

DEFINITION OF SPORTS AND PERFORMANCE VISION

by

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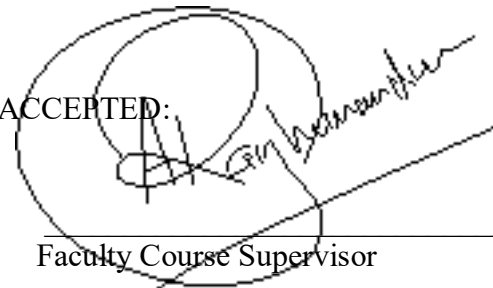
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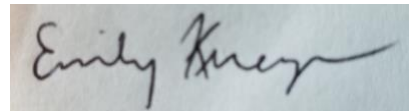


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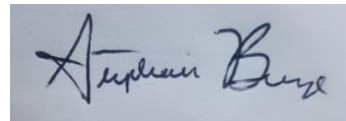
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ABSTRACT

Background: *There is no clear definition of sports and performance vision. Practitioners across the country, who claim to practice sports and performance vision, have a large variety in what they do when it comes to sports and vision. The purpose of this survey was to determine how the practitioner defines sports and performance vision optometry. A survey was sent to optometrists who offer sports and performance vision services and the results were used to define sports and performance vision and how it is incorporated by optometrists into their practices.* **Methods:** *The survey was created online and consisted of 30 questions pertaining to the definition of sports and performance vision and the sports and performance vision services offered. It was sent to optometrists that are considered to be sports and performance vision optometrists. The sample size was 7 optometrists. The survey was open for 1 month.* **Results:** *Results were analyzed to objectively discover the practitioner's definition of sports and performance vision. Results will be compared to literature definitions of sport and performances vision.* **Conclusions:** *Currently, there is no set definition of the scope of sports and performance vision, so this survey attempted to identify what sports and performance vision encompasses. Do to the small sample size, no conclusions can be drawn from the research gathered. Further study needs to be performed.*

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CHAPTER 1

INTRODUCTION TO SPORTS AND PERFORMANCE VISION

Modern day athletes are striving to improve and attain success in their chosen field. Advancements in technology and technique have allowed today's athletes to perform at a higher level than their predecessors. Eyes are a critical component of most sports and activities, therefore, optometrists can play a crucial role in an athlete's success by providing sports and performance vision (SPV) services. There is no clear definition of SPV optometry. Each provider sets a limit or definition of how they interpret the scope of SPV. Many aspects of optometry can be considered part of SPV. These include, but are not limited to, providing best visual acuity, contact lenses, safety eyewear, vision therapy/training, and care of sports sustained injuries. The purpose of this research project is to create a clear definition of SPV based on services that current and former SPV optometrists provide. A clear definition of SPV will hopefully lead to increased awareness and respect for services provided and work as a guide for practitioners. Athletes of all ages and skill level can benefit from SPV services from the appropriate provider.

SPV patients can be athletes of any age and skill level. Professional or collegiate athletes are certainly prime candidates for SPV services. Any person participating in a sporting activity is considered an athlete and may benefit from SPV services. One example is a grade school soccer player needing sports goggles to safely and efficiently compete. Another example is a retired businessman who could improve his golf game with the right contact lenses or photochromic spectacle lenses. Each community has a

different demand for SPV services. While each task is different, athletes all have the same goal of performing to the best of their ability.

