Concussion Symptom Treatment and Education Program (C-STEP): Adaptation for Telehealth

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Background
• The Concussion Symptom Treatment and Education Program (C-STEP) is a manualized, brief cognitive-behavioral therapy–based intervention program for children and adolescents with persistent post concussive symptoms (PCS).
• When implemented in outpatient clinic settings, participation in C-STEP is related to a significant reduction of PCS and improved functional outcomes (i.e., sleep sleep-onset insomnia, engagement in weekly exercise, school attendance).
• The COVID-19 pandemic has led to rapid transition and implementation of telehealth services; the existing evidence base demonstrates it is an effective mode of service delivery for mental health (Reay, Looi, & Keightley, 2020).

Objective: To adapt C-STEP for delivery via telehealth.

Methods

Referral process
• Patient diagnosed with concussion and continues to report ongoing PCS and functional impairment (e.g., not attending school regularly, sleep disruption, low activity involvement, change in mood/behavior).
• Medical provider places referral to rehabilitation psychologist in the outpatient pediatric concussion program.
• Referring physician continues to see patient for medical follow-up during the intervention and makes final decisions regarding return to play/activity.

Assessment Measures were converted to fillable PDFs
• Health and Behavior Inventory
• Pediatric Quality of Life Inventory
• Revised Child Anxiety and Depression Scale
• Behavior Assessment Scale for Children
• Functional outcomes including school attendance, activity/exercise, and sleep are gathered at the beginning of each treatment session.

Sessions
• 6 sessions completed through Vidyo
• Typically completed weekly, but in some cases, sessions were spaced further apart due to scheduling conflicts.

Post-Concussion Symptoms

Physical | Cognitive | Emotional
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Headache | Retrograde and/or post-traumatic amnesia | Mood lability
Dizziness/balance problems | Disorientation | Irritability
Vision changes | Acting dizzy or confused | Sadness
Nausea/Vomiting | “Mental fog” | Nervousness
Light/noise sensitivity | Attention problems |
Fatigue | Slurred speech |
Sleep changes |

Cognitive Restructuring Practice for Kids:
Every time I sit down to do my schoolwork my head hurts and I'm not able to do it...

Helpful Thoughts
I can take breaks if I need to
Something is wrong with my brain
I’m never going to catch up on my schoolwork

Unhelpful Thoughts
I was able to do an assignment in class yesterday without getting a headache

Discussion
• C-STEP is feasible for telehealth service delivery in an outpatient clinic 1 to 12 months following a pediatric mild traumatic brain injury.
• Patients and families were receptive to intervention activities and appreciative of electronic session handouts to assist with monitoring progress toward treatment goals and functional gains in between sessions.
• Highlights need for creation of web-based platforms to enhance delivery of these types of treatments via telehealth.

References