Sleep Apnea and Intellectual Disability

Presenters:
Dr Colin Shapiro BSc, FRCP(C), MBBS, PhD
Judi Hoskins DSW, B.A. Psych

Nov 15, 2010

Sleep Apnea and Intellectual Disabilities: multidisciplinary assessment and intervention

Case Study 1 “Troy”: multidisciplinary assessment, treatment for sleep apnea
Case Study 2 “David”: multidisciplinary assessment, treatment for sleep apnea and comorbid DCD

© Jim Davis

Multidisciplinary Assessment and Intervention

Challenges - Overview

Case Study One
Symptoms
Rationale for Change
Interventions
Outcomes

Case Study Two
Symptoms
Rationale for change
Interventions
Outcomes
Summary
Challenges

- Both 49 year old males with moderate intellectual disabilities, anxiety
- Onset of sleep difficulties not well documented, reports not consistent
- Both have difficulty communicating feelings or physical symptoms
- Sleep disturbances undiagnosed until older adulthood

Challenges contd.

- Both have limited insight into own feelings and behaviour
- Differential Diagnosis quite challenging due to limitations in insight and communication
- Investigations had to include possibility of depression, anxiety and/or cognitive decline

Symptoms - Case Study 1

**Troy**

- wandering at night, reduced appetite, somatic complaints, irritability, reduced interest in activities, restlessness, distractibility
- other signs of increased anxiety including; moaning, searching when mom out of sight, restlessness during unstructured time, withdrawal from activities previously enjoyed, verbal aggression
Rationale for Change

Troy
- appeared to be in distress
- parent/primary caregiver reported significant distress using “Parenting Stress Index”
- medical causes for distress ruled out through investigation

Intervention

Troy
- multidisciplinary assessment identified Obstructive Sleep Apnea
- CPAP machine and medication
- relaxation and anger management programs
- prescribed melatonin and temazepam (benzodiazepine-muscle relaxant, sleep aid) in addition to CPAP machine

Intervention: compliance with CPAP machine

Troy
- tolerated well immediately
- family member using machine already
- progress monitored with two-week sleep diary pre- and post
Outcome Measures for “Troy”

- Less night waking and reduced wandering at night
- Improved overall mood, interest in activities, less restlessness throughout the day
- Improved tolerance for waiting, for unstructured time and for separation from parent
- Modest reduction in stress reported by caregivers
- Regained some independence in the community as distractibility reduced

Symptoms - Case Study 2

David

- Daytime sleepiness, difficulty staying awake during tasks, “getting stuck” on tasks, low mood, stomach upset, reduced motivation to work, physical discomfort
- Prompt dependent for task completion including personal hygiene
- Decline in ability to complete Activities of Daily Living (ADLs), time required to complete hygiene tasks gradually increased to 6 hours per day

Rationale for change

David

- Frequently missing out on activities for which he was preparing because either falling asleep or spending too long getting ready
- Expressed desire for change, set goals to live independently and get to work more often
Rationale for change

- Diagnosed with obstructive sleep apnea several years ago, treatment ongoing
- Problems with falling asleep, wandering at night and daytime sleepiness persisted
- Psychiatry and Psychology worked together for assessment. Cognitive decline and depression both ruled out as contributing factors in spite of significant decline in ADLs.

Hypothesis

- Environmental Changes (move and change in schedule) resulted in exaggeration of longstanding OCD symptoms. Reduction in prompts and natural cues from environment caused gradual erosion of skills.

Evidence:

- Longstanding pattern of staying up all night if given the opportunity.
- First reports of sleeping during the day, up all night following mother’s death approx. 25 years ago (withdrawal of prompts?)
- Concerns with excessive hygiene dating back 16 years, started medication for OCD in 2002.
- Symptoms reported as manageable until environmental changes: schedule at day program reduced and moved to own apartment within group home.

