

SLEEP INTERVENTION FOR ADULTS WITH AUTISM SPECTRUM CONDITION

Haddy Quist and colleagues describe how psychoeducational group sessions helped service users in an inpatient unit achieve healthier sleeping and better daytime experiences

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Abstract

Aim The aim of this study was to determine the effectiveness of a psychoeducation sleep-hygiene group intervention for adults diagnosed with autism spectrum condition (ASC), without concurrent learning disability.

Method Fourteen male participants aged between 20 and 55 years attended a sleep group comprising six weekly, one-hour sessions. Baseline and outcome measures, using the Pittsburgh Insomnia Rating Scale 20 (PIRS 20) (Moul *et al* 2002), were used to assess significant sleep improvements and data were collated from a number of groups run from 2011-2013.

Results The group demonstrated beneficial self-reported outcomes for patients using the PIRS 20 assessment (Moul *et al* 2002), specifically in terms of the negative effect of poor sleep.

Conclusion People with ASC, without concurrent learning disability, can benefit from psychoeducation group intervention to reduce some of the negative effects of sleep difficulty.

Keywords
Autism spectrum disorders, high-functioning autism, insomnia, sleep interventions

SERVICE USERS in mental health settings often complain of insomnia, yet it is still poorly understood and managed (Espie *et al* 2007, de Niet *et al* 2009). Insomnia is recognised within the International Classification of Diseases edition (ICD-10) (World Health Organization 1992) and often coexists with psychiatric illness, in particular anxiety and mood disorders (Szelenberger and Soldatos 2005); half of chronic insomnia occurs in the context of a mental health disorder (Costa e Silva 2006).

Inpatient mental health nursing has an important role in supporting people to manage sleep problems, although evidence-based interventions are rarely used (de Niet *et al* 2009). Working with people who

experience insomnia can increase the challenges nurses face because poor sleep can lead to anxiety, depression, irritability, memory difficulties and reduced motivation.

In a study of adolescents with autism and Asperger syndrome, Baker *et al* (2013) reported that adolescents with high functioning autism were three times more likely to experience sleep problems compared with age-matched controls. Øyane and Bjorvatn (2005) highlight how low sleep efficiency, characterised by a shorter sleep duration and a long sleep time, affects people with autism spectrum condition (ASC). As a result, sleep disturbance may become normalised in adults with ASC and is therefore under-reported.



Incentives such as cinema tickets and trips were given as rewards for participants who completed sleep diaries regularly

Much of the evidence of sleep disturbance in people with ASC relates to children; it is thought to be linked to the common neuropsychiatric deficits in autism (Tani *et al* 2003). Sleep disturbance has also been linked to daytime cognitive and adaptive behavioural difficulties in children who have autism (Taylor *et al* 2012). Likewise, children with ASC and sleep problems experienced more internalising and externalising behaviour problems (Sikora *et al* 2012). A number of other theories of sleep disturbance have also been proposed: abnormal melatonin regulation (Guérolé *et al* 2011), biopsychosocial factors, such as social communication problems, biological problems and lack of routine (Richdale and Schreck 2009).

Executive dysfunction, such as planning, organisation and self-regulation, is a neurological feature of ASC (Hill 2004). It is therefore likely that adult ASC populations will have difficulty organising a healthy bedtime routine and may benefit from specific sleep education and sleep-hygiene strategies.

The National Institute for Health and Care Excellence (2004) recommends that before starting any medication for insomnia, non-medical treatments, such as cognitive behaviour therapy (CBT), relaxation and sleep-hygiene strategies, should be considered. In view of this a clinical need was recognised to address the sleep difficulties of adult patients referred to the National Autism Unit (NAU), an inpatient ward was set up specialising in the treatment of adults with ASC, without concurrent learning disability and/or comorbid mental health and behavioural difficulties.

Method

This article describes a six-week sleep psychoeducational group for patients admitted to the NAU. The sleep group was designed to equip participants with techniques and knowledge to develop a personal sleep-hygiene plan and to examine any effect of the intervention on improving participants' sleep. The group followed a standardised approach based on CBT-I literature (Espie 2006) and a manual was developed to ensure the consistency of the intervention.

Participants Participants were inpatients on a ward for people with ASC, without concurrent learning disability, with comorbid mental health

and behavioural problems. Diagnosis was verified using the Autism Diagnostic Interview-Revised (ADI-R) (Lord *et al* 1994) or the Autism Diagnostic Observation Schedule (ADOS) (Lord *et al* 1989). The inclusion criteria were by open invitation to the group and by referral of patients whom were judged to be experiencing sleep cycle dysfunction.

Fourteen participants attended at least three sessions of the group. Group sizes ranged between three and nine participants. Participants were male and aged between 20-55 years with a mean age of 28.16 years. All had estimated IQs above 70 with a mean of 95.2 (verbal IQ 99.27 mean and performance IQ 90.72 mean). Although not excluded from participating in the sleep education group, data from three participants were excluded from the final analysis. This was due to one patient presenting with active symptoms of psychosis, one patient who did not meet the criteria for an ASC and one diagnosed with sleep apnoea who was concurrently receiving an intensive nursing intervention using continuous positive airway pressure treatment.

Group procedure

Participants were provided with information about the group before it began and an information poster was placed in ward communal areas. The sleep group comprised six weekly one-hour sessions, which were developed based on best practice (Espie 2006). The programme included:

- Session plans for group facilitators.
- Easy-to-understand worksheets for participants.
- Homework tasks.
- In-session group activities.