Visual skills are essential for the majority of athletes to perform efficiently and effectively at their chosen task. A myriad of visual skills is needed for sports. It is believed by some that practicing perceptual and oculomotor tasks improves athletic performance and reduces injury.¹ When assessing an athlete's visual demands, it must be determined if the sport they participate in involves anticipation or aiming (or both), active or static demands, short or long duration, dynamic vision, changes in contrast sensitivity, and near or far tasks (or both). Once these have been determined, a plan can be developed for the athlete. In addition to achieving optimal visual acuity with contacts or sports eyewear, certain visual skills can be trained through SPV training. According to the American Optometric Association (AOA), there are several visual skills involved in athletics which include dynamic visual acuity, eye tracking, eye-hand-body coordination, visual memory, visualization, peripheral vision, visual reaction time, and depth perception.^{2,3} All of these can be enhanced by sports-focused vision therapy. Another aspect of SPV is protecting the health of the athlete and treating any injuries. Depending on the competitive level of the sport league, eye care professionals may be on site at matches or may provide care in office. Concussion testing can be performed by an optometrist, neurology specialists, or athletic trainer. The AOA provides a triage card for Sports Related Ocular Emergencies which can be given to coaches or athletic trainers. The card provides guidance for when to contact an eye care professional.⁴

Currently, there is no certification to be a SPV specialist. Also, there is no defined scope of SPV optometry, allowing the scope to vary from practitioner to practitioner.

However, there is certification for a comparable field, vision therapy optometry, that optometrists can obtain through the College of Optometrist in Vision Development. The certification allows for acknowledgment of further training in the field.

The AOA provides a doctor locator with a filter option to locate an optometrist that is considered a SPV specialist.⁵ The AOA also has Sport Vision Guidebooks on their website for specific sports including baseball, hockey, rugby, and motocross.

CHAPTER 2

METHODS

Participants:

Optometrists practicing SPV or previously practiced SPV in the United States. There were 26 optometrists that partially responded to the survey and 7 completed the survey. 5 optometrists surveyed previously practiced SPV and 8 optometrists surveyed currently are practicing SPV.

Inclusion/Exclusion Criteria:

The study required participants to be optometrists, practicing in the United States. The optometrist must have provided SPV services during their career. Participants were excluded if they do not hold the title optometrist or had no experience providing SPV services. Special populations were excluded from participating in the study. The special populations included pregnant women, prisoners, individuals with mental disabilities, minors/children, non-English speakers, individuals with physical disabilities, human fetuses/neonates, and those who were not able to freely consent to participate.

Materials:

This study used informed consent forms containing the purpose of the study, the procedures, and how to contact the researchers. The consent forms stated participation is voluntary and information gathered was anonymous. Information was gathered using a survey designed to vary in length per participant response to questions. The maximum length of the survey was 30 questions with a variety of response options. An electronic

survey was sent through a third-party survey company, QuestionPro. Information gathered was de-identified by the company.

Design and Procedure:

This is a non-experimental, qualitative study to define and understand SPV and performance optometry. Variables in this study were exam elements included in a SPV examination, patient population, and frequency of treatment. Participants were recruited electronically through an online community called ODs on Facebook and through a link provided in the Michigan Optometric Association electronic newsletter. Before the participants could begin, they needed to electronically sign the informed consent document. Participants were then given a survey on their involvement and personal classification of SPV optometry. At the end of the survey, the participants were given an area to leave feedback and were thanked for their cooperation.

CHAPTER 3

SURVEY RESULTS

Of the 33 individuals that started the survey, 7 respondents met the conditional criteria and completed the survey. All of the respondents are optometrists. Participants were asked to define sports and performance vision, and the responses widely varied. The three main concepts among the descriptions received were enhancement of ability to improve performance, provide eyewear to complete tasks, and enforce patient safety. When asked to define the term athlete there were three terms commonly used; the word sport(s), activities of motion, and competition (Table 1) . These definitions can impact the patient population to be selected for SPV services.

SPV optometry composes <10% of total practice patient population for 50% of SPV optometrists. For 40% of SPV optometrists, 10-20% of their practice patient population is composed of SPV patients. For 10% of SPV optometrists, 31-40% of their total practice population is sports and performance vision patients. Most responders, 57.14%, limit their time practicing SPV to once a week. 28.57% practice SPV multiple times a week. Only 14.29% perform SPV services daily. 100% of responders stated they do not provide SPV services at practice sessions or games. 14.29% state they perform SPV services once a month as sports training facilities.

