Concussion Subtyping in Patients with Persistent Post Concussive Symptoms Using a New Concussion Clinical Profile Screen Tool (CP Screen)

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Objective:
To identify the prevalence of subtypes in Persistent Post Concussion Symptoms (PPCS) and investigate their potential relationships.

Background:

The CP-Screen is designed to evaluate 5 clinical profiles and 2 modifiers that are predominant within concussion patients. The CP screen includes 29 items that are expressed as weighted outcome scores for each of the seven concussion subtypes.

Design/Methods:
This was a retrospective-chart review of 1136 visits for 362 patients with PPCS at a concussion center. Age range was 12-81 and average age was 32, 65.7% were female and 34.3% male. 360 visits were in the 12-21 pediatric age range. Each patient completed an electronic CP-Screen prior to each visit, which was uploaded to the EHR. All patients were seen between October 2020 and April 2021.

Results:

Overall, the most common subtypes were cognitive (34.0%), neck (17.8%), and mood (16.8%).

The highest overall observed subtype average CP symptom score was mood (32.8/89) and the lowest was visual (23.6/89).

For pediatric the most common phenotypes were cognitive (36.7%), mood (17.9%), and visual (15.4%).

The highest observed pediatric average CP symptom score was mood (30.8/89) and the lowest was sleep (20.1/89).

For those with cognitive primary profile, neck and ocular were the most common secondary and tertiary profiles in both groups.

Females presented with cognitive, mood, neck as their most common profiles compared to cognitive, neck, ocular in males in both groups.

Neck, mood, and visual primary profiles all presented with cognitive fatigue as their secondary profile.

Conclusions:

CP screen was overall a useful tool in helping identify clinical profiles in PPCS. Cognitive fatigue was a predominant profile in PPCS across all ages and sexes. Those with predominant mood profiles presented with the highest symptom scores. Mood profile was more predominant in females. Cognitive primary profile was found to be most linked to cervical, mood, and visual profiles.