percentage accuracy was observed between the control and nap-opportunity groups ($p=0.31$).

Conclusions The main finding of this study was that the sleep-deprived group derive greater benefit in cognitive function from a 20-minute nap-opportunity. Future studies could investigate the relationship between the amount of sleep-deprivation and the magnitude of benefit derived from a nap-opportunity. Moreover, the impact of napping in individuals who are chronically sleep-deprived should also be explored.

P023 A SYSTEMATIC REVIEW AND META-ANALYSIS OF PHARMACOLOGICAL INTERVENTIONS FOR SLEEP PROBLEMS IN CHILDREN AND ADOLESCENTS WITH AUTISM SPECTRUM DISORDER

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Aim The aim of our systematic review and meta-analysis was to synthesise the high-quality evidence on the efficacy and safety of pharmacological interventions to manage sleep problems in children and adolescents with autism spectrum disorder (ASD).

Methods The studies we included here were (RCTs) looking at the efficacy and safety of pharmacological intervention for sleep problems in children and adolescents with ASD. The studies had to include objective sleep measures and/or subjective sleep measures. They all dealt with pharmacological interventions, with medications including melatonin and antipsychotics, and they all compared these drugs with placebo. We used four databases: ERIC, ProQuest, PubMed and Ovid Medline. We assessed the papers in accordance with the Cochrane risk of bias tool.

Results We found six studies that used RCT designs. Five of them used melatonin, and one study used an antipsychotic. In studies using melatonin, a meta-analysis revealed that there was a large effect size of using melatonin in reducing sleep latency in children and adolescents with ASD. The overall effect size was -0.87 (95% confidence interval [CI]) -1.11 , -0.63 , $Z=7.11$ ($P<0.00001$). In terms of antipsychotics, our review revealed that the antipsychotic risperidone was safe and effective in managing sleep problems in children and adolescents with ASD. Both melatonin and risperidone improved sleep latency and reduced night-time awakenings. However, mild side effects were reported in a small number of participants (figure 1).

Discussion Although the quality of the evidence in these studies was moderate according to the GRADE approach, both melatonin and risperidone seem to be safe and effective in improving sleep in children and adolescents with ASD. Some side effects have been observed in a small number of children. Observing and recording side effects is crucial to control medication doses.

P024 CHARACTERISING SCHOOL-AGE CHILDREN'S SLEEP IN SHAQRA PROVINCE, SAUDI ARABIA

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Introduction As no previous studies have characterised the sleep of school-age children in Shaqra Province, Saudi Arabia, the aim of the current research was to assess the frequency of behaviours associated with common paediatric sleep difficulties in this population using the Arabic version of the Children's Sleep Habits Questionnaire.

Methods The Children's Sleep Habits Questionnaire was used to measure self-reported and parent-reported bedtime resistance, sleep onset delay, sleep duration, sleep anxiety, night wakings, parasomnias, sleep disordered breathing and daytime sleepiness.³ Families were recruited through six schools and parents were asked to complete the questionnaire on behalf of children aged 7–12 years old, whereas adolescents completed the self-reported version.

Results 150 females and 139 males aged between 7–17 years old were recruited (see table 1). 92% of the children and adolescents had a score of 41 or above indicating that they have a clinically significant sleep problem (89% of males and 95% of females).

Results also indicated that there was a significant difference between males and females in secondary school in total score of CSHQ and sub score (sleep duration, sleep anxiety and sleep parasomnia). In addition, there was a significant difference between males and females in intermediate school in sub score of CSHQ in bedtime resistance, sleep anxiety and sleep disorder breathing (see table 2).

Discussion The current study highlights the high prevalence of clinically significant sleep problems in this population. The results are consistent with previous research which suggests that children from Saudi Arabia sleep less than children in other countries,¹ that males have longer sleep durations compared to females and that females report more daytime sleepiness compared to males.² The results suggest that increasing

Abstract P023 Figure 1 Meta-analysis of the efficacy of using melatonin in improving sleep latency in children and adolescents with ASD

Abstract P024 Table 1

Abstract P024 Table 2 Significant results in overall of CSHQ and sub scores

CSHQ sub score	School level	Gender	Mean	Std. Deviation	Sig
Bedtime resistance	Intermediate	Males	11	2	.000
		females	8	2	
Sleep duration	Secondary	Males	6	1	.000
		females	22	5	
Sleep anxiety	Intermediate	Males	5	1	.006
		females	7	2	
	Secondary	Males	5	1	.001
		females	6	2	
Parasomnia	Secondary	Males	9	2	.000
		females	10	2	
Sleep disorders breathing	Intermediate	Males	5	1	.000
		females	3	1	
Overall CSHQ	Secondary	Males	48	8	.000
		females	54	10	

awareness of the importance of sleep and how to develop healthy sleep habits would be beneficial in this population.

