

# Prevalence of Pain and Its Association with Tumor Location and Physical Activity in Pediatric Brain Tumor Survivors: A Master's Thesis

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## Introduction

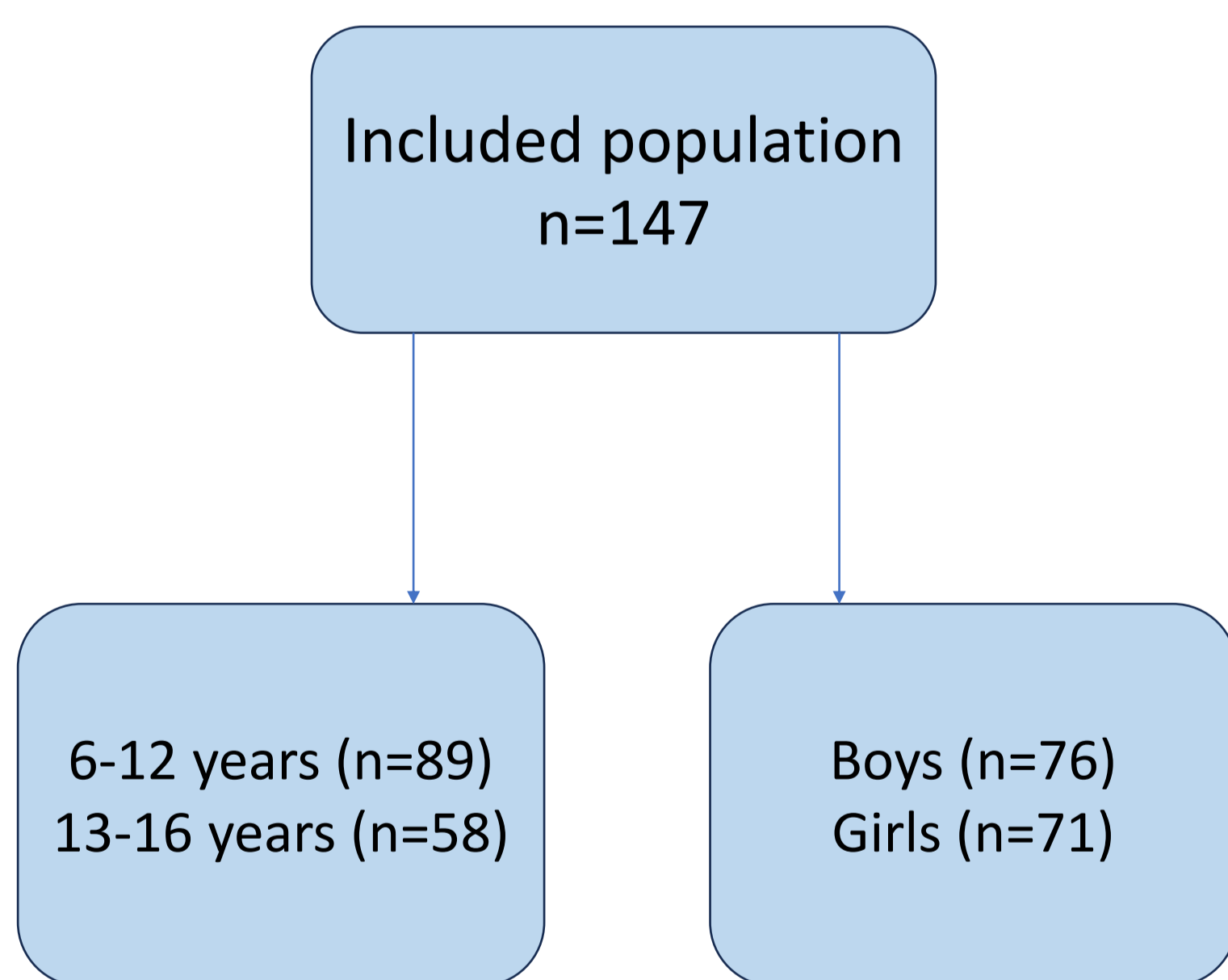
Children treated for brain tumors often experience long-term health challenges. Pain is a known late effect in pediatric oncology, but its prevalence and impact among pediatric brain tumor survivors are not well understood.

**This Master's thesis aims to investigate:**

- The prevalence of pain in children treated for brain tumors.
- Explore associations between pain, tumor location, physical activity and sedentary behavior.

