

## Reducing self-injurious behaviours in a school setting

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### Executive summary

Behaviours that may challenge not only impact the individual who displays them but as well as family and carers. This case study is about a 9-year-old with autism spectrum disorder (ASD) who displays self-injurious behaviour of biting their finger. With analysis of their data and implementation of an invention designed by a multidisciplinary team the reduction in SIB was effective. Additionally, by enriching the pupil's environment, working on a total communication system and increasing their skills, this effective may have served a contributing factor in the success.

### Introduction

Individuals with autism can often engage in various forms of self-injurious behaviours. This was the case with a 9-year-old boy with autism who engages in self-injurious behaviour of biting their fingers. The pupil is attending an Applied Behavioural Analysis (ABA) / Verbal Behaviour (VB) school wherein he receives 1:1 therapy.

A baseline assessment was completed within the first six weeks of the pupil starting school. The Independent Framework is an assessment which establishes a list of skills to encourage the independence of individuals both within group and during 1:1 sessions. The sections are divided into 7 levels ranging from; level 0, the barriers level; level 1 the pre-requisites; levels 2 – 5 are built upon and the individual support is faded off; and level 6 which is the transition level (BeyondAutism, 2020). The results for the pupil demonstrated they displayed a low tolerance when someone is crying or making loud noises. The pupil had some imitation skills, listener responding (receptive) and requesting (mand) but they were limited. He demonstrates an absent repertoire in the following skills: social, matching, and labelling (tact). He can emit severe behaviours that may be in danger to

themselves such as hitting self, biting their fingers and this can be up to 25% of their day. Therefore, the pupil scored high in the barriers and is working towards skills in the pre-requisite section.

Subsequently, during the six-week baseline assessment data was collected for the total frequencies of finger biting in order to establish a pattern of the target behaviour (Kennedy, 2005).

### Method

Iwata et al. (1994), suggest that individuals with autism engage in SIB to escape, avoid a task or to gain access to attention or a tangible. Additionally, Iwata et al. (1994) conducted 152 single-subject analyses for the functions of self-injurious behaviours. The analyses demonstrated 38.1% of SIB was maintained by socially negative reinforcement (escape from demands), 26.3% for attention or gain access to a tangible (food, object etc.) and 25.7% was maintained automatic reinforcement (Iwata et al., 1994, p.230). For the purpose of this case study the focus will be on implementing an intervention to help reduce SIB. Therefore, completing antecedent, behaviour and consequence data on the pupil's behaviours that may challenge contributed towards the effectiveness of the reduction of self-injurious behaviours.

The staff working with the pupil collected the ABC data. All members of staff received training from their ABA Supervisor. The frequency finger biting was defined as the following: biting their left or right index finger with their teeth, regardless of leaving an immediate mark. The frequency of finger biting within a 4 second period is considered one episode of biting, however, any finger biting with more than a 5 second interval is considered a separate episode of finger biting. Due to high frequency of finger biting total frequencies of the target behaviour were collected using a clicker.

### Results

The use of antecedent manipulations will be implemented in order to decrease the value of escape and demand related behaviours. The focus during natural environment teaching was to increase the pupil's communication through the use of Makaton Sign Language and Objects of Reference. Shaping and prompt fading procedures were implemented to increase more independent responses. However, it should be noted the prompts were only able to fade to partial prompts. In addition, fading in the number of demands, fading in the effort and difficulty of tasks, immediately delivering reinforcement, pace instruction were applied (Carbone, Morgenstern, Zecchin-Tirri & Kolberg 2010).

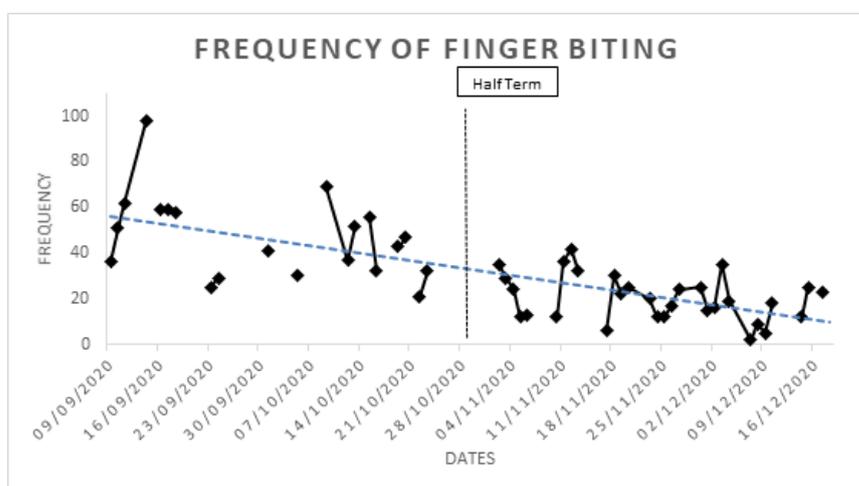
DRA: Differential reinforcement of alternative (appropriate) behaviours was implemented. All desirable on task behaviours such as complying with instructional demands, (i.e. imitation, receptive instructions in context) was differentially reinforced. When the pupil complied (the absence finger biting) he received a higher magnitude or longer duration of reinforcement. Nevertheless, when the pupil displays finger biting the pupil was offered a chewy.

Escape Extinction: When the pupil engaged in escape or demand avoided their tutors maintained the demand by using a neutral but firm voice every 2-3 seconds and physical guidance (i.e. prompts), if necessary to obtain compliance. Whilst engaging in task avoidant behaviour the pupil was denied any access to reinforcement. Once the tutor was able to gain instructional control (this includes between 2 to 3 on task demands) differential reinforcement was delivered to the pupil.

The data was collected during the autumn term. Figure 1 demonstrates there's on average of 48.52 finger bites per school day prior to the intervention. The highest frequency being 98 within the first week of school and lowest of 25 on the 8th data point (Figure 1). Subsequent the implementation of the intervention the frequency of finger bites were between 42 and 2 demonstrating a lower average of 20.68. The intervention has resulted in a 41.67% reduction in SIB. Consequently, this proves the effectiveness of the intervention, by increasing skills, implementing a DRA, escape extinction and by offering the chewy. The trend line demonstrates an overall steady decline in the SIB exhibited by the pupil.

The reinforcement-based interventions have determined to be effective in reducing finger biting with the pupil. The findings in this study case are consistent with previous work that demonstrates reduction of SIB without the use of punishment (Iwata 1994; McCord and Thompson, 2001).

**Figure 1**



## Discussion

In summary, this case study demonstrates by collecting effective data it aids with creating a relevant intervention to reduce self-injurious behaviours. Although the cases of SIB have not completely diminished there is clearly a significant reduction since beginning school. The pupil would benefit from further intervention as callouses remain evident on their fingers, which would cause permanent damage. Further, it may be beneficial to conduct a functional analysis, as it would permit for better understanding of functions that are maintaining this SIB. Nonetheless, this current case study proves implementing interventions created by a multidisciplinary team (offering a chewy) and whilst using reinforcement for alternative behaviours can help reduce SIB.

## References

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