occur in any field of athletics and to any athlete, no matter age, gender, height, weight, or position. The CDC estimates that sport and recreational related concussions have grown to about 1.6 to 3.8 million per year (Brain Injury Research Institute, n.d.), and high school and collegiate concussion rates are also on the rise (Covassin & Elbin, 2010). Since concussions seem to be so common in sporting events today, we may not take them as seriously as they really are. This is extremely dangerous as research studies and articles have found that the chronic effects of sport-related concussions spread far more extensively and last much longer than we once thought (Memmini et al., 2021; Lee et al., 2021; Kara et al., 2020 and Taylor et al., 2018). The long-lasting effects on both the neurocognitive and physical aspects of the body have been studied in an effort to better understand these traumatic injuries (Memmini et al., 2021, Lee et al., 2021 and Taylor et al., 2018), and to help spread awareness so that more people can be better equipped to handle them as they happen (Musumeci et al., 2019).

According to the Mayo Clinic, a traumatic brain injury typically results due to a hard blow or jolt to the head or body (Mayo Foundation for Medical Education and Research ,2021). They come with a wide variety of both cognitive and physical effects, such as headache, nausea, dizziness, drowsiness, blurred vision, sensitivity to light and sound, loss of consciousness, confusion, mood swings, and memory problems (Mayo Foundation for Medical Education and Research, 2021). Young adults from ages 15 to 24 are also most at risk for traumatic brain injuries, especially males (Mayo Foundation for Medical Education and Research, 2021). Typical treatment after a concussion is physical and mental rest for the first few days after the injury, which includes relative rest, or limiting activities that require thinking and mental concentration, then slowly increase daily activities as long as they don't trigger symptoms (Mayo Foundation for Medical Education and Research, 2020). As symptoms gradually improve and hopefully resolve, the athlete can return to play with the doctor's approval (Mayo Foundation for Medical Education and Research, 2020). The time it takes to recover ranges from a couple of weeks to several months (Kara et al., 2020) and is going to be slightly different for every patient and athlete, since every brain heals differently and at different rates (Kara et al., 2020). It's imperative that coaches, physicians, and teachers be patient and knowledgeable about not only the prognosis of mild traumatic brain injuries, but also understand the adverse effects that they could have on an individual.

"The neurocognitive domains most susceptible to the acute effects of concussion, include attention and concentration, cognitive processing speed/efficiency, learning and memory, working memory, executive function and verbal fluency" (Covassin & Elbin, 2010, p. 56). Most research conducted on college athletes reflects that most cognitive issues resolve within the first seven days following a concussion, however more than 10% of athletes were still showing cognitive impairments and dysfunctions after seven days post-injury (Covassin & Elbin, 2010). It is generally accepted that a history of concussion heightens the chance of another, even as high as three to six times as likely to sustain a second (Larkin, 2020; Covassin & Elbin, 2010; Brain Injury Research Institute, n.d.).

In a study determining the relationship between concussion history and neurocognitive performance and symptoms in college athletes, it was found that athletes with a history of concussion performed worse on verbal memory and reaction time on day five after the brain injury compared to athletes with no prior history (Covassin, et al., 2008). Likewise, a similar study concluded that concussions have a more persistent effect on cognitive function than originally thought, and interestingly, the age at which an athlete has their first concussion may be an important factor in determining long-term effects (Taylor et al., 2018). Researchers found that having a history of a concussion decreased global cognition (mental processes involved in the acquisition of knowledge, manipulation of information, and reasoning) and lowered test scores in all cognitive areas, such as verbal memory, visual memory, and impulse control (Taylor et al., 2018; Kiely, 2014). Also, a mild traumatic brain injury occurring in early childhood correlated with lower global cognition, visual memory, and motor visual scores (Taylor et al., 2018). Overall, it seems the majority of cognitive damage comes from the occurrence of more than one concussion, or concussion at an early age, but nonetheless, these injuries must be watched to monitor the health and ability of the individual.

The easier effects of mild traumatic brain injuries to observe are physical ones. Decreased motor function, movement patterns, and tissue damage are all very serious long-term complications following a concussion and haven't been very thoroughly researched until recently (Lee et al., 2021; Martini et al., 2011). One cross-sectional study conducted with 21 participants between 12 and 16 days after being released to return to play after a sport related concussion wanted to determine if there were biomechanical differences during a double jump limb landing between athletes who had been released to return to play, and healthy controls (Lee, et al., 2021). Using Motion Capture System and force plates, researchers found that the group of individuals with the previous sport related concussion demonstrated greater internal knee extension on their dominant and non-dominant legs (Lee et al., 2021). They also showed greater internal

varus moments on both limbs (Lee et al., 2021). On the other hand, the injured group displayed less knee flexion displacement on their dominant, but not their non-dominant leg (Lee et al., 2021). In conclusion, they found that athletes released to return to their sport after a sport related concussion land in greater knee valgus than healthy controls (Lee et al., 2021).

Similarly, when the gait of young adults was observed in individuals with and without a history of concussion, data analyses showed that the group with the history of concussion spent significantly more time in a double leg stance and had a slower gait velocity (Martini et al., 2011). There was also a negative correlation in the number of concussions and time spent in single-leg stance and a positive correlation between the number of concussions and time spent in double-leg stance (Martini et al., 2011). Therefore, the findings indicated that individuals with a history of concussion, especially multiple concussions, adopt a more conservative gait (Martini et al., 2011).

The findings of both studies could very possibly contribute to the fact that that children who had previously gotten a mild traumatic brain injury are close to four times more likely to sustain another one compared to others with no concussion history (Larkin, 2020). According to Dr. Jacqueline van Ierssel of Children's Hospital of Eastern Ontario Research Institute, "Clinician's should consider managing concussed children more conservatively than adults, as the increased risk of recurrent concussion is even more concerning given children's potentially longer recovery times and potential for adverse long-term consequences during a sensitive period of neurodevelopment growth" (van Ierssel, et al., 2021, p 669). There is evidence that clinical recovery occurs before physiological recovery, so it can be difficult to determine if children are vulnerable to a repeated concussion because they were allowed to return to play before they have fully recovered, or because of lingering issues with cognitive processing, neuromotor control, vestibular function, and visual stability (van Ierssel, et al., 2021).

There is an extent of expected motor function problems that come along after a mild-traumatic brain injury, however there are some more surprising systems of the body concussions can affect. One such system is the autonomic nervous system and cardiovascular functions (Memmini, et al., 2021). A study focusing on the long-term influence of concussion on cardio-autonomic function in adolescent hockey players wanted to assess the effect of concussion history during recovery from a period of submaximal exercise (Memmini et al., 2021). All players went through five minutes of resting heart rate variability assessment, or the variation of time between each heartbeat, followed by twenty minutes of aerobic exercise at 60% to 70% of their target maximum heart rate, and a nine-minute post-exercise heart rate variability assessment (Memmini et al., 2021). The control and concussed groups were compared and the results of the recovery trends indicated a history of two or more concussions may negatively affect cardio-autonomic recovery post-exercise (Memmini et al., 2021). Individuals with more than one previous concussion could be at an increased risk for long-term dysautonomia, which is a condition where the autonomic nervous system does not work properly (Memmini et al., 2021). Investigators hypothesized that cerebral functional disturbances may alter the normal cardio-autonomic function for months or even years after the concussion (Memmini et al., 2021). This is arguably one of the most dangerous effects of a mild traumatic brain injury can have on an individual since it could alter and damage the functioning of the autonomic nervous system, which is vital to survival.

There are several neurometabolic alterations visible in the body that occur due to mild traumatic brain injuries (De Beaumont et al., 2012). For example, *N*-acetylaspartate, which is a derivative of aspartic acid and is the second most concentrated molecule in the brain, is consistently diminished in concussed athletes as opposed to healthy athletes (De Beaumont et al., 2012). Other changes include diminished levels of both glutamate, which seems to normalize by 6 months post-injury, and myoinositol, which may be elevated in the chronic postinjury phase (De Beaumont et al., 2012). However, unlike many others studying the long-term effects of concussions, no specific studies have assessed long-term neurometabolic changes in athletes who have sustained one versus multiple concussions (De Beaumont et al., 2012).