## Methods

- **Design & sample:** Cross-sectional data from 147 participants aged 6–16 years who had completed treatment for brain tumors were included.
- **Data collection:** Data were collected using questionnaires assessing pain, physical activity and sedentary behavior.
- **Analysis:**
  - Descriptive statistics
  - Statistical tests: Fischers exact test, Mann-Whitney U, Spearman correlation



## Results

### Pain

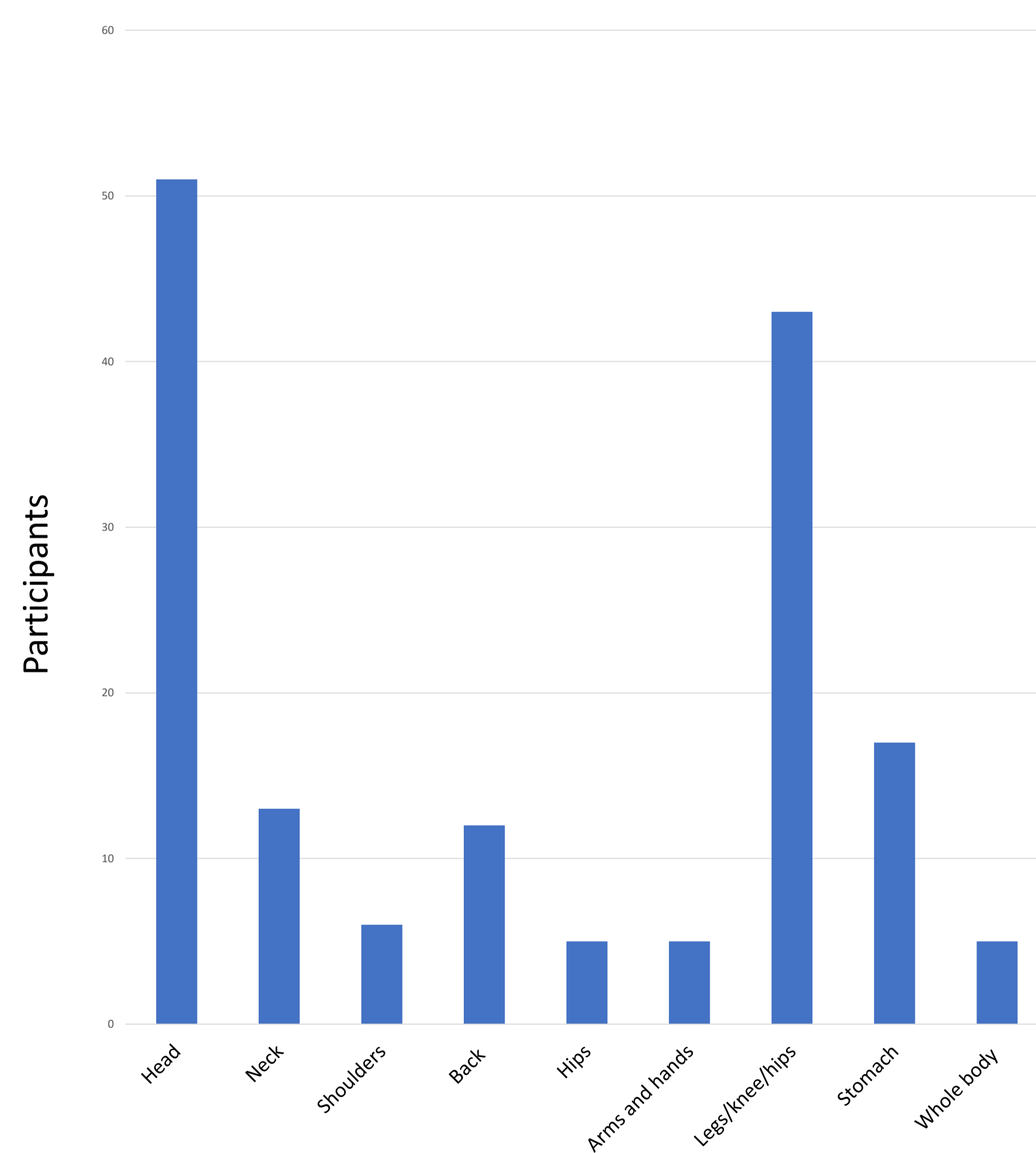
Approximately one-third of participants reported pain related to the disease or its treatment. Overall pain intensity and interference was low, with the head and lower extremities being the most commonly affected areas.

