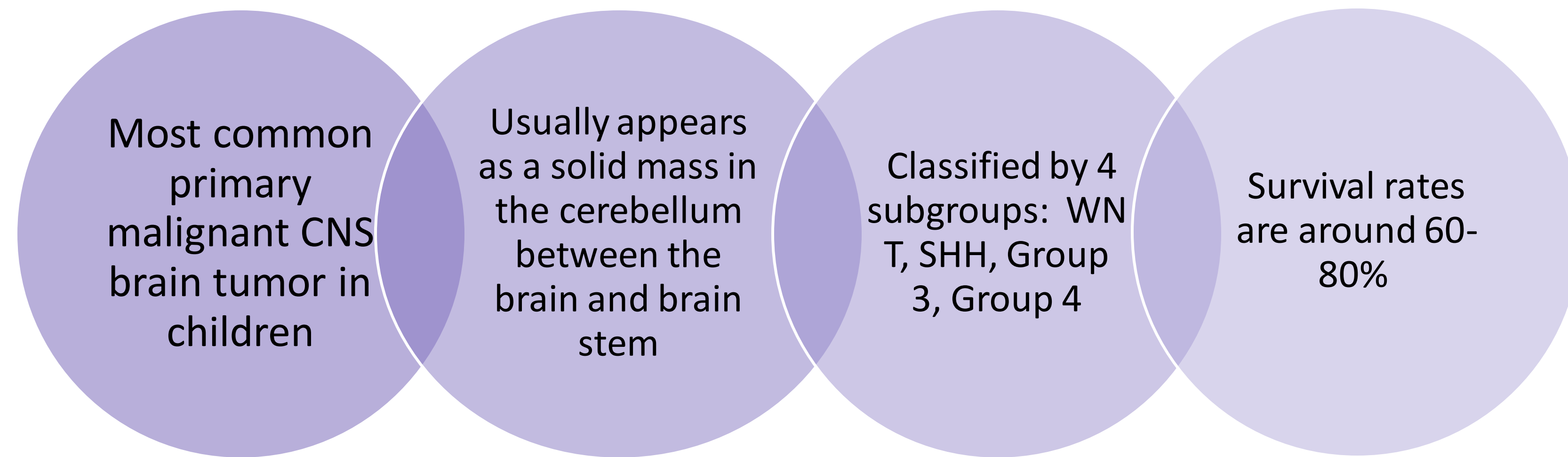


# Long-Term Functional Effects of Medulloblastoma Treatments

Serena Khiantani, MOT/S; Pamela Ponce, MOT/S; Bailey Diprima, MOT/S; Sarika Maymoundok, MOT/S; Leah Murray, MOT/S  
 Faculty Advisor: Anita Witt Mitchell, PHD, OTR, FAOTA Community Practitioner: Heather Clabo, OTR/L  
 University of Tennessee Health Science Center

## WHAT IS MEDULLOBLASTOMA?



## BACKGROUND & RATIONALE

- Increased survival rates due to advances in treatment
- Survivors are at risk for lasting effects that may impact everyday functional performance and quality of life
- Knowledge of long-term effects could guide client/caregiver education and preventative approaches in occupational therapy

## PICO QUESTION & ELEMENTS

In children ages 4-18, what are the long-term functional effects of medulloblastoma treatments?

PICO QUESTION	EXAMPLE SEARCH TERMS USED
Population: Children ages 4-18 years old	Child, youth, adolescent, teen, preschool, medulloblastoma
Intervention: Medulloblastoma treatment	Treatment, radiation, surgery, chemotherapy, tumor resection, procedure, medication, therapy
Outcome: Functional deficits	Outcome, effect, consequence, result, product, reaction, functional

## SEARCH METHODOLOGY

### Databases:

- Scopus, Cochrane Library, CINAHL, PubMed, Ovid MEDLINE

### Inclusion Criteria

- Adult medulloblastoma survivors who received treatment between the ages 4-18
- Focused on functional effects and/or quality of life
- Explored effects that may connect to functional performance