The importance of the proper treatment and the significance of the long-term effects of these injuries can be seen in a study that worked with patients one-year after a mild traumatic brain injury. It investigated cognition, disability, and life satisfaction of patients that sought consultation (Stalnacke et al., 2007). Individuals filled out questionnaires about symptoms, disabilities, and life satisfaction, as well as underwent a neuropsychological evaluation (Stalnacke et al., 2007). Researchers found that the group who sought consultation, cognitive test scores were significantly lower than the control group (no history of a concussion) (Stalnacke et al., 2007). Likewise, the number of patients with one or more disability was much higher in the group with consultations, and the life satisfaction was much lower in the respective group (Stalnacke et al., 2007). With all of the above issues following these individuals for a year or longer, it is better understood why patients need consultation as part of the early treatment protocols after attaining a concussion.

In conclusion, data from mild traumatic brain injuries occurring from sports shows enduring, cumulative cognitive and motor system function alterations in both currently concussed and previously concussed athletes (De Beaumont et al., 2012). All of the studies and research discussed in this article about the adverse effects of concussions on all aspects of the body should not be overlooked or underestimated anymore. Hopefully, with more investigation into the prevention, signs/symptoms, and treatments of these physiological and neurocognitive issues, we can have a better understanding of the complexity of concussions and the treatment.

Citations

Brain injury research institute. (n.d.). What is a concussion? Retrieved December 1, 2023 from https://www.protectthebrain.org/Brain-Injury-Research/What-is-a-Concussion-.aspx

Covassin, T., & Elbin, R. (2010). The cognitive effects and decrements following concussion. *Open Access Journal of Sports Medicine, 1*, 55-61. doi:10.2147/oajsm.s6919

Covassin, T., Stearne, D., & Elbin, R. (2008). Concussion history and postconcussion neurocognitive performance and symptoms in collegiate athletes. *Journal of Athletic Training, 43*(2), 119-124. https://doi.org/10.4085/1062-6050-43.2.119

De Beaumont, L., Henry, L., & Gosselin, N. (2012). Long-term functional alterations in sports concussion. *Journal of Neurosurgery, 33*(6). doi:10.3171/2012.9.focus12278

Kara, S., Crosswell, H., Forch, K., Cavadino, A., McGeown, J., & Fulcher, M. (2020). Less than half of patients recover within 2 weeks of injury after a sports-related mild traumatic brain injury: A 2-Year prospective study. *Clinical Journal of Sport Medicine, 30*(2) 96-101. *DOI:* 10.1097/JSM.0000000000000811

Kiely, K. (2014). Cognitive Function. *Encyclopedia of Quality of Life and Well-Being Research*. https://doi.org/10.1007/978-94-007-0753-5_426

Larkin, M. (2020, November 7). *Previous Concussion Could Nearly Quadruple Risk of Another One in Young Athletes*. Medscape. https://www.medscape.com/viewarticle/940476.

Lee, B., Blueitt, D., Hannon, J., Goto, S., & Garrison, C. (2021). Movement patterns differ between athletes after sport-related concussion compared to healthy controls during jump landing task. *Journal of Athletic Training*. https://doi.org/10.4085/533-20

Martini, D., Sabin, M., DePesa, S., Leal, E., Negrete, T., Sosnoff, J., & Broglio, S. (2011). The chronic effects of concussion on gait. *Archives of Physical Medicine and Rehabilitation, 92*(4), 585-589. https://doi.org/10.1016/j.apmr.2010.11.029

Mayo Foundation for Medical Education and Research. (2021, February 4). *Traumatic brain injury*. Mayo Clinic. https://www.mayoclinic.org/diseases-conditions/traumatic-brain-injury/symptoms-causes/syc-20378557

Mayo Foundation for Medical Education and Research. (2020, February 22). *Concussion*. Mayo Clinic. https://www.mayoclinic.org/diseases-conditions/concussion/diagnosis-treatment/drc-20355600

Memmini, A., La Fountaine, M., Broglio, S., & Moore, R. (2021). Long-term influence of concussion on cardio-autonomic function in adolescent hockey players. *Journal of Athletic Training, 56*(2), 141-147. https://doi.org/10.4085/1062-6050-0578.19

Musumeci, G., Ravalli, S., Amorini, A. M., & Lazzario, G. (2019).Concussions in sports. *Journal of Functional Morphology Kinesiology, 4*(2), 37- 44. https://doi.org/10.3390/jfmk4020037

Stalnacke, B., Elgh, E., & Sojka, P. (2007). One-year follow-up of mild traumatic brain injury: Cognition, disability and life satisfaction of patients seeking consultation. *Journal of Rehabilitation Medicine, 39*(5)*,* 405-411.

Taylor, K., Kioumourtzoglou, M., Clover, J., Coull, B., Dennerlein, J., Bellinger, D., & Weisskopf, M. (2018). Concussion history and cognitive function in a large cohort of adolescent athletes. *The American Journal of Sports Medicine, 46*(13), 3262-3270. doi:10.1177/0363546518798801

van Ierssel, J., Osmond, M., Hamid,J., Sampson, M., & Zemek, R. (2021). What is the risk of recurrent concussion in children and adolescents aged 5–18 years? A systematic review and meta-analysis. The *British Journal of Sports Medicine, 55*, 663-669.

National Academy of Health and Physical Literacy
Advancing health and physical literacy

Fundraising Outside The Box

Kari Hampton, Associate Professor Longwood University HRK Department
Brett Baird, Health and Physical Education Teacher FUQUA School
Laure Donahue, Health and Physical Education Teacher Stafford County Public Schools
Devin Foster, Health and Physical Education Teacher Nottoway County Public Schools
Karlie Lafollette, Health and Physical Education Teacher Loudoun County Public Schools
Michaela Wescott, Health and Physical Education Teacher Virginia Beach City Public Schools

Introduction

Today, many schools turn to fundraising for supplemental funds to purchase resources and equipment, develop new programs, and provide for their students.Fundraisers can be intimidating because there are so many approaches, considerations and methods related to raising funds. This article will explore a few avenues to explore as well as things to keep in mind when setting up a successful fundraiser.

Troubles with fundraising

For a fundraiser to be successful all parties who benefit from the fundraiser to be involved include the staff, families and if applicable the board of directors (Barhyte, 2020). By including all parties they are more likely to be committed to the fundraisers success. Barhyte (2020) suggests that you need to develop a detailed plan that has data driven goals from start to finish. After you set your goals, you need to decide how much money or how many resources you hope to raise, taking into account time, resources, and planes to promote the fundraiser. The last step to make your fundraiser successful is to determine how you are going to measure your success and how you will share that with the community Fundraising can take a lot of time and money to be successful. Additional factors to keep in mind when planning a fundraiser include: setting clear goals, securing needed resources, tying the fundraiser to your organization's purpose and mission and including ways to publicize the event (Barhyte, 2020).

Federal and state funds

Aside from traditional fundraisers there are grants and funding opportunities through state and federal organizations. Popular sources include grants from the US Department of Education (ed.gov/programs-search/local-education-agencies). There are funds already available for health and physical education through the Every Student Succeeds Act (ESSA) Title IV. These funds can be used for curriculum, technology and classroom materials. These funds are divided out to school divisions and only need to be asked for to support health and physical education programs.

Activity based fundraiser

Activity based fundraising is a great way to get the members of your local community involved. These interactive events can encourage members of the community to participate in activities they may not have considered. Activity based fundraisers create a positive impact on the school and the community and can be enjoyed by people of all ages. Utilizing activities can make the event more enjoyable. Below are a short list of some activity based fundraising ideas.

Example	What this will look like
Dance marathon	This event challenges participants to dance for as long as they can. Participants collect pledges for how long they can dance for or for a flat rate.
Polar plunge	Students collect pledges from friends, family members, and community members as they prepare to plunge into ice cold water. This fundraiser should be done in the winter, unless living in a cold environment.
Penny wars	Establish teams (by grade, subject, classroom, etc.) each team will get a jar and is encouraged to bring in coins, which are positive points for their team, or dollars, which are negative points for the other teams. At the end of the competition the winning team gets a reward.
Golf outing	People who wish to attend will sign up in foursomes. The school can work with a local golf course. Upon completing the round of golf there will be prizes for a variety of challenges such as longest drive, hole in one, and best score.
Trivia night	Schools can host a trivia night that can be run by a trivia company. Groups can sign up and purchase a table for the trivia night. Teaming up with a restaurant while splitting profits can also help raise money for both parties.
5K or bike races	These are a classic, but schools can spice things up by hosting a breakfast after completion of the race. Schools can also obtain sponsorships from local businesses and even create team challenges for who can raise the most money.
Color Run	Much like the 5K run but with the addition of color powder packets
Kids heart challenge	A whole body focused fundraising program that raises funds for the American Heart Association as well as for the school.

