

Social Communication Outcomes in Children and Adolescents with Traumatic Brain Injury: A Systematic Review

Danielle Campion, Sophie Bowen, Marie Payne

Division of Speech and Hearing Sciences, The University of North Carolina at Chapel Hill

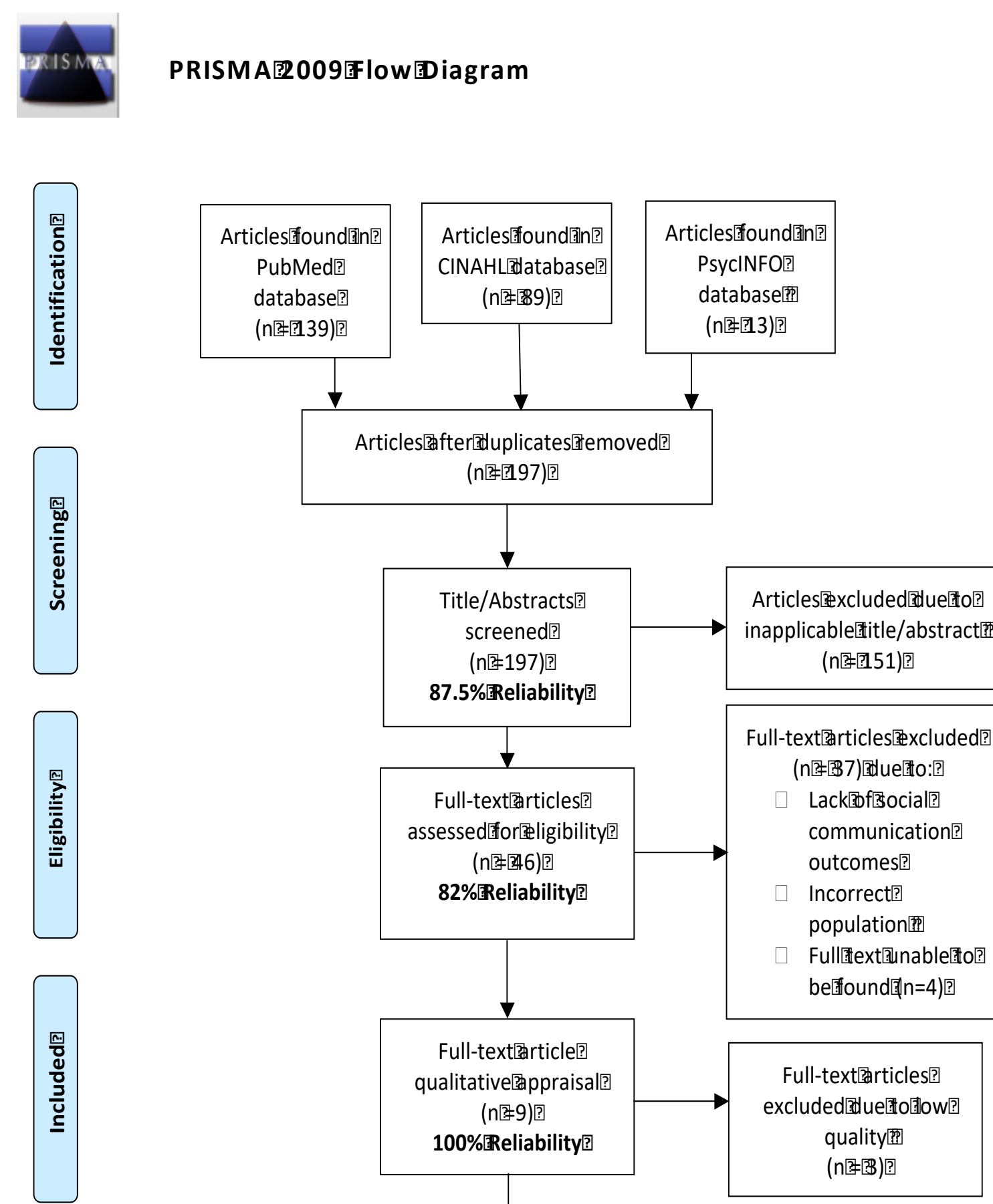
Background

There is a large amount of research on the impact of Traumatic Brain Injury (TBI) on cognitive communication in children and adolescents. However, the impact of traumatic brain injury on social communication in this population has been less explored. The authors of this systematic review aimed to synthesize and understand the existing research on TBI in children and adolescents surrounding the impacts of social communication.