Table 2 breaks down the age groups most commonly seeking SPV services. The most common type of athlete worked with was those between ninth and twelfth grade. The AOA defines certain visual skills as important to SPV. These visual skills are dynamic visual acuity, eye tracking, eye-hand-body coordination, visual memory, visualization, peripheral vision, visual reaction time, and depth perception. Table 3

breaks down these visual skills into how often they are tested and trained. Table four breaks down specialty SVP equipment providers have in office. The following special equipment was offered by the offices: Wayne Saccadic Fixator, Vision Coach Interactive Light Board, Eyeport vision trainer, Balance boards, Strobe training glasses, Sanet vision integrator, Fitlight, Senaptec sensory station/tablet, RightEye system, M&S Sports Vision Performance, NeuroTracker, Computer software programs, virtual reality, peripheral vision trainer. 0 % of participants claimed to practice syntonics as part of their sports therapy program.

85.71% of the respondents include vision therapy as part of the their SPV services and 14.29% refer to a clinic that performs vision therapy. 83.33% of those that provide vision therapy have formal vision therapy training. 0% stated that their office has a certified vision therapist. Sport vision training was most often performed individually with the athlete, with no responders stating they performed training in either small groups or the entire team. Training most often occurred out of season with 57.14% stating training occurs only out of season. 14.29% of responders stated they perform training during in season, and 28.57% stated they perform training both in and out of season. 66.67% of providers have their patients bring their own equipment into their vision therapy sessions to incorporate into training. 42.86% of responders consulted with coaches or trainers, with 66.67 % consulting in person and 33.33% over the phone.

100% of participants included contact lenses as part of their SPV services. Soft lenses, rigid gas permeable lenses, corneal reshaping lenses, and tinted lenses are the types of contact lenses providers fit as part of SPV . Table five breaks down the percentage of providers that fit these types of contact lenses for SPV. 85.71% state they

include specialty spectacles and lenses as part of the SPV services. Of the providers that consider specialty lenses and eyewear as a SPV service, 100% include prescription sunglasses, sports goggles, transitions, and polycarbonate lenses as SPV services. 83% Of the providers that consider specialty lenses and eyewear as a SPV service, consider sports glasses, water goggles, tints, polarized lenses as a part of SPV services. 0% fit specialty headwear such as helmets.

Participants were asked how they provide services for the prevention and management of sports related injuries. Table six shows methods used to provide safety information. 71.43% of respondents were involved in concussion management. Of those that did 80% performed pre-testing and 80 % post-concussive treatment and management.

CHAPTER 4

DISCUSSION & CONCLUSION

There is a discrepancy among the optometric community on the definition of SPV, the type of patient that should receive SPV services, and what these services should entail. This confusion among the optometric community can hinder growth of the SPV field and prevent optimal patient care.

When asked to provide a definition of an athlete most providers gave a generalized open definition to allow for individual interpretation. This type of definition will allow for more patients to qualify for SPV services. Some providers gave a very specific definition narrowing the patient population down to only competitive athletes. While narrowing down the definition can help those providers target their ideal patient population, it can limit other non-competitive athletes from receiving care they need or desire. A generalized definition that allows for the everyday athlete trying to make a free-throw or the elite Olympian be eligible for SVP services. Increased awareness will follow if increased patient selection and inclusion occurs.

There are a wide range of services that can be considered SPV. A definition of SPV will hopefully allow providers to understand the service and refer to an appropriate optometrist that can help manage the patient. This survey lacked the response needed to fully understand the current state SPV optometry and define the field and what services it should entail. Further research needs to be done with a larger sample size to fully analyze the field.