Community based

When fundraising on a large scale, the best way to achieve high levels of success is to obtain buy in from the school community. Tapping into your community's resources is a great way to get the people in your community invested in your program and interested in what you and your local school system are doing with the students of your county or city. If you are looking to fund your physical education program or any program that will benefit your school population by appealing to your community, try reaching out to local businesses and asking them to commit to being community partners as a financial supporter for your program. Asking community partners to be donors for your physical education program allows them to have a stake in student learning and development (Little, 2011).

Some large-scale fundraising ideas that have been found to be successful are silent auctions, raffle tickets, and walk/run-a-thons. These three options require donations from community members, businesses, and partners. Donations can come in the form of monetary measures, goods, and/or services. These are a great way to meet and introduce community members to the people involved with the school and to have a glimpse into what their money will go towards. Some smaller scale fundraising ideas that require less preparation are bake sales, car washes, and a parent's night out event. With these options, the school itself is providing a service or goods to raise money for a program. These ideas may not produce as much profit, but the community outreach is at the forefront. There are also some online options for fundraising. Using websites like gofundme.com, adoptaclassroom.org, and donorschoose.org are also ways to build an online community for your classroom or program. These options reach out to an online community but require some proof that you are spending funds in the proposed way. You must show that your students and program are benefiting from the funds. This option has less preparation and has the potential to be a one-time or an ongoing funding option for a unit, specific set of equipment, or etc.

If you are struggling to find a fundraising idea that fits your program, search the internet for some great ideas that could be perfect you and your program. Fundraising.com is a great place to start to generate fundraising ideas as mentioned in previous paragraphs. These ideas are simple and could be used for any program, not just physical education. Shapeamerica.org has a Social Emotional Learning based fundraiser designed to raise funds for the health and physical education program. The Health. Moves. Minds program can also raise funds for an outside organization.

Sponsorships

When it comes to fundraising, finding sponsors can be incredibly beneficial. Having the support of sponsors can help to take your fundraiser to the next level. Before going to look for sponsors, it is important to first figure out your fundraising goal and what you would need from your sponsors in order to reach that goal. Once you have your fundraising goal and event figured out it is time to start reaching out to potential sponsors. Start your search for sponsors in your school's community, chances are you have some parents that own local businesses and would love to help out. A schools newsletter or post on social media can be a good way to solicit program or school sponsors. Local businesses are also good options for potential sponsors. A local grocery store may be willing to donate waters and snacks for your event or your hometown dentist may be willing to donate toothbrushes for a dental health unit--you never know until you ask.

When reaching out to these potential sponsors, it is important to tell them exactly what their money or time is going towards. Consider putting together a pamphlet or some sort of advertisement for your event that will give businesses information on what they would be sponsoring and how it is going to be used and/or how it is going to benefit your students. Be sure to also discuss the various ways they could help with your event. Donating money isn't the only way businesses can help. Let's say for instance that your fundraiser is a fitness night, a local gym could donate their time by leading workouts during the event or they could donate some gym equipment to be used at your event. Sponsorship comes in various forms, so make it known that you are open to any and all help. It is important to reach out to your potential sponsors early! Make requests early giving potential sponsors time to consider the information you've given them and think of the ways they could help.

Sponsors can benefit your school by opening the door to more possibilities. With the money or resources that sponsors offer, you are able to do more at your event. Getting sponsors also helps to reduce the out-of-pocket expenses that your school will encounter while planning and implementing a fundraising event. However, schools aren't the only ones that benefit from sponsorships. When businesses become sponsors for school events, they receive some benefits as well. The exposure the school gives the sponsors during an event is great for them. Businesses are able to get their name out there and even meet and build relationships with community members. This exposure can bring the sponsors new business as well as build their reputation within the community.

Finally, it is important to not only thank your sponsors at your event but also send out thank you cards in the days following your event. Acknowledging and thanking your sponsors during your event could be done by having their business logo on any t-shirts or handouts at the event or by simply taking time at the opening of your event to recognize each business and the part they played in helping your event happen.

Buy in by school and community

The need to have the school and community buy in to participation in a school initiative is critical to the success of the initiative. Getting the school to buy in will ensure that the staff members are informed and involved in their roles in the fundraiser. When the community buys in to the school initiative, they can bring outside resources to aid the fundraiser. The biggest stakeholders in the school fundraiser are the school and the community it serves. Getting these stakeholders to buy in to the school fundraiser will increase the level of ownership by both parties, which benefits the school. Getting the school members to buy in to the school fundraiser is vital because the fundraiser will be delivered through the vessel that is the school. It is important for the school staff to be taught about the fundraiser because they will be the ones on the front line delivering the services. The school staff will also need to be taught their role in rolling out the fundraiser. When all parts

of the team know what they are supposed to do, they can be better prepared to do what is needed for the success of the fundraiser. When this is done correctly, the staff will be eager to buy in because they know what they need to contribute to the fundraiser.

Getting the community to buy in to the school fundraiser is essential because the initiative is geared towards them. The community will be a key part in development of the fundraiser because they can offer their unique viewpoint to what is needed to improve the program or school situation. The community will also be more willing to buy in if they are educated on the topic of the fundraiser. To increase the value of the fundraiser in the community, the developers of the fundraiser should give the community a role and a position in the fundraiser. By involving the community in the fundraiser, they will become part of the movement bringing the desirable change.

When these two stakeholders are educated in the workings of the fundraiser, know their role, and how to play that role, their sense of ownership increases in the school fundraiser. Being a part of the decision-making process and implementation of the fundraiser will allow both the community and school to build a deeper connection with the fundraiser. Another way that these stakeholders could increase their ownership would be to use the school staff and community to evaluate the initiative when it is going on and after it has finished. This would allow the developer of the initiative to make the adjustments needed to better serve the target population. These two stakeholders hold a lot of power to influence the school initiative's development, delivery approach, and maintenance.

Conclusion

Fundraising can be a lot of work but when your energy is directed in meaningful ways the outcomes can be program and school changing. Fundraising can take many different forms so don't be afraid to try something a little different and to most of all have fun.

References

Barhyte, D. M. (2020). Stress-less fundraising. http://www.childcareexchange.com/article/stress-less-fundraising/5025244/

Little, P. (2011). School-community learning partnerships: Essential to expand learning success. https://www.expandinglearning.org/expandingminds/article/school-community-learning-partnerships-essential-expanded-learning-success

How Physical Education Teachers Can Assist 2nd Grade Teachers in Mathematics

Karina Naccarato, Undergraduate Student, College of Education, Health, and Human Services, Longwood University
Matthew D. Lucas, Professor of Physical and Health Education, College of Education, Health, and Human Services, Longwood University

Physical education has seemingly been a time when elementary students leave the classroom and "go do PE". Lack of collaboration between physical education teachers and other teachers often is the norm. This is dysfunctional in many aspects such as in behavior management and instruction. But all individuals learn differently. Gardner (1983) divided these learning styles or "intelligences" eight items.

Gardner (1983) developed the following intelligences. Simple summarizes derived from Cherry (2012) for each intelligence include the following:

- Bodily-Kinesthetic Intelligence – the ability to control one's movement
- Interpersonal – the ability to comfortably interact with others in an appropriate manner
- Intrapersonal – having a comfortable self-perception in which others would agree
- Logical-Mathematical – the ability to effectively perform skills with numbers
- Linguistic – the ability to use language in a variety of manners such as speech and writing
- Naturalistic – the ability to understand and explain items in nature (science)
- Spatial – the ability to create a graphics likeness of information
- Musical – ability to use musical elements of pitch, rhythm, and timbre

Gardner's Theory of Multiple Intelligence (Gardner, 1983) as stated in Brualdi (1996) "used biological as well as cultural research, [he] formulated a list of seven intelligences. This new outlook on intelligence differ[ed] greatly from the traditional view which usually recognizes only two intelligences, verbal and computational." (Office of Educational Research and Improvement, U.S. Department of Education, 1996, p. 31).

