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# Hypothesis:

1. H-PSG FEASIBILITY
   1. H-PSG in NeuroDiverse or Epileptic children is as feasible as in Neurotypical children.
   2. H-PSG is preferred in all children groups (Epileptic, NeuroDiverse and Neurotypical).
2. H-PSG in NeuroDiverse Children
   1. ADHD suffer more from SD (OSAS, PLMs) than neurotypical children
   2. SD in early children develops more risk of ADHD
   3. Feasibility
   4. Quality
   5. Caregiver’s Satisfaction on H-PSG

# Methods:

SAMPLE

* Retrospective analysis
* N = 563 PSG -> 517 Unique children
* Ages 2-17 yo
* H-PSG: jan 2018 to feb 2022 (48 months - 4years)
* Referred: NeuroPed, PsychoPed, Ped, ENTSurgeons

Diagram

Description automatically generated

FACTOR/GRUPED VARIABLES

1. NeuroDiverse Children
   * A(H)DD
   * Learning disabilities
   * Neurotypical
2. NeuroTypical children
3. Epileptic
4. SAHS
5. PLMs

DEPENDENT VARIABLES

1. Feasibility (efficiency):
   1. % Failed studies
   2. % Epilepsy detection
2. Quality: > 5h hours of recording with adequate signal > 75%:
   1. SpO2Quality
   2. FlowQuality
   3. RIPQuality
   4. Global quality index
3. Satisfaction:
   1. Caregiver’s Satisfaction VAS
   2. Children’s Satisfaction VAS
   3. Caregiver’s preference for hospital study VAS
4. PSG\_Parameters:
   1. TST, Arousal index, Sleep efficiency, Sleep Latency, REM latency; awakeningsSleep Stages: %R, %N1, %N2, %N3
5. SD\_Diagnosis:
   1. OSAS\_Mild, OSAS\_Mod, OSAS\_Sev
   2. PLMs > 5/h
   3. Combined (OSAS + PLMs)
   4. Normal

DEMOGRAPHIC VARIABLES

1. Age
2. Sex
3. Heigh
4. Weight
5. Main symptoms: Snoring, Nigh-time awakenings, Daytime fatigue, Leg

jerks

DESCRIPTIVE ANALYSIS

1. Demographics
2. Factor characteristics

INFERENTIAL ANALYSIS

1. Differences in Feasibility, Quality, Satisfaction and PSG-Parameters among factors

*A one-way ANOVA with independent groups*

1. Differences in SD among factors

*A one-way ANOVA with independent groups*

1. Modified effect variables (age, gender?)
2. Associations between ADHA and SD

*Chi-Square of association*

# Limitations/ Comments:

* Critical Definition of factors/groups
* Quality for PML signal?
* Sample: #PSG ≠ #Children (Children studied several times)
* Sampling: sample selection bias:

1. population: 15% neurodiverse (85% neurotypical) vs sample of the study: ? NeuroKnowHow.com
   * ~8% of people in the UK are thought to have ADHD.
   * ~10% of people in the UK are thought to have dyslexia.
   * ~8% of people in the UK are thought to have dyspraxia.
   * ~6% of people in the UK are thought to have dyscalculia.
   * ~1% of people in the UK are thought to have an autistic spectrum condition.
   * ~1% of people in the UK are thought to have Tourette's syndrome.

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1. Gender differences population (3:1) vs sample

* Age of DX of neurodiverse condition (scholars ≥ 4yo to 17yo) vs age of the sample starting at 2yo subjects
* Reference PSG-Parametersand by age (<10yo vs > 10yo)