At least one mental health nurse, occupational therapist or assistant psychologist facilitated the groups. At the beginning of each session

Box 1 Outline of the six sessions

The weekly sessions were as follows:

- Week 1: Introduction to the sleep cycle and why we need sleep
- Week 2: What is insomnia? Causes of sleep problems and consequences of sleep deprivation
- Week 3: How to improve your sleep, introducing sleep hygiene
- Week 4: Using cognitive approaches to manage unhelpful thoughts and managing anxiety through relaxation
- Week 5: Developing and reinforcing problem solving skills learned in previous weeks
- Week 6: Sleep hygiene strategies and relapse prevention – review of the course

participants were introduced to the theme of the week and given an outline of what would be covered (Box 1). During the sessions learning was reinforced by quizzes, group worksheets, group activities and homework tasks.

Knowledge and problem-solving skills during sessions were reinforced through group discussion using vignettes informed by typical patient experiences relating to sleep in an inpatient setting. Participants also completed homework sheets that aimed to measure the effectiveness of sleep-hygiene strategies during the fourth session. Sleep diaries and charts were used to show to participants any evidence of positive change in their sleep patterns.

To promote healthy sleeping and support the group, the following changes were made to the ward structure:

- A set bedtime routine including time for lights off in communal areas.
- The introduction and encouragement of consumption of decaffeinated drinks.
- Promote engagement in fitness activities during the day.
- To discourage daytime napping or keeping to no more than 15 minutes.
- Education of nurses about sleep and how they could contribute to a conducive environment to promote sleep.

Outcome measures

Outcome measures relating to sleep and engagement were collected at the start and on completion of the group intervention. These included the Pittsburgh Insomnia Rating Scale 20 (PIRS 20) (Moul *et al* 2002) and sleep charts, which were given to all participants and compared to self-report daily sleep diaries. Sleep diaries in poster form were completed by participants and were used to monitor their progress. Incentives such as cinema tickets and community trips were given as rewards for participants who completed sleep diaries regularly.

Results

T-tests were used to compare pre- and post-group means. Significant improvements were seen on the PIRS-20, $t=2.51$, $P<0.05$ and on follow-up measures of self-reported sleep distress $t=3.06$, $P<0.05$ (see Table 1 and Figure 1). A positive trend for increased sleep parameters (sleep onset, night awakenings) and sleep satisfaction approached significance. Only two participants had completed baseline and outcome measures for their self-report sleep diary wall posters and therefore these data were not included in the final results.

Table 1 Sleep group mean scores pre- and post-groups

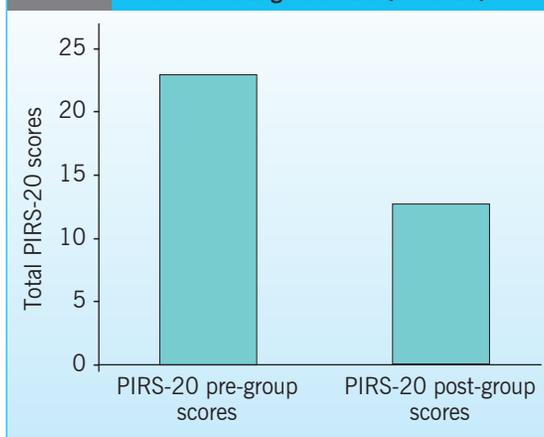
	Mean	Range
Pittsburgh Insomnia Rating Scale (PIRS) pre-group	22	51 (6-57)
PIRS post-group	13	28 (0-28)

Conclusion

The study reports the outcomes of a psycho-educational sleep group for people admitted to the NAU, a unit for people who have ASC, without concurrent learning disability, and/or behavioural difficulties. The study is the first to report the efficacy of group intervention for adults with ASC, without concurrent learning disability. The group demonstrated beneficial self-reported outcomes using the PIRS 20 assessment, specifically in reported sleep-related distress. This highlights that participants were less troubled by the effects of poor sleep following a range of everyday activities and experiences, such as being alert to achieve daily goals, being in a positive mood, overcoming daily difficulties and keeping thoughts focused.

The study is limited by its sample size and lack of any comparative sleep data for adults with ASC. Participants were also receiving ongoing inpatient psychosocial and pharmacological treatments and experiencing a range of comorbid mental health difficulties. The current study's strengths include the use of a protocol-based manual that can be easily applied and used for both group and individual interventions, which is cost effective in a range of settings. The study also shows that people with ASC can benefit from sleep-hygiene interventions, such as providing support to establish a regular bedtime routine and reducing

Figure 1 Group effect on mean Pittsburgh Insomnia Rating Scale 20 (PIRS-20)



lifestyle behaviours that are not conducive to sleep. It also enables them to re-appraise the difficult experiences associated with poor sleep and to manage the negative consequences that poor sleep may have on daily tasks. The authors believe that it is one of the first studies of adults with ASC, receiving group intervention for sleep in an inpatient setting that has been reported.

Despite increasing recognition that sleep difficulties associated with adults who have ASC exists, few studies have been completed that investigate the effects of psychosocial interventions. The preliminary evidence highlights that sleep intervention for adults with high functioning ASC is worthy of further research.

Implications for practice

- People with autism spectrum disorders can benefit from sleep-hygiene interventions
- Healthcare professionals can provide support to establish a regular bedtime routine by promoting good sleep hygiene practices
- Interventions aimed at reducing lifestyle behaviours that are not conducive to sleep need to be considered as a feature across autism spectrum condition and mental health services
- Providing a sleep group can reduce sleep-related stress and assist mental wellbeing

Online archive

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Conflict of interest

None declared

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