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P025

EMBEDDING PAEDIATRIC PPIE IN NON-INVASIVE VENTILATION INTERFACE DESIGN

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Introduction Non-invasive ventilation (NIV) masks that fit well are difficult to find for children who are small or have atypical facial features. Poorly fitted masks create problems e.g. discomfort, non-adherence and facial deformity. Our project aims to design and produce masks that fit well. Children's voices are vital, but not often heard, in respiratory research projects.

Integral to the research, we aimed to construct a patient and public involvement and engagement (PPIE) program designed to:

1. Understand the problems children and families experience with NIV and establish their wants and needs
2. Provide an inclusive and creative environment for non-constrained thinking
3. Get actionable feedback and ideas for improvements from a diverse patient group

Method We created a method focussed on planning, innovation and participation (the PIP model). Session activities were designed to enable parents and children of all ages and abilities to participate. Examples include:

- Archery target activity – a method for realising the relative importance of patient's requirement (prioritisation).
- Graphic scribe recording – to reflect back to the children that they had been heard/understood and stimulate creative ideas.
- Use of technology – making short videos to help families understand concepts.

Results

- Our priorities and design brief changed as a result of the PPIE.
- The graphic scribe outputs formed part of the creative process whilst providing a unique and lasting resource.
- We are confident that we will produce NIV interfaces that are fit for real life purpose that people will want to trial.

Discussion

- For respiratory research to be truly successful, PPIE should be woven throughout a project, from concept to completion.
- It needs to be genuine and aligned with research aims.
- Time and effort spent enabling participation and creatively planning for inclusivity is rewarded by generating richer and more valuable information.

P026

DO MATERNAL AND PATERNAL COGNITIONS AND SLEEP-RELATED PRACTICES RELATING TO THEIR OWN AND THEIR CHILD'S SLEEP PREDICT THEIR CHILD'S PARENTALLY REPORTED AND ACTIGRAPHICALLY ASSESSED SLEEP?

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Introduction Various factors have been linked to child sleeplessness problems (CSP). These include parental cognitions about child sleep and bedtime behaviours parents use with their child. However, previous research has predominantly focused on mothers and how both parents think and behave in relation to their own sleep and broader sleep-related practices may also be important. The current study aimed to explore whether maternal and paternal cognitions and sleep-related practices (relating to their own and their child's sleep) and bedtime behaviours used with their child predicted subjective and objectively assessed child sleep.

Method Mothers and fathers from 44 families (with a 12–24 month old child) completed questionnaires assessing their sleep-related cognitions and practices relating to their own and their child's sleep. Parent's provided details about their child's sleep (including if they perceived their child to have a CSP). Actigraphy and sleep diary data was collected on the child's sleep for 5 nights. Regression analyses were conducted to explore if parental cognitions and sleep-related practices (relating to their own and child's sleep) predicted perceptions of their child's sleep and the child's actual sleep.

Results Binary regression models predicting parental perception of a CSP, for both mothers and fathers, were significant. Specific and different bedtime behaviours used with their child were the only significant independent predictors of both maternal and paternal perceptions of a CSP. For mothers, use of physical comforting and for fathers settling by encouraging autonomy and using movement were significant predictors. A hierarchical linear regression to predict objective child sleep from maternal and paternal variables was not significant.

Discussion Use of different bedtime behaviours were related to mothers' and fathers' perceptions of CSP. Additional research is required to elucidate the reason for apparent differences between parents; perhaps mothers and fathers find different types of settling methods more acceptable or undesirable?

P027

THE EFFECTIVENESS OF OCCUPATION-BASED SLEEP PROGRAMME FOR PATIENT WITH INSOMNIA

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Sleep problems are a worldwide health issue, with an average prevalence rate ranging from 10% to 30%. The development of sleep intervention in occupational therapy is expanding, however, there is limited research evidence. Insomnia affects daytime occupational performance; and in return daytime occupational choice affects sleep. The Model