

BRIEF REPORT: Interventions for Inappropriate Handling of Feces in Adults with Autism Spectrum Disorders

Abstract

Among the behaviours that professionals in the field of Autism Spectrum Disorder (ASD) are faced with, has been how some of the individuals deal with feces. A Functional Behavioural Assessment (FBA) was employed to identify the function of maladaptive behaviours related to feces. The results of the FBA concluded that the factors influencing the behaviours varied for each participant in the study. Individualized behaviour modification programs were developed to introduce functional replacement behaviours in each domain. The results of this study indicate that the frequency of behaviours can be decreased when interventions are developed, targeting the specific variables maintaining behaviour.

There is extensive evidence on the presence of comorbidity in individuals with developmental disabilities. In a study by Brahm, Farmer & Brown (2007), comorbidity was as much as four to five times higher in the group with disabilities than in the population at large. Such disorders as depression, schizophrenia and attention deficit-hyperactivity disorder are particular cases in point. While there is extensive research pertaining to a variety of these and other challenging behaviours amongst persons diagnosed with developmental delay (DD) and ASD, one particularly challenging issue, the inappropriate use of fecal matter, appears to have been largely neglected (Brahm, Buswell, Brahm, & Brown, 2004).

The prevalence of inappropriate behaviours related to fecal matter in individuals with DD and ASD is unknown. However, behaviours such as scatolia (fecal smearing), pica (the ingestion of inedible substances, including feces) and anal poking are known to be present in many of the individuals with a diagnosis of ASD. A review of the literature suggests that, surprisingly, much of the research on this subject has dealt solely with persons diagnosed with dementia. (Nagaratnam, Lim, & Hutyn, 2001).

Feces-related inappropriate behaviours, by their very nature, represent a severe burden for front line staff, families and other caregivers. They also reduce interest in social interaction with the individual displaying the behaviour on the part of significant people in the individuals' lives. Despite the obvious significance of the issue, the subject of feces is one that we often shy away from, not only in discussions but also in researching its possible genesis and elimination likely

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because by its very nature it is an uncomfortable topic for discussion (Ata et al., 2010). Yet, this is clearly an area where more research is warranted. We need to systematically examine the prevalence, predisposing factors, maintaining variables, and most effective strategies for reducing these behaviours. There are many health risks associated with the misuse of fecal matter. In residential settings where many unrelated adults with developmental disabilities may reside, the potential for fecal contamination is of utmost concern. The behaviour can be especially problematic as it may directly affect people who reside in the setting or indirectly affect others including front line staff who might touch contaminated furniture and objects (Rolider, Williams, Cummings, & Van Houten, 1991).

Objective

The aim of this study was to address: (a) gaining an insight into the function of inappropriate behaviours related to feces through the utilization of a Functional Behavioural Assessment (FBA) and (b) to obtain evidence on the effectiveness of different intervention strategies employed to decrease the occurrence of problem behaviours. We hypothesize that the use of individualized behaviour modification protocols, which target the specific factors contributing to the continued incidence of the behaviour, will aid in decreasing future rates of the behaviour.

Method

Participants

Three adult males, diagnosed with Autism Spectrum Disorder (ASD), participated in the study. All three had a long history of engaging in inappropriate behaviours related to feces. Participant 1 was 25 years old, was non-verbal, and presented with scatolia (fecal smearing) and pica. Participant 2 was 39 years old, was verbal and presented with anal poking and scatolia. Participant 3 was 21 years old and relied on words and gestures to communicate. He demonstrated sexualized behaviours (masturbation) in the presence of feces. For all three participants, data was collected on the frequency of the aforementioned behaviours.