TABLES

Table One

Key Words to Describe an Athlete

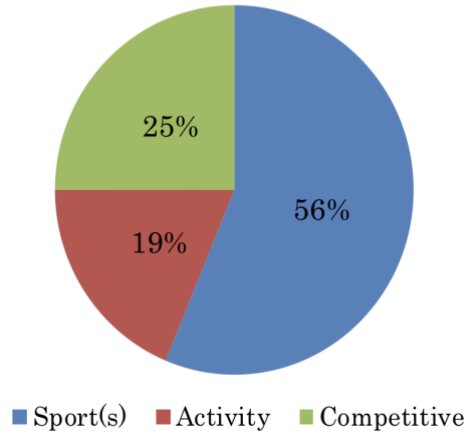


Table Two

Age Groups in Sports & Performance Vision Services

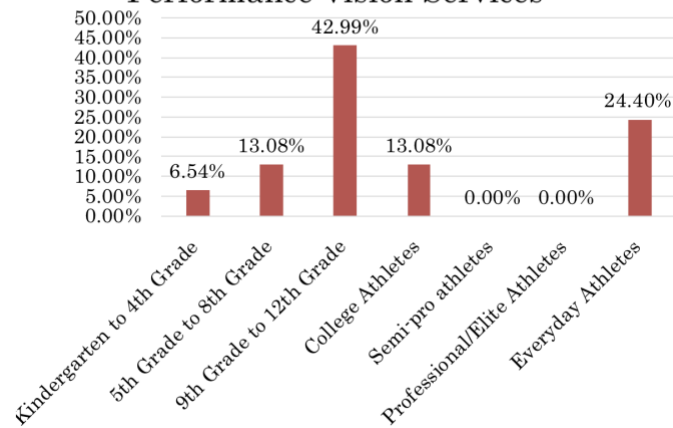


Table Three

What Visual Skills are Tested and Trained?