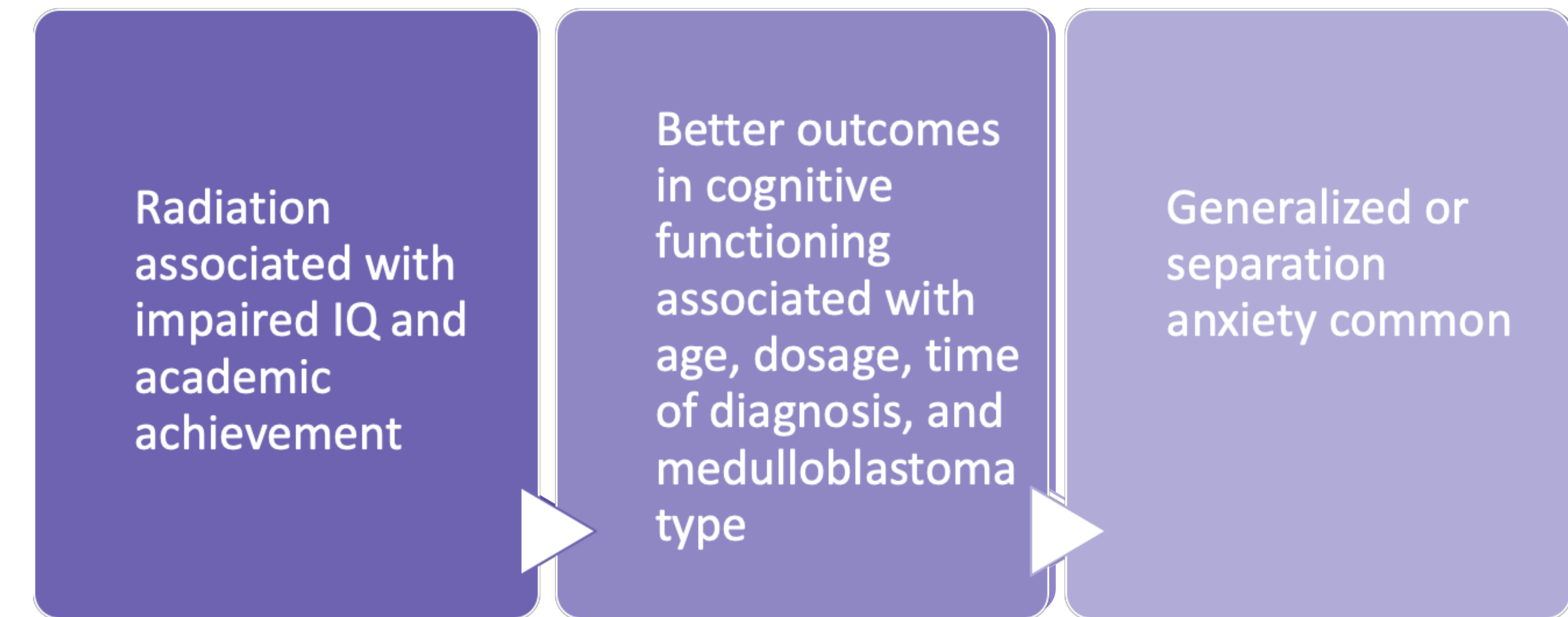
### Exclusion Criteria

- Clients developed secondary disease(s) as a result of the diagnosis and/or treatment received
- Published more than ten years ago
- Single case studies

## MAIN FINDINGS & LIMITATIONS

LEVEL OF EVIDENCE	STUDY AND QUALITY SCORE	MAIN FINDINGS	LIMITATIONS
II	• Moxon-Emre et al., 2016 Quality Score: 77%	<ul style="list-style-type: none"> <li>• Limiting radiation exposure produces ↑ intellectual outcomes (Moxon-Emre et al., 2016; Szentes et al., 2018)</li> <li>• ↓ in processing speed, attention, working memory, and verbal skills (Moxon-Emre et al., 2016; Szentes et al., 2018)</li> <li>• ↑ in generalized and separation anxiety (Szentes et al., 2018)</li> </ul>	<ul style="list-style-type: none"> <li>• Small sample</li> </ul>
	• Brinkman et al., 2016 Quality Score: 77%		
	• Szentes et al., 2018 Quality Score: 95%		
III	• Edelstein et al., 2011 Quality Score: 77%	<ul style="list-style-type: none"> <li>• ↓ in working memory regardless of age of treatment</li> <li>• Cognitive and physical signs of early aging regardless of age of diagnosis</li> <li>• Younger age of diagnosis associated with a ↓ in IQ and academic scores</li> </ul>	<ul style="list-style-type: none"> <li>• Small sample</li> <li>• Retrospective study</li> <li>• Only focuses on radiation treatment</li> </ul>
	• Kennedy et al., 2014 Quality Score: 86%		
IV	• Saury & Emanuelson, 2010 Quality Score: 90%	<ul style="list-style-type: none"> <li>• ↓ in cognition (e.g., executive function, attention capacity, processing speed)</li> </ul>	<ul style="list-style-type: none"> <li>• Not in the US</li> <li>• No true control</li> </ul>
	• Kennedy et al., 2014 Quality Score: 86%		

## CLINICAL BOTTOM LINES



## IMPLICATIONS FOR OT PRACTICE



## GOAL ATTAINMENT SCALE

Goal Attainment Scale	Criteria for Goal Attainment
+2	Engages in [active task] for ≥25 minutes
+1	Engages in [active task] for ≥15-20 minutes
0	Engages in [active task] for ≥10-15 minutes
-1	Engages in [active task] for ≥5-10 minutes
-2	Engages in [active task] for ≤5 minutes

\* See references for full version

## REFERENCES

