



**TRAUMATIC BRAIN INJURY: VIRTUAL REALITY AS A TOOL FOR
COGNITIVE REHABILITATION IN CHILDREN**

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ABSTRACT: Traumatic brain injury and regaining the cognitive function caused by the injury is a significant concern in this era. Understanding and management needs to be precise and friendly in case of childrens. The treatment modalities vary extensively with more integrated methods such as Virtual Reality therapy could make more advancement in treating of problems such as cognition impairment caused by traumatic brain injury and their faster recovery. Childrens at an age gap of 1-4 is more susceptible for traumatic brain injury, and proper therapy leads to better recovery and higher cognitive and behavioral changes.

KEYWORDS: Traumatic brain injury, Virtual reality, Children

INTRODUCTION: Traumatic brain injury happening to children losses their cognitive function and lead to longer behavioral and memory impairment. The frontal lobe which is solely responsible for cognitive function such as problem solving, memory, motor function , so treating with more accurate way would help in regaining focus , memory etc. For this VR therapy plays a great role in treating them

MATERIALS & METHODS: A deep learning and data analysis and review of currently published studies were carried out of articles in which VR was used as a tool for TBI patients and conducted a deep literature search via (pubmed, Cochrane, wiley library) by following keywords (cognitive rehabilitation, virtual reality, traumatic brain injury ,children).

30 individual with TBI and reported cognitive loss are participated in the assessment in which 15 with VR therapy other 15 with normal treatment and therapy for 4 weeks conducted. Introducing vr tasks and games could help children to visualize and do effectively, since they are more obedient to visual effect and themes than force full therapy VR should be in child friendly animation tasks which allow them to think and visualize and complete within the time. At first with minor task and gradually increasing difficulty level by the end of 4th week. In the end we take an assessment of





both groups and obtain the result from them. By tasks such as problem solving, color puzzle, ring arrangement by size.

RESULT: from the above methods and analysis the result from both groups were obtained and compared to each other and we found that TBI patients responded very positively to VR treatment that children children gained their cognitive function more faster than that of other groups and they started responding to the simulations and doing their task much faster and with better organizing capabilities

CONCLUSION: There fore this review has shown that VR is an intervention therapy technique that is much helpful in clinical rehabilitation practice for TBI and they use advanced technologies that can cause general changes in cognitive and psychological aspects with lesser cyber sickness and create a simulated environment for better restore of these function

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