Sleep problem in person with intellectual disability

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Objective

- To have an snapshot of sleeping behaviours in persons (age over 18 years old) with background history of intellectual disability.
- To explore the correlation of sleeping disturbance, behavioural problems, seizure and psychotropic medications.

Background

- Sleep disturbance -common concerns
- Prevalence varies from studies (15, 36 -80%)
- One study by Brylewski et al : 205 adults living in community :
- 27% settling problem
- 55.6% night waking
- 15% sleep related breathing problems

Background

- Is there any link between behavioural problems and sleeping disturbance?
- Studies in paediatric population with DD suggested possible association
- Similar association found in Brylewski and Wiggs' study of adults population with intellectual disability

Data collection

- Retrospective medical record review of adult clients in DSU
- Randomly selected adult clients
- Clients assessed at DSU from 2007 -2009
- Information mostly carer reported

Method

- Sleep is assessed routinely as part of the structured assessment
- Wide spectrum of sleep problems
  - Not settling into sleep at bedtime
  - Waking up at night disruptive
  - Early waking

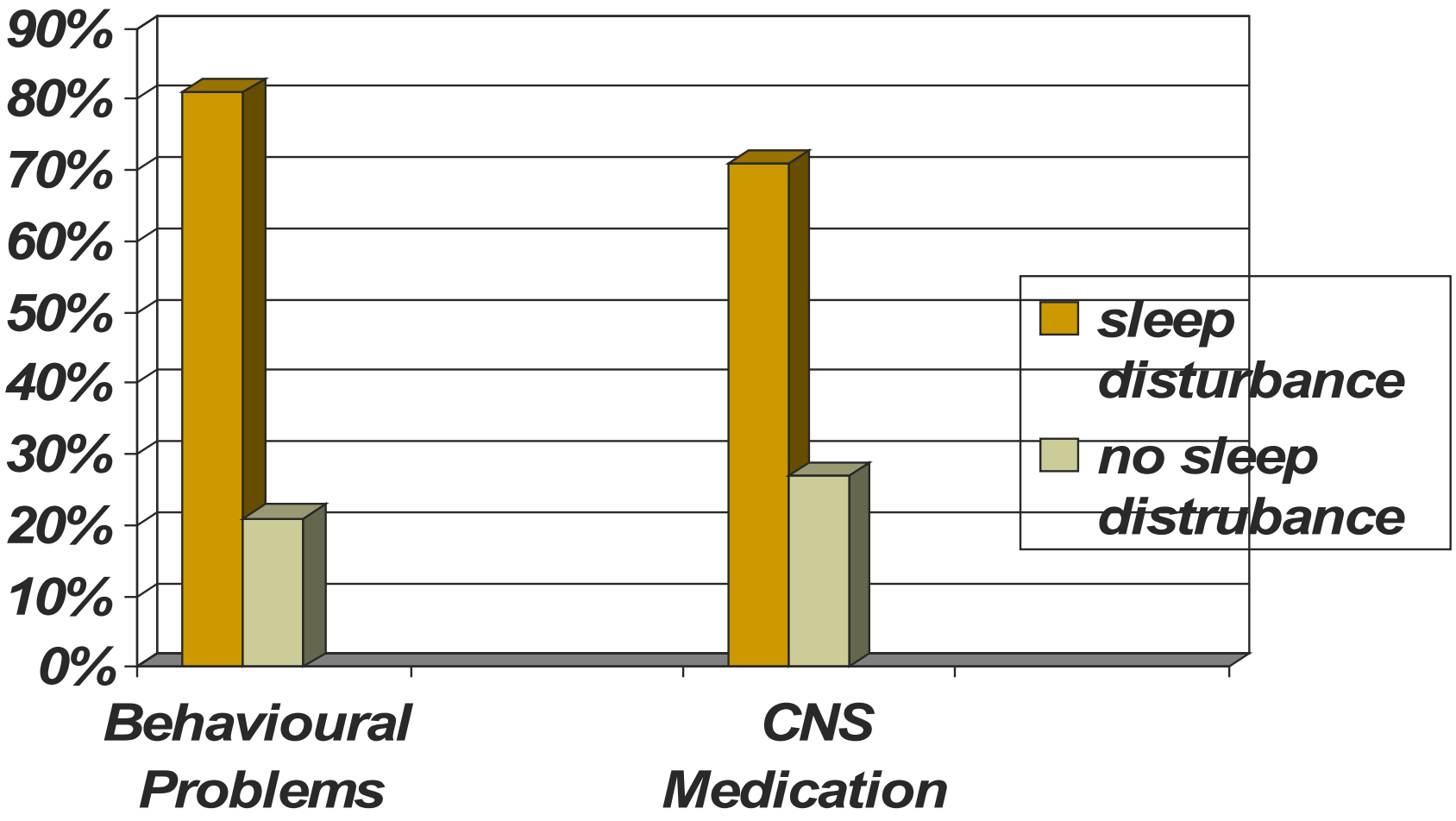
Method

- Demographics:
- Gender
- Mean age
- level of disability
- Lives in home
- psychotropic or CNS medication used
- Statistical analysis: Chi square and PRE (proportional reduction of error)measures

Results

Sleep problem	Yes	No
Number of clients	21	33
Male: female ratio	4:3	4: 3
Mean age	33.3	30.6
Moderate/severe level of disability	76%	85%
Lives in home	62%	36%
Epilepsy	52%	61%
Behavioural disturbance	81%	21%
psychotropic	71%	27%

Results


90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Behavioural Problems
CNS Medication
sleep disturbance
no sleep distrubance

Statistical analysis

- Statistical analysis for association between sleep problems and behaviors
  - $X^2$18.59,
  - P= 0.001
  - Odds ratio : 16
  - Cramer V :0.59
  - Lambda PRE measure :0.54

Statistical analysis

- Statistical analysis for association between sleep problems and taking CNS medications
  - X^2 : 10.16
  - P=0.005
  - Odds ration 6
  - Cramer V :0.43
  - Lambda PRE 0.38

Discussion

- Sleeping problems are infrequent complaints on the referral
- 30% in our cohort which is similar to other studies.
- Direct questioning of sleeping pattern and related problem is part of the clinical systemic injuries

Discussion

- The correlations between sleep problem and daytime behaviors and taking CNS medication are strong
- These finding of strong correlation is in keeping with previous studies on sleep and behaviors problem.