Functional Assessment

To identify the function of the specific inappropriate behaviours exhibited by the individuals, the behaviour therapist and first author determined the topography of each behaviour by interviewing the primary staff working with the supported individuals. Once the behaviours were identified, they were operationally defined and baseline data were collected on their frequency. In order to identify the factors which contributed to the occurrence of maladaptive behaviours, the FBA was employed for each of the participants. The results of the FBA established the function of each behaviour and a protocol precisely outlining the steps to be followed by front line staff in managing the

Table 1. Assessment Tools and Intervention Techniques Employed

<i>Participant</i>	<i>Functional Assessment Tool</i>	<i>Target Behaviours</i>	<i>Intervention</i>
i	FAI	Scatolia	Sensory/tactile kit
	FAST	Pica	DRO Planned ignoring
ii	FAST	Anal poking Scatolia Pica	Social story Token economy Planned ignoring
iii	FAST	Sexualized behaviours in presence of feces	Verbal re-direction The Ethics of Touch video Sexuality education Automatic flush toilet

problem behaviour was developed and implemented for each individual. The protocol was signed by the individual's designated decision makers and the consulting psychologist, the second author.

The FBA assessment tools employed included the Functional Assessment Interview (FAI) and Functional Assessment Screening Tool (FAST). Table 1 provides the functional assessment used, the target behaviours, along with the intervention strategies employed to address them.

Data Collection

Data on scatolia, anal poking and pica were recorded by front line staff during regular checks. Attempts to smear, smearing and sexualized behaviours in the presence of feces were recorded using event recording.

Results

Functional Assessment

The results for the FAST, presented in Table 2, reflect quite a varied response in terms of the maintaining variables for these inappropriate behaviours. In all three of the men, both attention and sensory factors appeared to be the variables maintaining the behaviours.

The FAST identifies environmental and physical factors that may influence problem behaviours. The results of this tool as part of a comprehensive FBA can be used to verify behavioural functions and identify other factors that maintain the problem behaviour. Factors influencing the occurrence of a problem behaviour may fall into the domains of either automatic or social reinforcement which includes sensory stimulation, pain attenuation, escape, attention/ access to preferred items. The predominant source of reinforcement is identified by the domain in which the highest score is present.

As shown, Participant 1 showed a high frequency* of smearing during the baseline intervals, which was reduced considerably during the first intervention (Sensory/Tactile kit), in particular months 2 and 3 following introduction of the intervention. There was some exacerbation of smearing in months 2 and 3 of the second intervention phase (DRO/Planned ignoring) yet the total number of occurrences of the behaviour decreased from 12 (smearing), 4 (pica) in month 2, to 11 (smearing), 5 (pica) in month 3, to 2 (smearing), 2 (pica) in month 4 of this phase.

As shown in Figure 2, this client showed some reduction in poking, in smearing and in pica from baseline levels though the use of a Social Story and a Token system. When planned ignoring commenced in Month 4, his behaviour, particularly the pica, was reduced to zero levels.

Table 2. Variables Maintaining the Inappropriate Behaviours Related to Fecal Matter in the Three Clients

Participant	Social Reinforcement (attention)	Social Reinforcement (escape)	Automatic Reinforcement (sensory stimulation)	Automatic Reinforcement (pain attenuation)
1	2	3	2	2
2	3	2	2	1
3	1	0	2	0

Legend
 A score of 0 (the lowest possible score) indicates that the type of reinforcement (attention, escape, sensory stimulation or pain attenuation) is unlikely to be a factor influencing the occurrence of the behaviour, whereas a score of 5 (the highest possible score) indicates a much higher likelihood that the behaviour is maintained by that domain of reinforcement.

Predominant Source of Reinforcement
 Participant 1: Social Reinforcement (escape)
 Participant 2: Social Reinforcement (attention)
 Participant 3: Automatic Reinforcement (sensory stimulation)

* Frequency refers to the number of occurrences of the maladaptive behaviours related to feces observed each month.

