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Development of a Norm Table and a Device for a Six-Corner Agility Test for Age between 16 to 19 Badminton Players in Sri Lanka

DNV Dangalla[1#], MRMA Jayasinghe[1], HACS Hapuarachchi[1], ERJMDDP Wijesekara[2], and DKA Induranga[2]

[1]Department of Sports Sciences and Physical Education, Faculty of Applied Sciences, Sabaragamuwa University of Sri Lanka

[2]Department of Biosystems Technology, Faculty of Technology, Sabaragamuwa University of Sri Lanka

[#]nayanajithdangalla@gmail.com

The fast-paced indoor racket sport of badminton requires great agility, accuracy, and strategic thinking. This study created and validated the Six Corner Agility Test (SCAT) in response to the need for a reliable method to evaluate agility in young badminton players, ages 16 to 19. The SCAT is a new evaluation instrument that uses a combination of a NodeMCU ESP8266 WiFi circuit, sound speakers, LED lights, and infrared sensors to assess agility. These components are strategically placed at the front, rear, middle, and center portions of the badminton court to ensure a thorough evaluation of the player's agility. Using 5,000 samples, robust bootstrap methods were used to evaluate data from a sample of 464 people (260 men and 202 women) using IBM SPSS version 23 software. The test was observed through a real-time web application for each player and after the completion of the test, the time spent to finish the test was recorded. The latter time was the final result which depicted the agility level of the player. The male participants' performance was categorized using a reference norms table mentioning: "Excellent" (less than 10.73 seconds), "Good" (11.27 to 11.83 seconds), "Average" (12.40 to 12.93 seconds), "Fair" (13.50 to 14.23 seconds), and "Poor" (14.79 seconds or more). The female participants' performance was categorized using a reference norms table mentioning: "Excellent" (less than 11.97 seconds), "Good" (12.54 to 13.10 seconds), "Average" (13.70 to 14.21 seconds), "Fair" (14.96 to 15.44 seconds), and "Poor" (15.89 seconds +). The findings demonstrate that the SCAT supported by its norms table is an effective and reliable tool for assessing agility in young badminton players providing valuable insights for coaches and athletes in their training and performance evaluation

Keywords: *agility device, badminton players, norms table, six corner agility test*