INTRODUCTION

Objective: To determine correlation between number of concussions and symptomatology and objective measures gathered from Immediate Post-Concussion Assessment and Cognitive Test (ImPACT) in the pediatric population.

METHODS

• Design: This is a retrospective cohort analysis of pediatric patients with identified history of concussion in January 2015 until August 1, 2016. Patient population was identified by presence of data in the ImPACT databases. Data review consisted of age, gender, education level, quality of student, performance on ImPACT testing, and total symptom score.
• Setting: Tertiary outpatient pediatric hospital
• Participants: Patient population includes ages 12 to 35 who presented to concussion clinic, were documented by rehabilitation providers of having a diagnosis of concussion, and received ImPACT testing.
• Level of evidence: Level III (Retrospective Comparative Study)

RESULTS

After analyzing data from 356 patients, female gender was noted to be statistically significant (p<0.0001) when comparing total symptom scores to male gender by Wilcoxon rank sums test. 186 females and 170 males and we found that the median symptom score of females and males were 23 (standard deviation ± 28.095) and 9 (standard deviation ± 23.460), respectively. No statistically significant differences were found regarding total symptom score with regard to age, presence of premorbid attention-deficit hyperactivity disorder, reported quality of student, or prior number of concussions.

SUMMARY & CONCLUSION

Overall, our study found that female gender had higher total symptom scores on ImPACT testing compared to males in the post-concussion population. Future studies may need more patients in sub-groups to determine if other contributors are equally significant. Concussions among the pediatric population is an important public health issue that should be addressed. In 2009, it was reported that 248,418 children were treated in U.S. Emergency Rooms for concussions, a number that has been on the rise [1]. While ImPACT testing has been used to identify neurocognitive impairments, the correlation with total symptom scores and psychosocial effects has not yet been explored. These symptoms include: headaches, dizziness, vertigo, mental dulling, confusion, impaired concentration, fatigue, irritability, and behavioral disturbances leading to a poorer quality of life [2]. We plan to use this study to gain a better understanding of how to aid children in returning to school by addressing their functional needs.

CREDITS/DISCLOSURE/REFERENCES

- 3 http://www.josephmaroon.com/impaact-concussion-testing/
- 4 http://akasport.org/blog/2016/7/25/concussions-and-sports-national-dizziness-balance-center