

# Multi-Disciplinary Concussion Clinic Helps Decrease Socioeconomic Barriers for Behavioral and Psychological Diagnosis after Sports-Related Concussions

## INTRODUCTION

- Sports-related injuries account for approximately 1-2 million mild traumatic brain injuries (TBIs) in the pediatric population annually (1)
- Concussions account for approximately 75% of all pediatric TBIs, with sports-related concussions accounting for 65% of pediatric concussions (2)
- SRC are defined as mild traumatic brain injury (TBI) during athletics resulting in the onset of neurological impairments and a constellation of symptoms such as headache, nausea, vomiting, dizziness, confusion, and lethargy (3)
- While most children recover within 4 weeks, anywhere from 15-50% of children can develop Post-concussion Syndrome and experience long-term symptoms impacting both the social and academic aspects of their lives (1)
- Previous studies have examined factors such as race and gender in relation to long term concussion sequelae such as attention deficits and emotional and psychiatric symptoms. However, socioeconomic factors such as insurance status have yet to be studied

## OBJECTIVE

To evaluate the relationship between patients' insurance status and the development of ADHD or psychiatric diagnoses following sports-related concussions (SRC)

## METHODS

- Retrospective review of patients less than 18 years old who sustained SRC at Children's Hospital in New Orleans between January 2007 to April 2023
- Information regarding demographics (age, gender, race), insurance type (private, Medicaid, uninsured), number of follow ups, date of first HPI, date of last follow up visit, and length of time to ADHD/psychiatric diagnosis was collected
- We performed t-test, chi-square vs Fischer's exact to analyze outcomes between demographics, insurance types, and post-concussion sequelae

## MULTI-DISCIPLINARY CONCUSSION CLINIC AT CHILDREN'S HOSPITAL



Neurologists



Post-concussion symptom scale



Return to play



Clinical psychologists



Neurocognitive testing

## RESULTS

	Medicaid/None (128)	Private (97)	P-value
Age (years)	13.36±2.59	14.47±2.03	<b>0.003</b>
Sex (Male, %)	89 (69.5)	51 (52.6)	<b>0.0123</b>
Race (White, %)	49 (38)	64 (66)	<b>0.0001</b>

Table 1. Demographics of SRC

	Medicaid/None N = 128 (%)	Private N = 97 (%)	P-value
Pre-SRC learning disability	78 (60.1)	59 (60.8)	1.0
Post-SRC new/worsening learning disability	7 (0.55)	6 (0.062)	1.0
Pre-SRC psychiatric diagnosis	46 (35.9)	41 (42.3)	0.3378
Post-SRC new/worsening psychiatric diagnosis	32 (0.25)	15 (0.15)	0.1418

Table 2. Behavioral and psychological diagnoses pre- and post-SRC

	Medicaid/None N = 128 (%)	Private N = 97 (%)	P-value
Concussion clinic visits (mean, SD)	3.02±1.87	2.98±1.44	0.4207
Patients lost to follow up	25 (19.5)	14 (14.4)	0.3756
Months to behavioral or psychiatric diagnosis (mean, SD)	12.16±12.55	14.32±11.71	0.2660

Table 3. SRC rehabilitation course

## DISCUSSION & CONCLUSIONS

- The average age following SRC was 14 years old, and Medicaid patients were more likely to be younger, male, and non-white (Table 1)
- Despite having Medicaid/no insurance, patients did not have a difference in post-concussion diagnoses (Table 2). There was also no difference in the number of clinic appointments, loss to follow up, or length of time to diagnosis based on insurance (Table 3)
- We found no association between insurance status and outcomes related to behavioral and psychiatric diagnoses following SRC. A multidisciplinary approach to concussion care may be one way to provide equal access to testing and follow up of behavioral and learning disabilities
- However, the average length of time until diagnoses was over a year (Table 3). Therefore, it is imperative that clinicians and parents monitor patients' behavioral and emotional changes following SRC to make earlier diagnoses and help patients seek earlier treatment

## REFERENCES

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