Discussion

- Most of the studies of sleeping problem are subjective, caregiver report –standardized questionnaire
- Few objective data
- Beth Malow's study using polysomnography combined with standardized questionnaire suggested that individual with ASD with problem sleep have prolong sleep latency and decreased sleep efficiency (Sleep 2006)
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Discussion

- A review by Kennedy (2002) found greater the level of intellectual disability, the less time spent in rapid eye movement sleep and total sleep duration.
- Greater level of undifferentiated sleep are found in individual with autism and in Down Syndrome
- Raised question of the patho-physiology of sleep problem may be the function of intellectual disability

Discussion

- Not able to demonstrate direct causal relationship
- The nature of the link remain unclear - problem sleep may contribute day time behavioral dysfunction or vice vercer or treatment of day time behavioral problem aggravate to nighttime sleep problem
- Adults with background history of intellectual disability on antidepressant medications were found to have less hour of sleep (Luiselli 2005)
- Evidences of specific treatment target problem sleep improve subsequently behaviors is eagerly awaited

Discussion

- Mindful of potential bias (i.e. reporting bias)
- But emphasis a common management issue which could impact on general health, behaviors , function and caregiver stress
- Some of the recommendation from our clinic review were referral to formal sleep study.

Case study

- Mr. GT. 36 years old man with mod level of intellectual disability, tubular sclerosis and features of autism
- Lives with aging parents with dysfunctional family dynamic
- Not participating day activities
- Referred for review for decline function and worsening aggressive behaviors to children and neighbors and general public especially certain ethnic group.
- Currently on Mood stabilizer and Rispeirdone

Case study

- Physical examination:
  - Mild hypertensive
  - Morbid obesity BMI >36.
  - Psychomotor slowness

Case study

Direct questioning his sleep pattern :

- Long standing loud snoring at night
- Had been diagnosed OAS
- Recommended CPAP previously and able to use during trial period
- Remains untreated due to cost of mask

Additional management plan

- Financial assistance
- Caregiver education
- Review of behavioral intervention
- Life style change –weight reduction

Case study

- Would be interesting to see any significant change in his day time behaviors and improve of function once he is back on CPAP treatment

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