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INTRODUCTION

Concussions and their long-term effects are variable issues that have grown in prevalence in the sports industry in recent years, increasing from thousands to millions. Most clinicians and researchers believe more work can still be done to improve the diagnosis and treatment process. Advancements have been made in injury definition and impact recognition, thus the diagnosis, treatment, and recovery processes need to match. One tool utilized for baseline testing and diagnosis is the SCAT5. The SCAT5 is a standardized tool for evaluating concussions designed for use by physicians and licensed healthcare professionals.

OBJECTIVES

The purpose of this study was to determine a normative dataset from the results of the SCAT5, the modern concussion assessment tool, performed on uninjured college-aged individuals.

METHODS

26 (13 male, 13 female) individuals aged between 18 and 30 were recruited via email to the graduate and medical students at OSU CHS and via text message to recent high school graduates from Tulsa-area high schools. Subjects entered the laboratory and completed the office SCAT5 by the researchers. Data was collected via the office SCAT5 questionnaire by the researchers. During the SCAT5 questionnaire, subjects were inquired to monitor their orientation, memorization, and concentration. After inquiry, the subjects participated in balance testing. They were asked to form three stances and hold as still as possible for 20 seconds with their eyes closed (shown at right). Frequencies, standard deviations, and Pearson r correlations were calculated to determine relationships between variables.

METHODS

Balance Test Position 1



Balance Test Position 2



Balance Test Position 3



RESULTS

Table 1: Means and Standard Deviations

Variables	Mean and Standard Deviation
Years of Education	15.5±2.79
Age	23.35±4.5
Number of Previous Concussions	0.62±1.6
Symptoms Checklist	1.08±2.02
Symptom Severity	1.89±4.09
Orientation (scored out of 5)	4.92±0.27
Immediate Memory (scored out of 15)	13.77±2.01
Digits in Reverse Order (scored out of 4)	2.5±0.95
Concentration Total Score (scored out of 5)	3.31±1.16
Balance Errors (scored out of 30)	5.46±4.25
Delayed Recall (scored out of 5)	3.5±1.03

Table 2: Pearson r Correlations

Variable 1	Variable 2	Pearson r	Significance
orientation	months in reverse	0.68	0.00
immediate memory	balance errors	0.51	0.01
digits in reverse	concentration total	0.95	0.00

CONCLUSION

Data from this study provides baseline comparative data on non-athlete college-aged individuals. This data can be utilized by clinicians in the diagnosis of concussions and return to play decisions. While this study is limited by the number of participants, it provides a small subset of comparative information. Further research with an increased population is needed to find greater correlations between variables and a more robust set of comparative results.

DISCUSSION

It is important for all clinicians to know and understand the methods utilized for concussion testing and return to play decision making. The SCAT5 (created by the Berlin Concussion Congress) is a well accepted and researched method that can be used to ultimately determine whether a patient is concussed. It provides a comparison of normative data results to the results of an injured individual should the individual not have personal baseline data.

REFERENCES

1. Echemendia RJ, Meeuwisse W, McCrory P, et al. The Sport Concussion Assessment Tool 5th Edition (SCAT5) *Br J Sports Med* Published Online First: 26 April 2017. doi: 10.1136/bjsports-2017-097506



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