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An Exploratory Investigation of the Effect of a Sports Vision Program on Grade 4 and 5 Female Netball Players' Visual Skills

Abstract:

Vision is one of the most complex and dominant sensory systems necessary for information feedback from the environment. Few studies have already reported a positive effect of a sport vision program on elite sport teams' visual skills; however, few studies have focused on the effect of sport vision programs on children's visual skills. Therefore, the aim of this study was to determine the effect of a sports vision program on Grade 4 and 5 female netball players' visual skills. Girls (N=25) with a mean age of 10.08 years (SD=0.65) formed part of this study. A pre-test-post-test design was followed with a retention test. The eight-week sports vision program was executed twice a week for 60 min on the experimental group (n=13). The Developmental Test of Visual-Motor Integration (VMI-4), the Wayne Saccadic Fixator (WSF) and the Developmental Eye Movement (DEM) test were used to evaluate the girls' visual skills, hand-eye coordination, visual reaction time, peripheral vision and saccadic eye movements. No statistical differences were found between the two groups before starting with the sports vision program. After intervention, significant differences between the two groups were reported, with the experimental group performing better in hand-eye coordination ($p=0.001$) and reaction time ($p=0.001$). Results further indicated that the experimental group experienced significant improvements ($p\leq 0.05$) in motor coordination, hand-eye coordination, reaction speed and visual tracking after intervention with significant lasting effects ($p\leq 0.05$). The control group performed significantly worse in reaction time ($p=0.01$). A sports vision program can be recommended for Grade 4 and 5 female netball players to improve certain visual skills.

Keywords: depth perception; hand-eye coordination; netball; ocular motor control; sports vision; visual skills

Biography: Prof. Dr. Dané Coetzee is a full professor in the School of Human Movement Sciences at North-West University, Potchefstroom. She leads the Kinderkinetics program, focusing on early childhood development, motor development, physical activity, visual stimulation, and sport vision. Her research explores ADHD, DCD, motor delays, and their impact on academic skills, publishing extensively in national and international journals. An NRF C2-rated researcher, she supervises postgraduate students and conducts community workshops. Prof. Coetzee has served as President of SAPIK and is a Senior Young Leader (GCHSYL). She has actively contributed to international conferences as part of the Future Leader Volunteer Programme since 2016.