The experience of concussion goes beyond the physical symptoms and recovery progression (Limond, Dorris, & McMillan, 2009; Novak et al., 2016; Scherwath et al., 2011; Zemek et al., 2013). For example, Cognitive and emotional symptoms are often a significant aspect of mild TBI (Ellis et al., 2016; Limond et al., 2009; Scherwath et al., 2011). Memory problems and difficulty concentrating and sustaining focus also often emerge during the recovery process (Grubenhoff et al., 2014; Scherwath et al., 2011). The impact of a concussion on daily functioning can last well beyond recovery from the physical symptoms (Limond et al., 2009).

The purpose of the current evaluation was to examine whether a quality of life measure can provide important information not readily measured by a symptom scale.

Methods

- Rating scales were included in packets completed by pediatric patients at their doctor’s visit at a regional concussion clinic.
- Participants were told to complete the packets themselves and provide them to medical staff during the appointment.
- 280 packets were collected.

Post Concussion Symptom Scale:
- 22 symptoms
- 7 point Likert scale
- Rating of symptom intensity on that day

Results

ANOVA of Differences Between Time Since Injury Groups for Recovery Domains

- Post concussion symptoms (PCSS Total) and quality of life (PLACES Total) show significant differences for time since injury
- There are significant effects for cognition on both the PCSS and PLACES
- There is a significant effect on the PLACES but not for emotion on PCSS
- Symptom load is elevated for the groups in the early phases of recovery and for those individuals with lingering symptoms. The drop in symptom load during 5-11 week period may reflect recovery patterns.

Post concussive symptoms (PCSS Total) and quality of life (PLACES Total) show significant differences for time since injury.

PLACES Emotion domain.

Not only is the severity of the symptoms tracked over time, but the emotional impact of the symptoms is also evaluated.

Conclusions

- There is a strong correlation between post concussion symptoms (PCSS) and quality of life concerns (PLACES)
- There are moderate to strong correlations between domains on the PCSS and PLACES suggesting that there is a relationship between physical/somatic, cognitive, emotion, and social domains after concussion.
- ANOVA showed significant differences between time since injury groups for Total PCSS symptoms, Total PLACES symptoms, cognition on both measures, PLACES social domain, PCSS Physical/Somatic domain, and PLACES Emotion domain.
- The emotion measure for the PCSS was not significant across groups.
- Symptom load for significant domains on ANOVA showed the same pattern of elevated symptom load in the first 4 weeks and for those individuals with lingering symptoms. The 5-11 week period shows the fewest symptoms.
- Principal component analysis showed that the emotional, social, and school domains load onto different factors than the PCSS emotion and cognition domains.

Clinical implications:
- Concussion recovery is a complex process that involves physical, cognitive, emotional, and quality of life domains.
- The PLACES provides information about concussion symptoms and quality of life that is not available on the PCSS concussion symptom scale.
- In the emotion domain, the items on the PCSS do not fully capture the experience of concussion for pediatric patients.
- A pattern of elevated symptom load during the first 4 weeks with a drop during the 5-11 week period suggests that pediatric patients are recovering during this period. Those individuals with lingering symptoms experience symptom load similar to the high levels of the first 4 weeks after injury.

Limitations:
- Although the directions indicated that the pediatric patient complete the scale, it was noticed that parents and patients sometimes had conversations while the patient completed the forms.
- Information on premorbid conditions was not included.
- Most of the participants were referred for treatment to the clinic by athletes, trainers and primary care physicians. The sample may not be consistent with the broad range of concussion injuries seen by pediatricians and other primary care providers.

References