Pain, pain interference and pain intensity. N=144

	Yes n (%)	No n (%)	Low n (%)	High n (%)	Don't know n (%)	Md/min -max
Pain due to illness or treatment <sup>a</sup>	52 (36)	74 (51.5)			18 (12.5)	
Pain interference <sup>b</sup>		107 (75.5)	23 (16)	9 (6.5)		4.5/4-20
Pain intensity <sup>c**</sup>						2.16/0-8

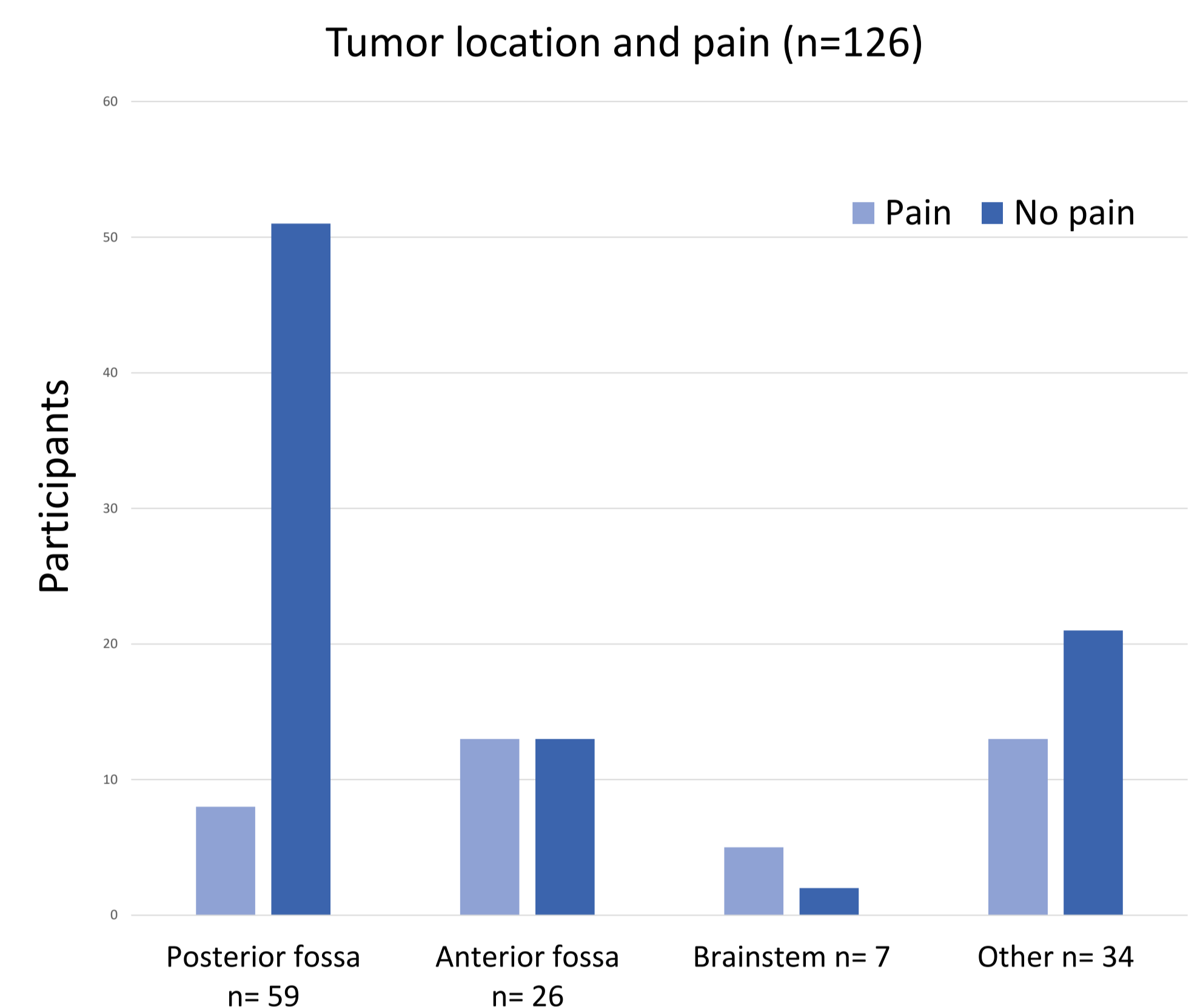
<sup>a</sup> Study-specific question on pain related to illness/treatment, <sup>b</sup> PROMIS min 4-max 20 points, <sup>c</sup> Numerical Rating scale 0-10, \* n=142, \*\* n=143

Pain by location (n=144)



### Pain and the difference between tumor location

Children with posterior fossa tumors reported less pain than other tumor locations  $p=.007$ .



### Pain interference in physical activity and sedentary behavior

Physical activity did not differ between children with and without pain interference ( $U=48.5$ ,  $p=.119$ ). Greater pain interference was linked to more sedentary behavior ( $U=684$ ,  $p<.001$ ).



## Conclusions

- **Pain levels varied between children**, but both pain intensity and pain interference were generally low.
- **Tumor location appeared to play a minor role** in the presence of pain, in contrast to other late effects where location is strongly associated with outcomes.
- **No differences in physical activity levels were found** between children with and without pain interference, likely due to the overall low pain levels.
- **Children with pain interference showed slightly higher sedentary behavior**, although the difference was small and likely not clinically significant.

In collaboration with

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FONDEN**



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