Purpose

What are the characteristics of social communication in children and adolescents with Traumatic Brain Injury?

Methods



Databases searched:

- PubMed, CINAHL, PsycINFO

Search Terms:

- Child, children, toddlers, infants, adolescents, youth, toddler
- Traumatic Brain Injury, TBI, concussion
- Social skills, social language, pragmatics, pragmatic, social cognition, social awareness, social communication

Inclusion criteria: Children and adolescents (0-21), mild, moderate, and severe TBI, concussion, English speaking participants, studies with and without control populations, retrospective studies, and prospective studies

Exclusion criteria: Adults with injury during childhood, Autism, developmental disabilities, hearing loss, congenital brain malformations, strokes, studies about theory of mind, or problem solving skills

Results

Author/Year	Participant #	Effect Size/P-value	Outcomes
Sonnenberg, et.al. 2010	<4 years at injury: 61 >4 years at injury: 32	Social: p= 0.042 Cognitive: p=0.006	- Younger preschoolers: significantly lower social outcomes and cognitive abilities. - 80% of mod-severe TBI: high risk for social problems.
Anderson, et.al. 2017	TD: 39 Mild TBI: 38 Mod TBI: 27 Severe TBI: 9	Relationship of younger age at injury and social impairment d= 0.608 (large)	- All with TBI: reduced social adjustment / Mod-severe TBI: reduced social participation. - Social adjustment and social cognition predicted by younger age at injury. - Younger age at injury associated with social impairment.
Turkstra, et.al. 2001	TD: 60 Mod/Severe TBI: 10	Emotion recognition p=.00 Identification of social conversation skills p=.00	- Adolescents with TBI greater errors in emotion recognition compared to TD adolescents. - Different error types on identification of social conversation skills compared to TD adolescents.
Anderson, et.al. 2013	TD: 43 Mild TBI: 60 Mod/Severe TBI: 33	Social participation p=.031 R² =.01 (small) Pragmatic language and severe TBI p<.001 R² =.11 (small)	- Significantly reduced social participation in children with mod-severe TBI compared to TD and mild TBI children 6-months post TBI. - More severe TBI associated with poorer pragmatic language compared to TD children.
Turkstra, et.al 2008	Mild TBI: 1 Severe TBI: 8 TD: 9	p < 0.001 that the Pragmatic Judgement test correctly predicted groups.	- Adolescents with TBI were significantly less able than TD peers to generate appropriate pragmatic communication skills.
Ryan, et.al 2015	Age at TBI (childhood): Middle: 41 Late: 39 Adolescence: 32	Middle childhood: d = .84 & .72 (large) Late childhood d = .18 & .17 (small) Adolescence d= .69 & .21 (large, medium)	- Late childhood and adolescence had comparable pragmatic communication to TD controls by 24 months post TBI. - Middle childhood had significantly lower pragmatic communication than TD controls at 6 and 24 months post TBI.

Results Continued

- These studies yielded different results due to various research questions surrounding social communication in children and adolescents with TBI.
- Social communication encompasses many different aspects (i.e.: social participation, pragmatic language, emotion recognition, social conversational skills).
- All six articles that were appraised for quality with data extraction were determined to be of high quality.

The synthesis of these studies suggests that younger age at injury and injury severity correlate with significant impacts on social communication.

Discussion

Initially, the authors expected there would be more focused outcomes on social communication in the pediatric TBI population. There is no standardized assessment tool that measures social communication in children with Traumatic Brain Injury. Many of the articles stated this as a limitation. There is also a necessity for more longitudinal and follow-up studies in order to fully understand the long-term and overall impacts of TBI on social communication in children and adolescents. While there is a need for future research and more clearly stated social communication outcomes, the results of this systematic review are clinically significant due to indications that there is a correlation between social communication deficits and traumatic brain injury in this population.

References

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