

A WELCOME TO OUR NEW STUDENT EDITOR – AND THE BEST OF THE SUBMISSIONS

As we say goodbye to outgoing student editor Sophia Antoniou, this summer it has been my pleasure to assess some quite outstanding candidates for the next student editor. After a tough process, it is my absolute pleasure to introduce the new BDJ Student student editor, **Nicka Kafil**, from the University of Birmingham. You can read Nicka's winning entry – and three of the other outstanding submissions – here.

THE SILENT IMPACTS OF NOISE ON DENTISTS WITH AUTISM



By **Nicka Kafil**,
University of
Birmingham

From the beginning of dental training, students are taught the correlation between noise levels of the clinical environment and the patient's dental anxiety. The education on the impact of the biological responses on the body is imperative to appreciate the difficulties and discover methods to reduce the patient's emotional response. However, there is a deficit of focus on the effects for the dentist exposed to auditory stimuli for extended periods. Thus, limited arrangements for its alleviation – let alone dentists with autism spectrum disorder (ASD) otherwise known as neuroatypical individuals.¹

Neuroatypical people are faced with varying degrees of challenges with sensory stimuli. Hypersensitivity towards bright lights, loud noises, and overpowering smells evoke anxiety and stimulates a pain response. Studies show that autistic individuals' autonomic nervous system responds stronger to noise; therefore, this triggers a physiological response of anxiety that is less readily stimulated for neurotypical (without autism) individuals. A common co-morbidity of autism (ASD) is anxiety. Noise is an exacerbating factor; therefore, the dental environment can be overwhelming.²

Studies on dental students illustrate that acoustic exposure can hinder concentration and communication with the patient. The long-term effects - hypertension, sleep

disturbance and frequent migraines – correlate to excessive occupational noise.³ There are multiple auditory sources in a clinical setting: dental equipment, building facilities, human voices. However, the influence of the volume of dental equipment is more dominant on the long-term impacts on dental professionals.⁴

The diagnostic criterion for autism recognises that autistic individuals process the sensory environment differently from the neurotypical experience – therefore, despite the lack of research on ASD individuals in the dental environment, it can be understood that it can dramatically impact these individuals with ramifications.¹

In studies for neuroatypical people, median noise levels induce helplessness, increased arousal, restlessness, and decreased attention to the task. Many ASD individuals use the predominant approach of avoidance of environments with excessive sensory stimuli. Unfortunately, for many individuals, the acceptance of the overstimulation is required alongside attempts to regulate the overwhelming emotional distress as they are unable to withdraw from the occupational stimuli.⁵

The accumulation of the negative impacts reduces the quality of life - a catalyst for job dissatisfaction. Neurotypical dentists are prone to burnout due to chronic stress and the possibility of litigation. The addition of poor health due to occupation increases the risk of this development which is further exaggerated for ASD adults. Long periods of de-stimulation from the environment after working hours are necessary, which in turn impact personal life and mental health.⁶

Professor Millar of KCL institute designed a prototype that cancels out the dental drill noise for the patient whilst simultaneously hearing the dentist – the filtering of unwanted sounds would significantly improve the impact of the dental acoustics on the patient's bodily responses. This has been feasible due to extensive research on the patient's anxiety response.⁷

The outcomes for autistic adults are hugely dependent on the environments exposed to; thus, a model aimed for the user concurrent to the patient would be invaluable. For these advancements to be made, acknowledgement of the hardship ASD dentists face would provide opportunities for analysis and developments in technology as well as attitudes towards their wellbeing. Not only would this help autistic dentists but also improve the clinical experience for all members of the team.

References

1. Beardon L. *Autism and Asperger Syndrome in Adults*. 1st ed. John Murray Press, 2017.
2. Landon J, Shepherd D, Lodhia V. A qualitative study of noise sensitivity in adults with autism spectrum disorder. *Research in Autism Spectrum Disorders* 2016; **32**: 43-52.
3. Qsaibati M L, Ibrahim O. Noise levels of dental equipment used in dental college of Damascus University. *Dent Res J (Isfahan)* 2014; **11**: 624-630.
4. Ma K W, Wong H M, Mak C M. Dental Environmental Noise Evaluation and Health Risk Model Construction to Dental Professionals. *Int J Environ Res Public Health* 2017; **14**: 1084.
5. Landon J, Shepherd D and Lodhia V. A qualitative study of noise sensitivity in adults with autism spectrum disorder. *Research in Autism Spectrum Disorders* 2016; **32**: 43-52.
6. Dwivedi A, Purohit B. Is Dentistry Turning Into Weary Profession? Dimensionality of Experienced Professional Burnout among Dentists in Central India. *Dentistry* 2016; **6**.
7. News release. Dental drill to be drowned out. *Br Dent J* 2011; **210**: 103.