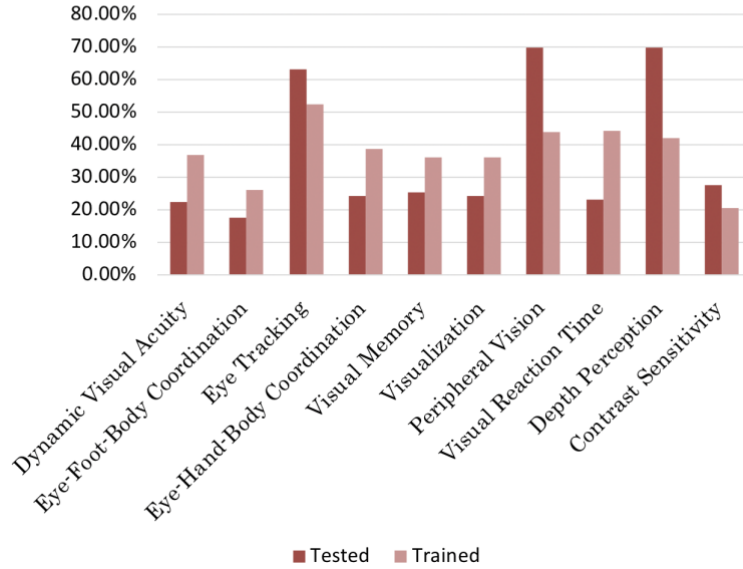


Table Four

Specialty Equipment in Office

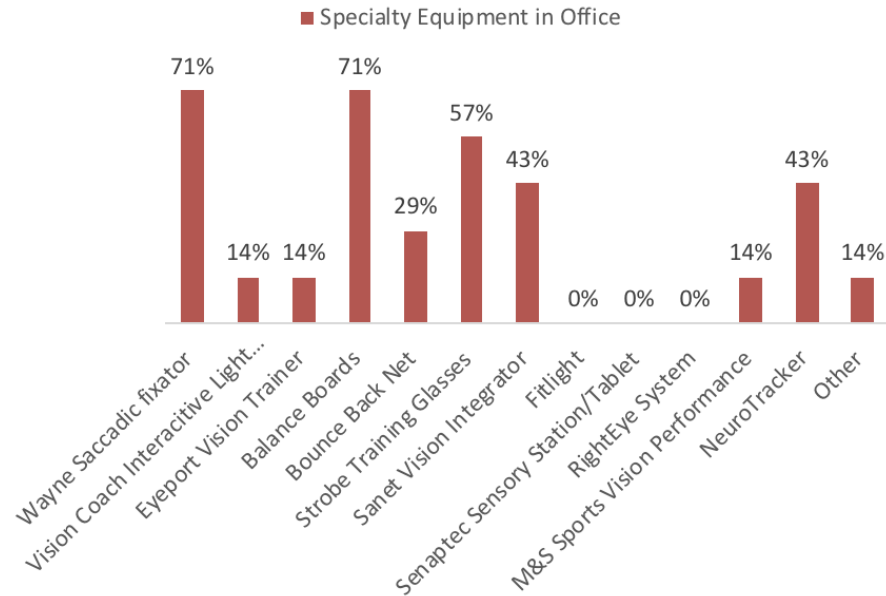


Table Five

What Type of Contact Lenses Do You Fit for SPV?

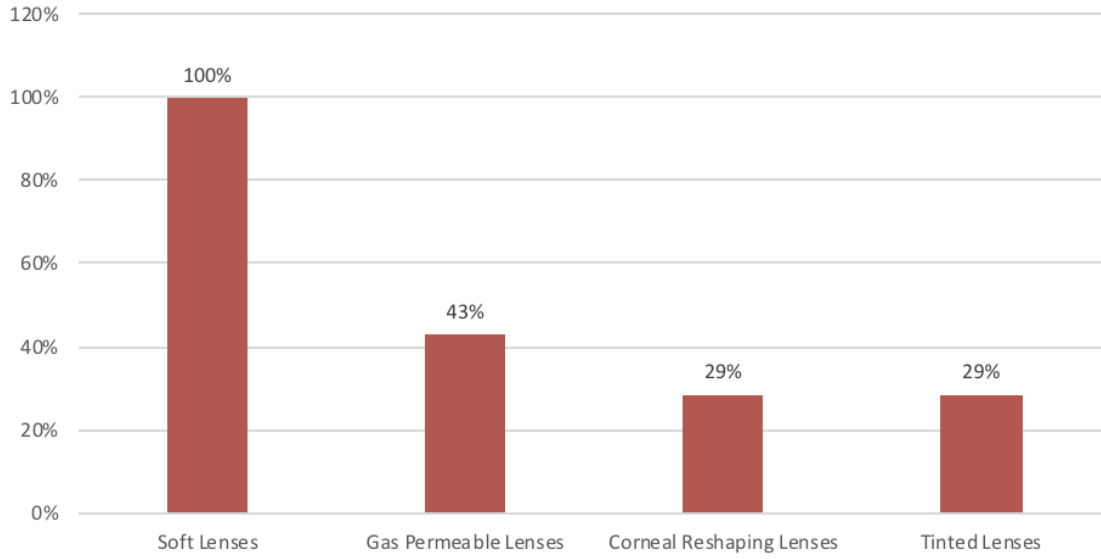
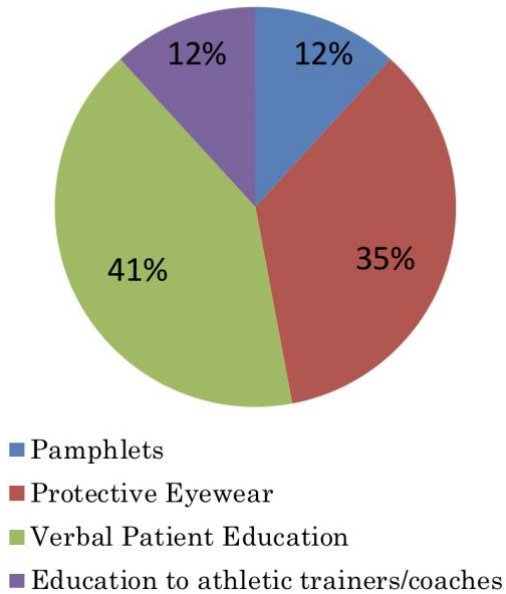


Table Six

Methods to Address Safety



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