Abstract

Retrospective adherence data was collected from patients prior to remote monitoring.

Results Post establishment, initial data (3 patients) showed variable overnight adherence with mean use 38 minutes, 47 minutes and 7 hours 26 minutes respectively. Following the first phone contact with the parents, a personalized plan was agreed and arranged. The aim of each plan addressed issues such as adjusting/changing the mask interface, humidification and parental encouragement. Further scheduled contacts will occur on a personalized basis. Parents will receive a satisfaction questionnaire at the end of the monitoring period.

Discussion Remote monitoring technology has the potential to guide adjustments in NIPAPT therapy, monitor and improve adherence and reduce financial burden of hospital based review. Our preliminary work shows high uptake. We await results of the patient satisfaction questionnaire and cost breakdown following pilot study completion.

We developed a sensitive method to detect and quantify RMs using automatic 3D video analysis.

Method Children with RMD (n=6, 4 male) aged 5–14 years were studied for two nights in a sleep laboratory. A ceiling-mounted camera captured 3D depth images, while another recorded 2D video, from lights off until lights on. We developed algorithms to analyze the characteristics of RMs and built a classifier to distinguish rhythmic from non-rhythmic movements based on 3D video data alone. Data from 3D automated analysis were compared to manual 2D video annotations in 1.5s segments to assess algorithm performance [figure 1]. Novel indices were developed: the RM index, frequency index and duration index to better characterize RMD severity.

Result Automatic 3D analysis demonstrated high levels of agreement with the manual approach (Cohen’s Kappa >0.9; F1-score >0.9). We also demonstrated how RM assessment can be improved using plots of our novel indices for ease of visualization.

Conclusion 3D video technology is widely available and can be integrated into sleep laboratories. Our automatic 3D video analysis algorithm yields reliable quantitative measurement of RMs, reducing the burden of manual scoring. Furthermore, our novel RMD severity indices offer standardized measures of utility to clinical and research practice.

Abstract P034 Figure 1  RM time of night distribution plot. Each data point shows how many 1.5 s segments are classified as RMs per 3D minutes, combining data across subjects. Automatic 3D analysis and manual 2D annotations show high agreement.
Discussion A novel remote monitoring system implemented within NHS Lothian did not significantly increase patient CPAP compliance. Excess leak from the mask was significantly reduced however, suggesting that compliance may be affected in a study inclusive of a greater number of patients and over a greater period of time. Therefore, more highly powered studies are required to determine if remote monitoring in the treatment of OSAHS patients can help to improve patient compliance.

Introduction Narcolepsy is a disabling neurological sleep disorder characterised by excessive daytime sleepiness and attacks of muscle weakness precipitated by strong emotions, known as cataplexy. A previous exploratory technology workshop with children from the Sheffield Children’s Hospital narcolepsy clinic identified ‘Head and neck support in the car’ as their most important unmet need in terms of aids to daily living (32/39 participants). There is currently no suitable car seat or effective support on the market for these children. Therefore, this project aimed to design, develop and evaluate concepts for a neck stabilising aid for children with narcolepsy.

Methods Detailed ‘needs capture’ through a co-design workshop with children with narcolepsy and their parents to map and discuss their travel experiences resulted in an initial specification list. A second creative workshop for idea generation using existing products and early design concepts informed further development.

Results A detailed design specification list has been produced. Seven concept designs have been developed for further evaluation and selection at an upcoming ‘dragon’s den’-style workshop. Concepts will not reach prototype stage within the scope of the project so worksheets and interactive design activities will be used to capture early subjective user opinions.

Discussion The use of creative, co-design methods have proven effective in capturing the voices of children and families to ensure the project is generating meaningful solutions to the core issues in this area. The project is currently ongoing with a number of possible concepts being proposed and evaluated by children and families. The preliminary concepts and supporting evaluation data will be used to apply for future funding to develop the chosen concept to prototype level and beyond.

Introduction Patient organisations play a key role in providing patient support, whilst facilitating patient-centred and participatory medicine. The Sleep Apnoea Trust Association (SATA) commissioned a patient review of their website. The objectives of this project were to improve communication between SATA, their members and other patients with Obstructive Sleep Apnoea (OSA), and to invite members’ critique of SATA’s website.

Methods A mixed-methods questionnaire of 15-items including Likert scales, multiple-choice, open-ended, and demographic questions was designed to assess members’ needs and preferences for healthcare communication. The web-based questionnaire was informed by patients, their families and clinicians, and included a structured evaluation of website accessibility, readability, and information quality. 1,318 SATA members were invited by email to participate anonymously. Descriptive

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