Elementary physical education teachers focus on Bodily Kinesthetic Intelligence as they work on locomotor, non-locomotor, and manipulate skills. They are summarized below:

- Locomotor – moving the body from one location to another (walking, running, skipping, crawling, galloping, sliding, hopping (one foot), jumping horizontally (two feet), etc.
- Non-Locomotor – moving the body while not moving the body from one place to another (twisting, turning, raising, collapsing, stretching, etc.)
- Manipulative – moving the body to manipulate objects (e.g. throwing, catching, kicking, striking (with hand or bat), etc.)

As noted, physical education teachers focus on the "Bodily Kinesthetic" skills above, however other subjects can be taught using this method, which may have a greater benefit for many students (Kovar, 2012).

Here is a summary of the Virginia Standards of Learning for math in second grade:

- Number Sense: The student will read, write, and identify place value in three-digit numbers with and without using models. Students should formulate a number sense and order by skip-counting by twos, fives, and tens up to 120, comparing whole numbers, and writing out fractions.
- Computation and Estimation: The student will solve single step practical problems with whole numbers up to 20 as well as fluency in addition and subtraction problems. The student will determine sums and differences using various methods. The student will demonstrate sequencing through creating and solving single and two-step practical problem solving.
- Measurement Geometry: The student will demonstrate their knowledge on the value of money such as pennies, nickels, dimes, and quarters as well as the dollar symbol. Identify degrees in temperature and estimate measurements by inches and centimeters. Show competency in telling time by analog and digital clocks.
- Probability: The student will identify unlikely, probable, certain, and impossible probability looks like. Students will solve and use the less than, greater than, and equal signs. The student will create and interpret bar graphs and pictographs.
- Patterns, Functions, and Algebra: The student will identify, describe, create, extend and transfer patterns found in objects, pictures, and numbers using skip-counting stories. Identify repeating patterns, growing patterns, and even/odd number recognition. The student will demonstrate their understanding of balanced equations through signs of addition, subtraction, and equal problem solving (Virginia Standards of Learning, 2022)

Basic recommendations, as noted by the authors, include using measurement and score keeping with as many class activities as possible. Basic mathematical skills can then be practiced as part of a regular lesson. More specific recommendations for five items of the Virginia Standards of Learning for the 2nd grade are below.

The table addresses a locomotor, non-locomotor, and manipulative math activities for 2nd grade students to perform in the classroom. Each standard is met with an accompanying exercise

Standard of Learning Category	Locomotor	Non-Locomotor	Manipulative
Number and Number Sense	Students will demonstrate hopping and counting by twos for each hop	Students will perform modified push-ups and counting by fives	Students will perform jump roping and counting by tens
Computation and Estimation	A group of two students adding the number of skips and then comparing the difference with another group of two using subtraction	A group of two students performing sit-ups in a minute and then adding their total number together to find their group score	A group of two students will perform the underhand roll (bowling) and determining the number knocked down by determining the number left standing.
Measurement and Geometry	Students will time a partner sprint using a conventional or digital clock	Students will measure the sit & reach score of a partner	A group of two students will perform the underhand toss of a beanbag to a target of a distance of about ten yards. Using a tape measure, the students will measure the distance between the target and the beanbags and the distance between each beanbag.
Probability and Statistics	A group of three students will each record and compare their times running across the basketball court. Which is higher? Which is lower?	Students will make bar graphs showing the number of non-locomotor skills that each group will complete by each group in class. The five class groups can choose between twist, stretch, and sway.	A group of students will toss a ball above their head and then catch it, repeating this for one minute. The students will go separately with the other student counting. The students will write their scores in two columns under their name. The students will then determine which is greater, less than, or equal and apply the appropriate symbol between the scores in the columns.
Patterns, Functions, and Algebra	Students will perform the pattern involved in a basic 4-count dance shown on a video as described by the video instructor or teacher.	Students will perform the sequence of certain warm-up stretches with and then without verbal cues.	Students will repeat the pattern of tossing a ball in as particular pattern such a high, high, low, or left to right back and forth, or simple variations.

to engage student learning in mathematics. As students participate in these activities, teachers will be able to follow the VA Standards of Learning for 2nd grade mathematics as a guide. The exercises use disciplines of collaboration and numerical skills that enrich student performance at a low risk.

As noted in the introduction, all individuals learn differently. Gardner (1983) divided these learning styles or "intelligences". Students should be taught through a variety of methods. Some individuals may learn best through movement. When this is the case, these students should be taught subjects in a Kinesthetic Manner – using movement, this manuscript addresses methods of doing this for one grade level.

References

Braulid, A. (1996). *ERIC Clearinghouse on Assessment and Evaluation*. United States Department of Education: Washington DC.

Cherry, K. (2022). *Gardner's Theory of Multiple Intelligences*. Retrieved February 28, 2023 from https://www.verywellmind.com/gardners-theory-of-multiple-intelligences-2795161

Gardner, H. (1983). *Frames of Mind*. New York: Basic Books Inc.

Kovar, S., Combs, C., Campbell, K., Napper-Owen, G., & Worrell, V. (2012). *Elementary classroom teachers as movement educators* (4th Ed.). McGraw-Hill: Boston, MA.

Virginia Department of Education. (2009). *Second Grade Standards of Learning for Mathematics*. Retrieved January 25, 2023, from https://www.doe.virginia.gov/teaching-learning-assessment/instruction/mathematics/standards-of-learning-for-mathematics

Psychological Training: Equally as Important as Physical Training

Hannah Kraemer, Physical Education Teacher/Coach, Thief River Falls High School, Thief River Falls, MN
Brad Strand, Ph.D., Professor, Department of Health, Nutrition and Exercise Sciences, North Dakota State University, Fargo, ND

Everyone wants to succeed in life, it is in our nature. No matter what the setting, sport, school, or career, as homo sapiens we are motivated organisms; nothing we do is random (Merced, 2019). As bad as one wants to succeed though, things do not always go one's way. When high-pressure situations arise, a common incident occurs, and the individual under pressure has a sub-optimal performance (Strand, 2023), what some might call choking (Beilock, 2011).

Focusing on athletes and their performance in high-pressure situations, an athlete is to be considered choking when their performance is progressively deteriorating. They might feel out of control and unable to regain control over their performance (Wang et al., 2003). Most golfers know the story of professional golfer Jean van de Velde and his epic choke on the last hole in the 1999 British Open. van de Velde had a three-stroke lead after three rounds and held that lead going into the 18th hole on the final day of the tournament. On the final hole, he hit his driver off the tee with the ball landing in the grass on the right side of the fairway. He found the ball in the grass and tried to hit out. His second shot again went to the right, hit a grandstand, landed atop a stone wall, and bounced backward into deep rough. Laying three in the long grass, he attempted to play out, but the grass grabbed the club, and the ball landed in a water hazard. He dropped from the water and hit his 5th shot into a greenside bunker. He eventually took a triple bogie for the hole and lost the tournament in a three-way playoff. This singular event has been ranked by USA Today as the 4th worst collapse in sports history (McGowan, 2017). The phenomenon of choking and the inability to handle competitive anxiety has become a critical issue that not only affects the athletes' performance but their psychological well-being as well (Wang et al., 2003).

It is important not to confuse anxiety with arousal. Arousal is not always a negative emotion and is necessary to get an athlete into the right physical and mental state. It is a blend of physiological and psychological activity in a person (Wang et al., 2003). To perform at their best, athletes must be appropriately motivated and acutely aroused. Too much arousal and one is overly stimulated; think about a quarterback throwing passes over his receiver's heads. Too little arousal and one is under-stimulated and perhaps apathetic. Think about the basketball player who barely makes it up and down the court in a lackadaisical fashion. The key is to find the arousal level that is, in the words of Goldilocks, "just right."

The inverted-U model places arousal on a horizontal continuum stretching from low to high and performance from low to high on a lateral continuum (Arent et al., 2003). This model suggests that with low arousal, performance will be low, and with too high arousal, likewise, performance will be low. An optimal level of arousal will result in increased or optimal performance. Finding that optimal level of arousal is often elusive (Strand, 2023).