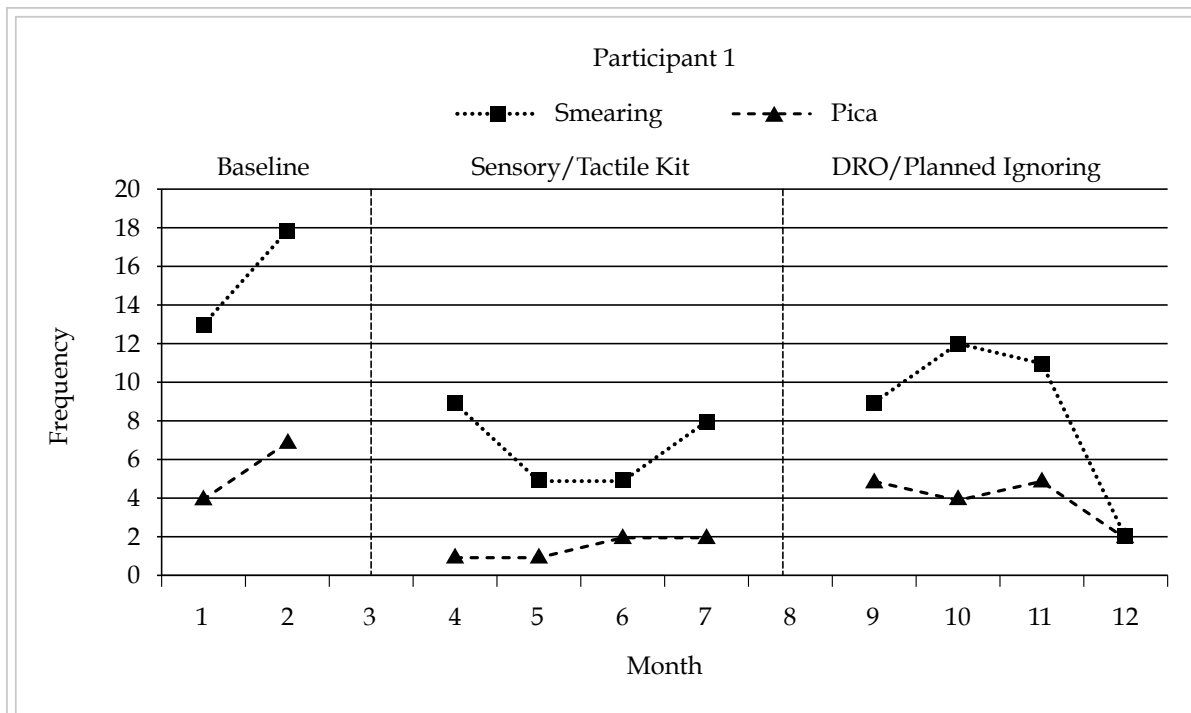


Figure 1. Problem behaviours during the baseline and intervention phases of the study for Participant 1.