Mental Health Needs

Vulnerability Conditions:

Personality traits and features of the environment that place “David” at increased risk of challenging behaviours:

- Physical environment - absence of natural cues because he lives separately from the rest of the house, own washroom
- Social conditions - working relationship with each staff is unique therefore prompts vary, no time pressures from peers in using washroom, limited interaction with peers, limited natural cues
- Program conditions - preferred activities not always available, schedule is less predictable, limited structure
- Psychological conditions - ritualistic handwashing, OCD symptoms throughout routine, apparent erosion of daily living skills, dependent on cues/prompts to move through novel and familiar activities.
Intervention

Continue treatment of sleep apnea with CPAP and medication. Develop Behaviour Support Plan to make prompts more consistent and increase his awareness of passage of time.

Key elements:
• reintroduce natural cues to passage of time (provide meals at mealtime only, make room light at daylight, make craft room off limits at 11pm).
• provide prompts at regular intervals to assist him in completing hygiene tasks.

Intervention – cont’d.

• provide prompts while face-to-face (not from behind closed door)
• prompts should be very specific i.e. “time to dry your hands” not “come on, let’s go”.
• visual cues and supports
• positive reinforcement-recognition of progress, schedule includes meaningful activities each day

Intervention: compliance with CPAP machine

David

• required support initially, inconsistent bedtime and night time wandering interfered with compliance
• prescribed medications (hypnotic class-Zopiclone and CNS stimulant-Alertec) in addition to CPAP machine
Intervention

- Supervision by psychology is ongoing because this plan includes environmental controls. i.e. “David” is reminded of limit in place twice, he may exceed limit if he chooses to proceed after second prompt i.e. to continue handwashing when time timer indicates that five minutes have passed. Craft room is locked at 11pm, Staff assist “David” to open curtains and make bed once he’s up, discouraged from lying down in new lounge area during day.

- The rationale for including these controls is the client’s goal to get to work more often and the lack of insight he has into the impact of his behaviour on achieving this goal.

- Positive reinforcement for complying with limits is built into program.

Outcome Measures: Typical Day

<table>
<thead>
<tr>
<th>Pre Intervention</th>
<th>Post Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hygiene tasks = 6 hours</td>
<td>Hygiene tasks = 3.65 hours</td>
</tr>
<tr>
<td>Sitting on toilet = 1.8 hours (up to an hour at a time)</td>
<td>Sitting on toilet = 1.5 hours (30 mins. at a time) resulted in reduced physical symptoms.</td>
</tr>
<tr>
<td>Eating breakfast mid afternoon.</td>
<td>Breakfast foods not available after 11am; therefore developing some awareness that morning has passed.</td>
</tr>
<tr>
<td>Frequently missing work and other commitments.</td>
<td>Getting to work and other commitments most days.</td>
</tr>
<tr>
<td>Unaware of passage of time, reported time spent in washroom was “a few minutes”.</td>
<td>Eliminated 2-hour block of hygiene in afternoon, making time available for meaningful activities.</td>
</tr>
<tr>
<td>Percentage of prompts (53%) were vague and therefore ineffective.</td>
<td>Greater percentage of prompts were face to face and specific (72%), therefore more effective.</td>
</tr>
</tbody>
</table>

Additional Outcome Measures

- Score on ABDQ (Adaptive Behaviour Dementia Questionnaire) reduced from 88 at baseline to 55 (a score greater than 78 indicates the possibility of mild dementia)

- Time to complete hygiene tasks reduced

- Time spent sitting on toilet greatly reduced

- Physical symptoms reduced

- Improved attendance at activities; work, art class

- Behavioural indicators of frustration reduced

- Prompts more consistent, specific-unable to fade prompts to date
Summary

- Monitor sleep patterns when investigating cognitive decline
- Consider sleep study in multidisciplinary assessment of problem behaviour where there is also decline in ADLs
- Treatments vary and can be more effective when coordinated
- Recovery is a process

Thanks

With thanks to the individuals and families willing to share their experience in the hope of helping others

Resources/ References

- Dual Diagnosis, An Introduction to the Mental Health Needs of Person’s with Developmental Disabilities, (Dorothy Griffiths et al., NADD Press, 2002)
- Adaptive Behaviour Dementia Questionnaire (ABDQ) (Prasher et al., 2004)
- Parenting Stress Index (PSI) (Psychological Assessment Resources, updated May 30, 2003)