Anxiety, on the other hand, is a negative emotional state. Arousal can trigger anxiety and symptoms of nervousness and apprehension (Weinberg et al., 2019). Woodman et al. (2003) simplified the difference between cognitive anxiety and somatic anxiety. Cognitive anxiety is defined as negative expectations and cognitive concerns about oneself, the situation at hand, and potential consequences and is manifest within the brain (overthinking situations). Somatic anxiety is the perception of one's physiological arousal and may manifest in stomach pain, chest pain, dizziness, and headache (physical effects).

Athletes spend hours practicing different skills and plays, so why do they all of a sudden lose their ability to perform when the pressure is on? The situation an athlete finds themself in plays an integral role in their emotional response. Athletes experience anxiety if they perceive a situation to be threatening to their psychological or physical well-being (Dunn & Nielson, 1996).
An athlete's overarching personality is known as his or her trait personality (Giacobbi, 2000). By definition, a trait is a distinguishing characteristic that is relatively stable. A trait causes one to act or react the way they do. In sports, one's trait characteristics play into what is known as trait anxiety. Trait anxiety is generally a chronic condition that is related to personality. Similarly, there is state anxiety. One's states are characteristics of thinking, feeling, and behaving in a situation at a specific time. State anxiety is generally a temporary feeling of anxiety related to a particular event and is common among athletes.

There is a relationship between one's trait and state anxiety. This means that if one's natural trait is to be anxious, he or she will likely have state anxiety too. Conversely, if one's trait anxiety is relatively low, one's state anxiety will also be low. This, however, is not a perfect relationship. One could have low trait anxiety and high state anxiety.

What is Choking?

The psychological and physical symptoms of choking include difficulty concentrating to the point of mental blankness, focusing on minor, irrelevant details, heightened alertness, compulsive behaviors, intrusive and ruminative self-critical catastrophizing thoughts, restlessness, agitation, dizziness, nausea, dry mouth, rapid shallow breathing, profuse perspiration, elevated heart rate and, blood pressure, muscle fatigue and/or weakness, and involuntary muscle activity such as cramping, freezing, tremors, and/or spasms (Merced, 2019). These symptoms will certainly vary from athlete to athlete.

Merced (2019) looked at the psychodynamics of choking. He compared physical choking (i.e., having difficulty breathing) to psychological choking. These situations, although very different

feel the same to an individual in that both can be/feel like a life-or-death experience. Of course, physically choking is much more serious than missing a game-winning free throw, but when an athlete is in a high-pressure situation, they experience a similar threatening feeling.

Many sports psychologists have studied the relationship between anxiety and athletic performance, especially within the last forty years. When trying to clarify this relationship, three main theories have become popular, reversal theory, optimal zone of function, and catastrophe theory (Woodman et al., 2003). The reversal theory suggests that how arousal affects performance depends on an individual's interpretation of his or her arousal level (Wang et al., 2003). This can change minute to minute as well. For example, an athlete might perceive the feeling of arousal from cheering fans as supportive and positive in one moment, and then perceive it as negative in the next moment.

The optimal zone of functioning states that each athlete has a zone of optimal state anxiety in which their peak performance occurs (Woodman et al., 2003). If an athlete's arousal level is too high or too low, they will experience poor performance. This model indicates that Athlete A will perform best when his state anxiety level is low, Athlete B will perform best when his state anxiety level is moderate, and Athlete C will perform best when her state anxiety level is high.

The catastrophe theory suggests that optimal performance occurs in an inverted U fashion. However, the amount of cognitive anxiety, the thought component of anxiety (Weinberg et al., 2019) an athlete has, plays an important role in performance (Wang et al., 2003). For example, if an athlete is experiencing high levels of cognitive state anxiety as arousal rises towards the athlete's threshold, the athlete will suffer a steep drop in performance.

Athletes do not simply lose their physical abilities, technical skills, and strategic knowledge when they choke. One neurological factor that can promote choking is the prefrontal cortex. The prefrontal cortex plays a role in selective attention and working memory, as well as influences an individual's ability to assess a situation and modulate emotions and impulses (Merced, 2019). When stressed or feeling the pressure of high anxiety, the prefrontal cortex is overwhelmed. This increases the chances of poor decision-making and lack of emotional control (Merced, 2019). Distracting and intrusive thoughts start to come up, leading to negative self-talk.

Other cognitive factors that can cause an athlete to choke are losing the ability to concentrate, the ability to focus on relevant cues, and the ability to engage in positive self-talk (Wang et al., 2003). All of these can be caused by negative self-talk or labeled internal thoughts. These include fear of losing, thinking of failure experiences, low confidence in regards to self-competence, and feeling shame of losing or losing control of concentration from external factors. Some examples of external factors and stimuli can come from a large audience, playing in a new sports arena, the high skill and performance level of opponents, or coaches' pressure (Wang et al., 2003).

An athlete can choke at any point during their career. The earliest episode of choking often occurs in adolescence and early adulthood (Merced, 2019). This is generally when an athlete first experiences competitive, high-pressure situations. High-pressure situations are specific to the athlete. Two athletes can experience different forms of anxiety while in the same situation, for different reasons, and to different degrees (Dunn et al., 1996). For example, one athlete might feel high anxiety while they are at the free-throw line, another feels the pressure in the first round of playoffs, and another is not starting to feel anxiety until the section final game.

While it is easy to research the best physical training methods for an athlete, psychological training is not the same. Physical training involves specific numbers, charts, tests, etc. to follow. One can see the physical changes that occur, unlike psychological training. When looking into the different types of psychological training it is important to remember that each athlete's resiliency and mental toughness is different (Strand, 2023). What might be a high-pressure situation for one athlete is not to the other. A certain type of psychological training might greatly benefit this athlete, but not help the other at all.

But just because a coach cannot see an athlete's brain and mental abilities grow like they can their muscles, if they pay close attention to their athlete's performance, and how they are handling different pressure situations, they will be able to determine if their psychological training is working. It is important to remember that athletes do not only use their physical abilities and skills during competition, they also utilize their psychological and mental capabilities (Wang et al., 2003).

Just like building muscle, creating a winning, positive mental ability also requires time and commitment if an athlete truly wants to gain control in competitive situations (Wang et al., 2003). So how can coaches best prepare their athletes to handle these high-pressure, competitive situations? Simple, give them the tools they need to do just that.

Coaches Role in Helping Athletes Manage Choking

One of the most common ways an athlete can work on their psychological training is through self-talk. Self-talk is a way of communicating to oneself and is an internal stimulus (Wang et al., 2003). Self-talk can be either positive or negative. Positive self-talk can benefit an athlete by increasing their confidence and even their excitement for the competition, thus helping aid in relaxed concentration. Negative self-talk can have a detrimental effect on an athlete's performance. Their focus is shifted from enhancing his or her performance to possible negative outcomes of the competition (Wang et al., 2003). The difference lies within the athlete's perception. If an athlete is focused on their fears, whether it be a fear of losing or fear of being laughed at by peers, the negative symptoms from anxiety start to arise.

Wang et al., (2003) listed three steps in self-talk training. First, the athlete needs to increase their self-awareness in regards to their self-talk before and during competition. Knowing when, where, and under what circumstances the negative self-talk starts is an important starting point. The next step is to replace the negative thoughts with positive thoughts, also called cognitive restructuring. The key to adapting negative self-talk is to do it quickly to meet the demands of the upcoming situation. For example, if a negative thought such as, "She is a much stron-

ger hitter than me," arises counteract it with, "I have improved substantially over the last two months, I can compete with her." Constantly striving to have positive self-talk, the athlete's perceptions, emotions, and physiological responses will follow suit and have a positive effect on his or her performance as well. The final step is to have the athlete continuously log or journal their thought processes. Journaling helps track the progress of the athlete and has been shown to produce positive results (Eke et al., 2019; Frentz, et al., 2020).

Coaches can certainly ask their athletes what makes them nervous in games, or when they feel the negative self-talk starts to arise. Coaches can put athletes in these situations at practice to help them fight through the negativity and practice using positive self-talk. It is important to remind athletes that no one ever completely masters this or all of a sudden "arrives" here. Working on positive self-talk takes time and practice just like anything in life.