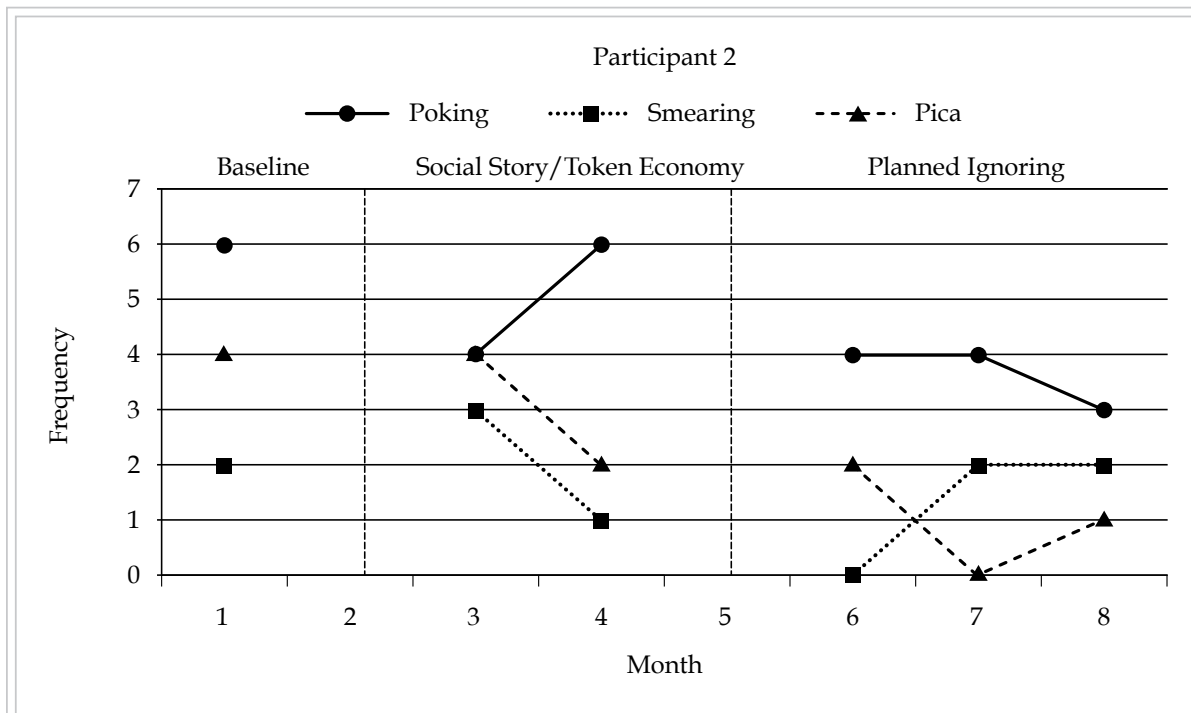
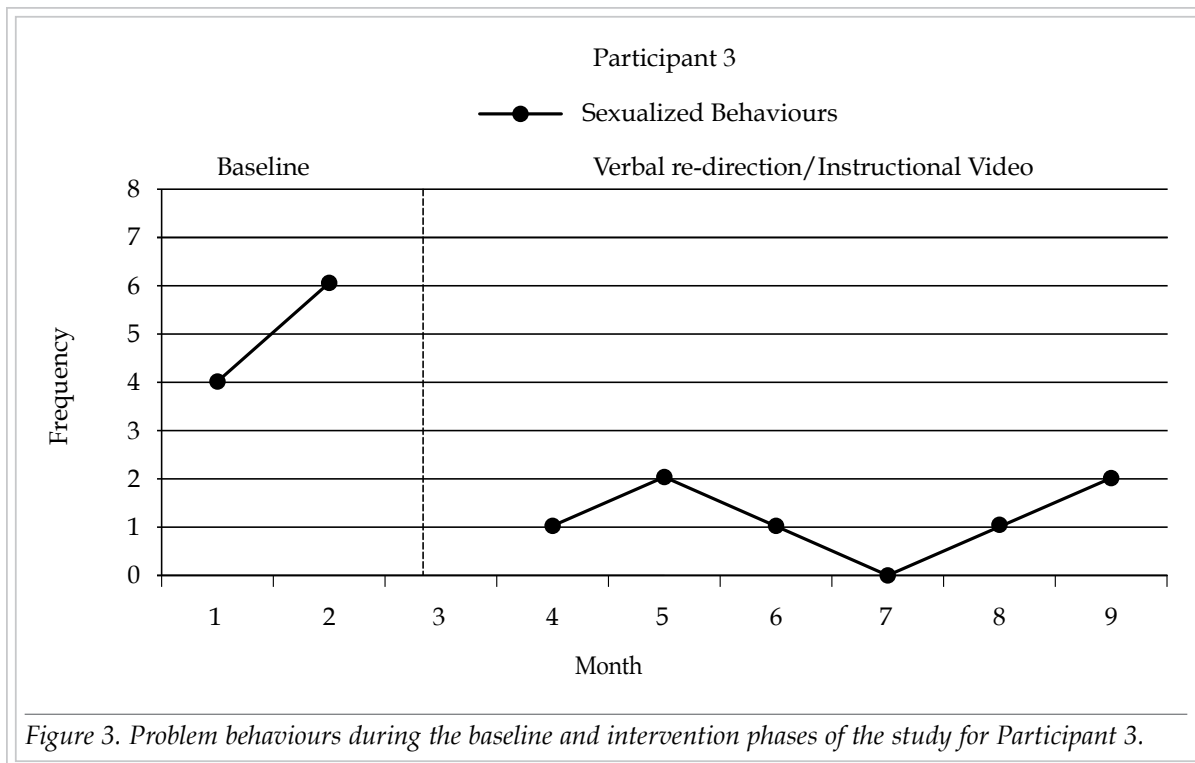


