

Increasing the tolerance of wearing headphones to engage environments which are considered to be aversive

Tram House 5

ABSTRACT: It has long been understood that autistic individuals demonstrate differences in sensory responsivity and 'the central significance of sensory symptoms in ASD has been increasingly recognized' (Hazen et al, 2014) For the pupil in this study, loud environments can be setting events for self-injurious and aggressive behaviour. Learning skills to be able to manage such environments are therefore very significant for his access to learning and quality of life. The pupil in this case study had previously refused to wear ear defenders, so this study looks at how staff supported him to tolerate wearing headphones by using them with his favourite videos and songs.

The pupil is 15 years old. He is a fluent signer and communicates primarily in this way. When requesting for most preferred items and activities, his signs are accompanied by vocal approximations. The pupil attends a year 11 class and is an advanced learner. He is working towards gaining more independence in his daily living skills and managing his sensory needs to give him access to more learning opportunities in a social environment. He cannot verbally communicate to staff that he struggles with noise, but he frequently covers his ears with his hands, struggles to engage with his work and demonstrates tension in his body language when the environment is noisy. He can be too overwhelmed by loud environments to transition to a quieter space and these situations can be setting events for him engaging in behaviours that challenge, including self-injurious behaviours and aggression towards others.

The pupil's programme relates to his sensory needs by aiming to build his ability to cope in loud and overwhelming spaces. If the pupil can learn skills to help him manage his sensitivity to noise, he can be better supported in his studies, social interactions, and in his life within the community. The aim of this study is to show how this aspect of his programme has benefitted him in his daily living.

Literature Review

It has been found that in children with hypersensitivity to sound, 'background noise was associated with increases in escape-maintained problem behaviour and increases in pain behaviour such as clapping ears and crying' (O'Reilly, Lacey and Lancioni, 2000). O'Reilly et al's study examines the implications of environments with no-noise; with noise; and with noise where the subject had been wearing ear plugs. They observe that 'little behaviour

that challenge was observed during the functional assessment under the no-noise condition', but under the conditions of a noisy environment, the subject's tolerance of demands was lowered and there was an increase in behaviours that challenge. When the subject was fitted with ear plugs, behaviours that challenge were 'substantially reduced' (O'Reilly et al, 2000). This research has contributed to our approach in two major ways. For one, it observes a relationship between loud environments and an increase in behaviours that challenge in those with hypersensitivity to sound. Second, it shows a decrease in behaviours that challenge when the subject within the loud environment is wearing earplugs.

Method

The pupil has 1:1 tuition in school, each session lasting approximately 15 minutes. His target to tolerate wearing headphones was started in Autumn 2021 and began with him tolerating wearing headphones for a very short time (10 seconds) whilst listening to preferred music. As they had not used an MP3 player before but was familiar with the computer, he began by using the headphones when on the computer watching his favourite videos. His tutors would begin the session by asking him what he wanted to watch on the computer. When he had chosen a video and his tutors had assessed that he was motivated by it, they would plug in the headphones so that to access the sound, and he would need to wear the headphones to access the sound. When he was able to tolerate the headphones for 10 seconds, the target amount of time was increased. His staff then introduced an MP3 player so that the pupil was able to wear headphones without needing a screen. His favourite music was put onto the MP3 player and again a low time target (30 seconds) was introduced initially, before increasing once he had achieved the previous time. He has also worked on using the MP3 player when transitioning round school.

Results

There has been clear progression for the pupil, who previously had refused to wear ear defenders to help him reduce the impact of noise in his environment. He was able to wear the headphones for 10 minutes at the computer by the end of the Autumn term. He can currently wear the headphones with his MP3 player for 2 minutes and uses them for transitions round school, which historically have been difficult for him. His MP3 player and headphones are now a motivating item and he will request them by signing 'music'. The next step for him is to have the MP3 player and headphones available in the community. He is also working on signing 'worried' when he appears anxious about noise in his environment (for example if he is putting his hands over his ears or raising his

shoulders to his ears). His staff team will then teach him to chain these behaviours together, so that he can sign 'worried', and be prompted to request his headphones or to retrieve them independently from his bag.

Discussion and conclusion

The pupil's tolerance of headphones and his communicating to staff around him have widened the repertoire of skills he can engage in to help him manage loud environments. This will be socially significant in many ways as community spaces such as shops, public transport and hospitals can all be noisy at times.

These environments will also be paired with the preferred music and videos to make it more a comfortable for him to be in these spaces. Using an MP3 player is an age appropriate and functional behaviour that also has the benefit of functioning as a leisure skill for him.

Figure 1 shows the steps that were used to build tolerance. The steps were broken down into amounts of time that were appropriate and achievable for him. Since using music and videos to help with tolerating headphones, his behaviours that challenge have decreased and he is now starting to spend increased amount of time in his classroom with his peers, going into busy areas of the school and engaging in more group activities.

References

Hazen, E.P. (2014). 'Sensory Symptoms in Autism Spectrum Disorders' Harvard Review of Psychiatry: March/April 2014 - Volume 22 - Issue 2 - p 112-124

O'Reilly, M.F., Lancioni, G.E. 'Assessment of the Influence of Background Noise on Escape-Maintained Problem Behavior and Pain Behavior in a Child with Williams Syndrome', Journal of Applied Behavior Analysis, vol 33, p 511

Target Skill	Date Introduced/Known	Date Mastered
10 seconds computer	01.10.2021	November 2021
10 minutes computer	01.10.2021	Dec-21
30 seconds on MP3 player	31.01.2022	25.03.22
2m MP3 player	28.4.22	12.5.22
Using MP3 on 5 minutes transitions	12.5.22	25.5.22
Using mp3 on transition outside of school	25.5.22	

Figure 1. Breakdown of steps taught for this target