Mental imagery is another tool that can greatly benefit an athlete and help prevent them from choking. It is even considered one of the most important techniques for mental preparation before and during competition (Wang et al., 2003). Mental imaging is visioning one's performance before stepping onto a court or field but it is more than telling an athlete to picture themselves performing a specific movement. Mental imagery prepares athletes to see how they will perform, trains them to think about what is most important in their performance, and allows them to relax by focusing on things they can control and that matter for great performance.

Athletes can practice mental imagery from a first- or third-person perspective. From the first-person perspective, an athlete envisions herself doing the sport or activity. If the sport was track and field and the athlete was a sprinter, the athlete would imagine being posed in the starting blocks, ready for the starting gun. Upon starting, the sprinter would be on the track, envisioning every stride. From the third-person perspective, the athlete would be removed from the action and would be watching herself run. Visualization aims to mentally rehearse one's performance and the outcome one wants when performing. Performers want to use their senses (hear, see, feel, smell, taste) to visualize in detail how their bodies will feel when they perform. Some performers add physical movements that coincide with the visualized images Mental imagery can have many positive effects on sports training and competition, including practicing strategies, skill development, attention and anxiety control, as well as recovery from injury (Wang et al., 2003). To help an athlete increase their mental imagery abilities, three areas need to be focused on and enhanced. These areas are vividness, controllability, and self-perception (Wang et al., 2003). In enhancing one's ability to visualize there is a specific sequence that should be followed. Starting with visualizing different objects or human motions from (a) a simple object to a complex object, (b) from a stationary situation to a moving situation, (c) from one object to two objects then on to three objects, (d) from an easy skill to a more difficult skill, (e) from a skill to a strategy, (f) from imagery without emotion to imagery with emotion, and (g) from an isolated situation to a simulated competitive situation and so on (Wang et al., 2003).

When rehearsing mental imagery, the stimuli should be similar to the actual competition conditions and the equal length of the real-time skill or event. Meaning, that if an athlete's event lasts for 15 seconds in a loud environment, they should rehearse their mental imagery for 15 seconds surrounded by distracting, loud noise. Keep in mind, that this type of training can be done before, during, or after practice depending on what works best for the athlete.

Concentration is brought up frequently, being a common factor whether an athlete chokes or not during competition. Having the appropriate focus before, as well as during competition can be a critical factor in determining whether an athlete will perform to their standard. This is because executing a distinct pattern of movements requires that the brain send precise signals to the muscles (Wang et al., 2003). This is a complex process. Without being able to focus attention on the appropriate stimuli, competitive anxiety (sweaty palms, shallow breathing, pounding heart, negative thoughts) can start to arise, thus affecting an athlete's performance. Some examples of inappropriate stimuli athletes should avoid focusing on include previous failure experiences, thinking about the consequences of losing, or the outcome expectancies (Wang et al., 2003).

Coaches tell their athletes to focus, but have they, the athletes, ever been taught how to properly focus? There is a practical four-step process to do just that. Step one involves self-awareness training, which helps the athlete become aware of what type of attention focus they have in a typical competitive situation. Is their focus too broad where they are trying to focus on everything they see, or is it too narrow where they are overanalyzing to the point they have become robotic?

The second step is to develop the right strategy to replace the irrelevant attention with a required attentional focus. This could be done by focusing on a technical routine instead of worrying about losing. The third step is to have the athlete repeatedly rehearse mental imagery to enhance the athlete's attention during noncompetitive situations so this becomes a natural tendency to control their attentional focus when needed. The final step requires the athlete to check into their arousal levels while performing. This is generally done in a simulated training condition, not a live competitive one (Wang et al., 2003). Arousal levels can be monitored by heart rate, breathing, muscle tension, and even the overall sense of confidence (Weinberg et al., 2019).

Rituals are another popular strategy athletes use to help them focus and mentally prepare before competition. This is because rituals can influence goal-regulated behaviors by increasing motivation and decreasing additional sources of anxiety (Hobson et al., 2017). Athletes can "feel off" if they do not follow their pregame ritual correctly or are rushed through it. Even though putting the left shinpad on before the right has zero effect on how one will physically play, it can affect the athlete mentally, and that can make all the difference. Whatever an athlete's pregame ritual is, in the end, it helps them mobilize motivation and regulatory states, improves concentration, creates physical readiness, and boosts confidence (Hobson et al., 2017). In short, feeling calm and prepared matters. These rituals can also be helpful to an athlete during competition. For example, when a basketball player steps up to the free throw line, performing the same rou-

tine each time can help calm them, thus increasing their success.

Coaches can help athletes get in the right mindset by using effective pregame speeches. This is a popular tool used no matter what the sport, and has been seen in countless movies. The famous speeches from Herb Brooks in *Miracle and* Vince Lombardi's "Winning isn't everything, it is the only thing," all have something in common. These speeches rarely have anything to do with the technicalities of the sports or play the team will run, they evoke an emotional response from athletes, such as pride (Vargas-Tonsing et al., 2006). Speeches can tap into an athlete's self-efficacy, which is defined as a person's belief in his or her ability to perform a specific task. Self-efficacy is a strong predictor of athletic performance (Vargas-Tonsing et al., 2006). Coaches can use these speeches to connect athletic performance and performance later in life, which can help motivate athletes even more.

Conclusion

All of the aforementioned tools are related and will only benefit athletes if done properly. But things take time. Trying to learn and use every single strategy listed will only overwhelm an athlete. Start small and stay consistent.

Most athletes are going to choke at some point in their athletic career. For coaches, it is a responsibility to help their athletes by preparing them to meet the many demands that sports bring such as psychological, physiological, emotional, technical, and tactical dimensions (Wang et al., 2003). Giving them the tools they need and making psychological training as important as physical training will equip them to avoid choking as much as possible.

Ultimately, the success of an athlete depends largely on his or her mental control before and during competition.

References

Arent, S. M., & Landers, D. M. (2003). Arousal, anxiety, and performance: A reexamination of the Inverted-U hypothesis. *Research Quarterly for Exercise and Sport, 71*, 436-444. doi: 10.1080/02701367.2003.10609113

Beilock, S. (2011). *Choke: What the secrets of the brain reveal about getting it right when you have to*. Free Press: NY, NY.

Dunn, J. G. H., & Nielsen, A. B. (1996). A classificatory system of anxiety-inducing situations in four team sports. *Journal of Sport Behavior, 19*, 111-131. https://link.gale.com/apps/doc/A18585500/CSIC?u=ndacad_58105ztrn&sid=bookmark-CSIC&xid=8afa739f

Eke, A., Adam, M., Kowalski, K., & Ferguson, L. (2019). Narratives of adolescent women athletes' body self-compassion, performance, and emotional wellbeing. *Qualitative Research in Sport, Exercise and Health*, DOI: 10.1080/2159676X.2019.1628805

Frentz, D. M., McHugh, T. F., & Mosewich, A. D. (2020). Athletes' experiences of shifting from self-critical to self-compassionate approaches within high-performance sport. *Journal of Applied Sport Psychology, 32*, 565-584. DOI: 10.1080/10413200.2019.1608332

Giacobbi, P. R., & Weinberg, R. S. (2000). An examination of coping in sport: Individual trait anxiety differences and situational consistency. *Sport Psychologist, 14,* 42–62.

Hobson, N. M., Bonk, D., & Inzlicht, M. (2017). Rituals decrease the neural response to performance failure. *PeerJ. 5,* 1-26. https://doi.org/10.7717/peerj.3363

McGowan, S. (2017, Oct. 27). The mental game: Why fear is an athlete's toughest opponent. *USA Today*. https://usatodayhss.com/2017/the-mental-game-why-fear-is-an-athletes-toughest-opponent

Merced, M. (2019). The psychodynamics of "choking" under performance pressure. *Practice Innovations, 4*(1), 28-41. https://doi.org/10.1037/pri0000080

Strand, B. (2023). *Optimal sports performance: Practice smarter, think faster, play better*. PublishDrive: CA.