Figure 2. Problem behaviours during baseline and during the intervention phases of the study for Participant 2.



As shown, this client demonstrated some reduction in sexualized behaviour from baseline levels through the use of verbal re-direction and instructional video intervention strategies.

Discussion

The overall results from this study suggest that there are many variables maintaining behaviours related to the inappropriate handling of fecal matter. The use of functional assessment tools, including the FAI and FAST, can undoubtedly assist clinicians, staff and others who support persons with ASD to determine the factors maintaining the challenging behaviours. Consistent with our hypothesis, the results of the functional analyses can, in turn, be used to develop moderately successful interventions using behavioural principles. The intervention and data collection continue with these three people we support. While more research is clearly needed to determine the most effective strategies for decreasing, replacing or eliminating the occurrence of these behaviours, this study serves as a starting point for future research and intervention strategies that could aid in reducing the occurrence of feces-related behaviours.

There is some research suggesting that fecal smearing in persons with more severe levels of impairment, may represent a form of aggression, and that Risperidone may aid in decreasing the frequency and intensity of this behaviour (Brahm et al., 2007). It is possible that other medications may also have positive effects, although the relevant studies have not yet been undertaken. The mechanism through which medication may be effective is unclear, although the possibility that improvement in the overall functioning of the individual as a result of the medication may have salutary effects on the inappropriate management of fecal matter is likely. Of the participants in this study, two were maintained on low doses of Risperidone for the duration of the project. No medication changes occurred during baseline or treatment periods of this study.

Although no medication changes were made during the study, the three participants are maintained on different doses and also vary in age, and number of years that the behaviours have been exhibited. Some additional limitations of this study include the varied staff to client ratio in the different homes that the participants reside in. We suspect that in homes with lower levels of support, the individuals may have more

opportunities to successfully engage in these behaviours. Another possible limitation of the study could be that the three participants varied in level of impairment. We suspect that less impaired persons may respond more favourably to intervention approaches. Lastly, the participants varied in their involvement in daily activities in the community. It is often difficult to find activities where our population shows sustained interest and therefore some of the individuals that are supported may not be suitable candidates for day programs. For this reason, although involved in various activities in the community, usually for only shorter intervals during the day, these individuals with limited interests often spend more time at home where they can more easily gain access to their own fecal matter.

In conclusion, this study suggests that use of functional assessment tools can be beneficial in determining the most appropriate behavioural intervention strategy. Moreover, it suggests that individualized interventions are imperative to achieve desired outcomes in dealing with the ASD population. Future research direction comparing community involvement/activity level to frequency of feces related behaviours would be beneficial.

Key Messages from This Article

People with disabilities: Thank you to the individuals with ASD supported in community programs, residential settings and supported independent living – *may you continue to teach us how to make your world a more welcoming place.*

Professionals: We value the synergy that comes from working together. In order to fulfill our commitment to persons with ASD, we must work together as interdisciplinary teams to fill in the absent pieces of the ASD puzzle. We would like to acknowledge our Clinical department, managers and front-line staff for their assistance.

Policy makers: Policy to increase the funding towards research on the most efficacious multidisciplinary interventions for individuals with ASD is necessary as we approach a time where the number of persons diagnosed with the disorder is increasing.

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