Introduction

● Longitudinal effects and secondary symptoms of mTBI contribute to the patients quality life (Smith et al. 2017).

● Acute studies found mTBI patients express post-concussion symptoms and cognitive impairments within one week post injury (Holtzer et al. 2017).

● mTBI patients report post-concussion symptoms at 3 months, 6 months, and 4 years post injury in areas such as headache, fatigue, and concentration (Kraus, Reis, Schacter, J. A. M. L. & Chang, Shery, Victor, Talbot, et al. 2009).

Post-acute cross sectional studies demonstrate cognitive impairments within a year post-injury and processing speed (Holtzer, Machamer, & Temkin, 2017. Understanding, Lakeside, Burdick, Docimo, Strom, Conger, & Angermeier, 2010).

● Longitudinal studies have shown that cognitive impairments in mTBI compared to healthy adults.

Method

● Participants: 24 were mTBI participants and 18 were healthy participants were recruited.

● Procedure: Neuropsychological battery was administered at baseline and 4 months for mTBI and control group.

● mTBI participants were recruited at the Emergency Department of a University Hospital in NJ & healthy participants were recruited from the community.

● Outcome measures: CNS vital signs assessment battery [memory composite, verbal & visual memory, processing speed, reasoning, executive functions, complex attention, cognitive flexibility, working memory, sustained attention, concentration] (Kraus, Hsu, Schafer, & Afifi, 2014; Theadom, Starkey, Barker-Collo, Jones, Ameratunga, & Feigin, 2018)

● The processing speed of the mTBI group, tested in PASAT 2,

● The mTBI group showed significant improvement on PASAT 2 test within the mTBI group compared to the healthy control group.

Results

1. Significant deficits were found in processing speed, executive function, cognitive flexibility and complex attention in the mTBI group compared to the health control group.

2. There were significant differences in the mean scores at baseline compared to the mean scores at 4 months in processing speed (p < 0.010), executive function (p < 0.05), cognitive flexibility (p < 0.05) and complex attention (p < 0.05).

3. There was no significant change between the mean scores at baseline and 4 months for the PASAT 2 test within the mTBI group.

4. There are significant differences between the mTBI group and healthy control group at 4 months on PASAT 2 and PASAT 3 test.

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Conclusion/ Implications

● The mTBI group showed significant improvement on processing speed, executive function, complex attention, and cognitive flexibility by the 4 month follow-up.

● The processing speed of the mTBI group, tested in PASAT 2, did not significantly improve from baseline to 4 months and was significantly worse than the healthy control group at both baseline and 4 months.

● Attention and working memory, tested in PASAT 3, significantly improved for the mTBI group from baseline to 4 months but scores were still significantly worse than the healthy control group at 4 months.

● Our study results indicated cognitive deficits in mTBI patients improve in certain cognitive domains within 4 months post injury when compared to healthy controls.

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References


● Dikmen, S., Machamer, J., & Temkin, N. (2017). Longitudinal effects and secondary symptoms of mTBI contribute to the patients quality life (Bloom et al., 2017).


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