Vargas-Tonsing, T. M., & Bartholomew, J. B. (2006). An exploratory study of the effects of pregame speeches on team efficacy beliefs. *Journal of Applied Social Psychology, 36*, 918-933. https://doi.org/10.1111/j.0021-9029.2006.00049.x

Wang, J., Callahan, D., & Goldfine, B. (2003). Choking under pressure in competition and psychological intervention approaches. *Strength and Conditioning Journal, 25*(5), 69-75. https://doi.org/10.1519/1533-4295(2003)025<0069:CUPICA>2.0.CO;2

Weinberg, R. S., & Gould, D. (2019). *Foundations of Sport and Exercise Psychology.* Human Kinetics: Champaign, IL.

Woodman, T., & Hardy, L. (2003). The relative impact of cognitive anxiety and self-confidence upon sport performance: A meta-analysis. *Journal of Sport Sciences, 21*, 443-457. https://doi.org/10.1080/0264041031000101809

Social, Physical, and Emotional Benefits of Recess for Students with Crohn's Disease

Matthew D. Lucas, Ed.D., Professor, College of Education and Human Services, Longwood University
Kensington McLoone, Undergraduate Student, Cook-Cole College of Arts and Sciences, Longwood University

Introduction

Educators have a responsibility to stay informed in regards to the characteristics of a variety of diseases and disorders. This includes those that are less common. One of these diseases, which is less common, is Crohn's Disease (CD). This manuscript will address the definition, symptoms, prevalence, benefits, and accommodations for students diagnosed with CD to help them succeed in the recess setting. The recess setting is very important for children because of the social, physical, and emotional benefits.

Definition, Symptoms, and Prevalence of Crohn's Disease

Crohn's disease (CD), also called Regional Enteritis, is a Chronic Inflammatory Bowel Disease (IBD) that causes inflammation in the digestive tract (U.S. National Library of Medicine, 2021). Most commonly, it affects the small intestine and the beginning of the large intestine, but it can affect any part of the digestive tract. The cause of CD is currently unknown, but many researchers hypothesize that the CD may be related to an autoimmune reaction. During autoimmune reactions, harmless bacteria are mistaken for foreign invaders and the immune system responds, causing inflammation (Crohn's and Colitis Foundation: Causes of Crohn's Disease, n.d.).

Symptoms of CD may include the following: diarrhea, cramping and pain in the abdomen, weight loss, anemia, eye redness or pain, fever, fatigue, nausea, and joint pain (US National Library of Medicine, 2021). Other conditions may be caused by CD, such as intestinal obstructions, fistulas, abscesses, ulcers, malnutrition, and inflammation in other areas of the body. There is unfortunately no known cure for CD. Symptoms and complications are usually managed with medicines, bowel rest, and surgery. Diet changes can also reduce symptoms. According to Everhov et al. (2021), in addition, it may also be is recommended that people with CD avoid popcorn, vegetable skins, nuts, below and other high-fiber foods. Everhov et al. (2021) further recommended that patients drink more liquids, eat smaller meals more often, and avoid carbonated drinks. Some patients will undergo surgery to get an ileostomy, also known as a stoma, to manage their symptoms (Everhov et al., 2021).

Equally likely to be affected, men and women aged fifteen through thirty-five are most likely to be diagnosed with CD, but it does affect children (Crohn's and Colitis Foundation, *Causes of Crohn's disease,* n.d.). According to the Crohn's and Colitis Foundation, CD is most prevalent in developed countries, urban cities and towns, and northern climates. It is most common in Western Europe and North America. In these areas, 100 to 300 per 100,000 people are currently affected by CD. Furthermore, people of Northern European ancestry and Ashkenazi descent tend to be affected more than people of other ancestry (Crohn's and Colitis Foundation, *Causes of Crohn's disease* n.d.). Though the inheritance pattern of CD is unclear due to many genetic and environmental factors likely to be involved, it tends to cluster in families; about 15% of people diagnosed with CD have a sibling or parent with the disorder (US National Library of Medicine, 2021).

Benefits of Recess for Students with Crohn's Disease

There are many benefits of recess for students with CD. In regard to physical benefits, exercise can potentially help improve general well-being, fitness, and quality of life for people suffering from the affliction (Ng et al., 2006). Patients with CD - especially children - are likely to suffer from low bone mineral density (BMD) due to lack of nutrition (Millard et al., 2006). Low BMD can lead to fractures, which limit both work and participation in social activities. Exercise has the potential to help improve this condition (Cao et al., 2019). Preliminary studies demonstrate that moderate exercise has no negative health effects and may diminish some symptoms of IBD [such as CD] (Bilski, 2014). Such exercises may also offset the side effects of corticosteroids - also known as steroids - used for anti-inflammatory purposes (Bilski, 2014). Researchers have also found that exercise boosts the immune systems of people with CD (Ploeger et al., 2012). Additionally, studies have found that recess is beneficial to students as participation in movement activities with peers can improve memory and attention, help students stay focused in class, reduce disruptive behavior, and improve social development (Kovar, 2011).

Recess also provides emotional benefits to students (Kovar, 2011). As stated, preliminary studies note the exercise may diminish some symptoms of IBD (Bilski et al, 2014). It is well-documented that that physical exercise helps combat depression and anxiety. As noted in Lucas (2015), according to the Mayo Clinic, exercise can help reduce anxiety and help improve mood (Mayo Clinic: Diseases and Conditions – Depression and anxiety: Exercise eases symptoms, 2014). Students struggling with these conditions may experience difficulty with paying attention in class; overwhelming feelings of sadness, numbness, and frustration; and lack of motivation to do work (Mayo Clinic: Diseases and Conditions – Depression and anxiety: Exercise eases symptoms, 2014). These symptoms along with others may contribute to lower academic performance, higher underachievement, and general lower quality of life (Mayo Clinic: Diseases and Conditions – Depression and anxiety: Exercise eases symptoms, 2014). Children with CD are also likely to spend an increased amount of time sick, hospitalized, or bedridden compared to their healthy peers, so it is beneficial for them to be able to play out-

doors (Mayo Clinic: Diseases and Conditions – Depression and anxiety: Exercise eases symptoms, 2014).

Because children with CD often display some of the symptoms above such as overwhelming feelings of sadness, numbness, and frustration, it is very likely that the children struggle socially. Recess helps improve the social skills of all children, including children with disabilities, in many ways. In addition to helping with creativity, it improves leadership skills, negotiation techniques, and conflict resolution as well (Kovar, et. al, 2011). These are all core skills that children who are able to go to school on a consistent basis have more opportunity to learn. Playtime, if run correctly, including with proper supervision and modifications helps children to make more friends at school, which improves mental health and, in turn, academic performance.

Recess Activity Accommodations for Children with Crohn's Disease

Accommodations to assist in making the recess setting more accessible, enjoyable, and allow for other positive effects of recess for children with CD should be implemented by school personnel. Because of intestinal characteristics, procedures should be implemented to allow for students that need quick and easy access to bathrooms. It might be helpful to appoint a designated staff member who is ready to take children with CD to the restroom promptly. School personnel should encourage low to moderate intensity exercises. Low intensity exercises may include slow walking, light yoga, or tossing and catching a soft ball. Moderate intensity exercises may include jogging slowly for a short distance, jogging a "route" before catching a football, and shooting a basketball in a game of horse. As noted, tossing balls is a good activity, however staff should be mindful if their students have a stoma bag. If students have a stoma bag, shorter and softer tosses, with a soft ball should be stressed and extra supplies should be on hand in the nurse's office to change the bag if needed. Cycling is beneficial for children with CD. The availability and use of a stationary bike is recommended (Crohn's and Colitis Foundation, Exercise, n.d.). Activities that should be avoided include ones which are more likely to bruise students, as children with CD take longer to heal from injuries due to malnutrition. Similarly, activities that increase the likelihood of fracturing a bone should be avoided. If a student suffers from cramps or gets uncomfortable during exercise, staff should encourage them to lightly stretch their body. As with all students, modifications can benefit them during the day.

Conclusion

In conclusion, recess provides significant emotional, physical, and social benefits for students with CD. Teachers and other school staff should know the definition, symptoms, and prevalence, and recess accommodations for students with CD. Teachers should monitor their student's wellbeing during recess and throughout each day and be aware of the particular CD symptoms displayed by their student with CD.

References

Bilski, J., Brzozowski, B., Mauer-Bialy, A., Sliwowski, Z., Brzozowski, B. (2014). The role of physical exercise in inflammatory Bowel Disease. *BioMed Research International,* (2014), 1-14. Retrieved April 21, 2022 from https://www.hindawi.com/journals/bmri/2014/429031

Cao, Q., Huang, Y.-H., Jiang, M., & Dai, C. (2019). The prevalence and risk factors of psychological disorders, malnutrition and quality of life in IBD patients. *Scandinavian Journal of Gastroenterology*, *54* (12), 1-9. Retrieved February 28, 2022, from https://pubmed.ncbi.nlm.nih.gov/31791216/

Crohn's and Colitis Foundation: *Causes of Crohn's disease*. (n.d.). Retrieved February 28, 2022, from https://www.crohnscolitisfoundation.org/what-is-crohns-disease/causes

Crohn's and Colitis Foundation: *Exercise* (n.d.). Retrieved February 28, 2022, from https://www.crohnscolitisfoundation.org/campus-connection/navigating-college/exercise

Everhov, Å. H., Kalman, T. D., Söderling, J., Nordenvall, C., Halfvarson, J., Ekbom, A., Ludvigsson, J. F., Olén, O., & Myrelid, P. (2021). Probability of stoma in incident patients with crohn's disease in Sweden 2003-2019: A population-based study. *Inflammatory Bowel Diseases*, 28 (8), 1160-1168. Retrieved April 20, 2022, from https://pubmed.ncbi.nlm.nih.gov/34618020/

Kovar, S., Combs, C., Campbell, K., Napper-Owen, G., & Worrell, V. (2011). *Elementary Classroom Teachers as Movement Educators*. Mcgraw Hill: New York, NY.

Lucas, M.D. (2015). Students with depression in recess. *The Virginia Journal*, *36* (1), 8-9.

Mayo Clinic: Diseases and Conditions – Depression (major depressive disorder) (2014). Retrieved April 21, 2022 from https://www.mayoclinic.orgg,diseases-conditions/depression/symptoms-causes/syc-20356007

Ng, V., Millard, W., Lebrun, C., & Howard, J. (2006). Exercise and Crohn's disease: Speculations on potential benefits. *Canadian Journal of Gastroenterology,* 10 (1), 657–660.

Ploeger, H., Obeid, J., Nguyen, T., Takken, T., Issenman, R., de Greef, M., & Timmons, B. (2012). Exercise and inflammation in pediatric Crohn's disease. *International Journal of Sports Medicine*, 33 (8), 671-691. Retrieved February 28, 2022, from https://pubmed.ncbi.nlm.nih.gov/22562735/

U.S. National Library of Medicine. (2021). Crohn's disease. *MedlinePlus*. Retrieved February 28, 2022, from https://medlineplus.gov/crohnsdisease.html

Guidelines for Manuscript Submission - (Revised Fall 2023)

The Virginia Journal is published twice yearly (Fall and Spring) by the Virginia Association for Health, Physical Education, Recreation and Dance. Deadlines for submitting materials for inclusion in the spring and fall issues are January 15th and July 15th respectively. Manuscripts should be sent to Dr. Michael Moore, TVJ editor, by email in an attached WORD document(mbmoore@radford.edu) . Each e-mail attachment should be no greater than 4 MB. In submitting a manuscript, the author affirms that it has not been published or accepted for publication elsewhere, unless otherwise stated in writing.

Manuscripts

Manuscripts follow the form of the Publication Manual of the American Psychological Association and must be typed on 8 ½ by 11 format. The attached manuscript must be double spaced except that direct quotations of three or more lines in length are to be single spaced and indented. Manuscripts should not exceed 10-12 double-spaced pages of narrative. The name and institution of each author are inserted on a title page but not on the narrative. There should be provided on the title page biographical information on each author. This biographic information should include name and position at time of manuscript submission.

Any research involving human subjects must have Institutional Review Board (IRB) approval before a review can take place. A PDF copy of the letter must be submitted with each manuscript. If IRB approval was not granted and TVJ editor doesn't have a copy of the approval letter, the manuscript will not be published. Please check with your institution or school for IRB details.

References should be listed at the end of the manuscript and should be arranged in alphabetical order. Each reference cited in the article must be listed, but only those cited should he included. Sources should be cited by placing the author's name and date of publication followed by a page number when appropriate in parentheses: i.e., (Cowlick & Rice, 2015). The reference should be cited following the quote or fact noted. References listed at the end of the article should contain the following information:

1. The author, editor's or compiler's name, in reverse order (surname, followed by first and middle initials).

2. The exact title. Titles of books, pamphlets, periodicals, and newspapers are underlined: titles or articles within periodicals or books are not underlined and precede the periodical or book in which they are found. Only the first word of the title is capitalized and the title is followed by a period.

3. Titles of books are followed by place: company, date of publication. The date, volume, and page numbers follow the title of a journal. If each issue of a journal begins with page 1, include the issue number after the volume number in parentheses. Volume numbers should be italicized, issue numbers should be in parentheses and not italicized for journals. Please see below and the following web page for further examples of APA styles of various sources. http://libguides.radford.edu/apastyle

Examples of Citations

American Dietetic Association. (1999). Dietary guidance for healthy children aged 2 to 11 years. *Journal of the AmericanDietetic Association*, *99*(3), 93-101.

Kulwicki, A., & Rice, V.H. (2003). Arab American adolescent perceptions and experiences with smoking. *Public Health Nursing*, *20*(5), 177-183.

Illustrations

Illustrations such as pictures, graphs, and drawings are valuable additions to manuscripts. Please send these embedded within your manuscript.

Reviewing and Editing

Each article is reviewed by two members of the Editorial Board. Sometimes a guest editor is asked by the editor to review a manuscript depending upon the topic. To be accepted for publication the article must be approved by reviewers. Reasons for rejecting articles include: topic is not of interest to the profession or to only a few members of the Association, topic is of interest but has already been thoroughly discussed in the literature, manuscript discussion is too general and vague, poor research techniques, the manuscript is poorly written or if human subjects were used in your research and IRB approval was not obtained and provided to TVJ Editor. In some instances, a manuscript may be rejected but the author is invited to revise and resubmit it with corrections. Manuscripts accepted are subject to editing to conform to The Virginia Journal format.

Final Acceptance for Electronic Distribution

After the editor has compiled the journal issue, it is sent to the printers. *Virginia AHPERD's executive director, president, past president and president-elect then edit The Virginia Journal*. These four Virginia AHPERD members are provided an electronic drafts for their revision and comment. Upon their approval, the final document is electronically distributed to all authors and the membership via email and uploaded to the association's web page.


CHOCOLATE
MILK
POUR ON
THE PERFORMANCE!
Chocolate milk is a serious sports recovery drink.
With its 13 essential nutrients plus carbs, fluids and electrolytes, it's the perfect way to refuel and rehydrate. And its high-quality protein helps build and repair muscles to get every student athlete back in the game.
No wonder chocolate milk is
The Official Protein Beverage of the VHSL.
Put it on your team!
VHSL
SERVING YOUTH SINCE 1913
CHOCOLATE
MILK
THE DAIRY ALLIANCE
THE OFFICIAL PROTEIN BEVERAGE
OF THE VIRGINIA HIGH SCHOOL LEAGUE
Learn more at:
VHSL.org/sports-nutrition
©2022 TDA

The Virginia Journal
Radford University
Department of Health and Human Performance
P.O. Box 6957
Radford, VA 24142

www.facebook.com/virginiaahperd

www.twitter.com/vahperd

Please submit a manuscript or announcement for our next issue.

The Virginia Journal
Publication Specifications

Submission Deadlines:
January 15 and July 15

Manuscript Specifications:
All manuscripts and announcements should be submitted by e-mail as a WORD attachment.

Authors:
Please include your name, position, address, e-mail address, and telephone number. We recommend membership with SHAPE America or NAHPL.

VIRGINIA AHPERD
THE VIRGINIA ASSOCIATION FOR HEALTH, PHYSICAL EDUCATION, RECREATION, & DANCE

HAVE YOU MOVED?
Please send your change of address information to:
Maria McKeown
Executive Director
info@virginiaahperd.org