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Elopement of children with Autism: What we know, successful interventions, and practical tips for parents and caregivers

What is Elopement?

Elopement, also frequently called wandering or bolting, is generally defined as an individual leaving a specified area without supervision or caregiver permission (Lang et al., 2009). Elopement increases the likelihood that an individual will become displaced from caregivers, seriously injured, or killed (Lehardy, et al., 2013). Studies targeting elopement have reported a range of prevalence rates among individuals with developmental and intellectual disabilities as well as individuals living with psychiatric illness or dementia (Anderson et al., 2012, Chung & Lai, 2011, Jang et al., 2011, Matson & Rivet, 2008). While reported rates of elopement within and among specific populations vary, there is no argument that elopement represents a significant health and safety concern. In fact, a recent survey completed by the Autism Interaction Network found that approximately 50% of children with autism between the ages of 4 and 10 years old display elopement. This rate was found to be four times the rate of their siblings without autism suggesting that elopement is far more common in children with autism compared to typically developing peers.

Why Does Elopement Occur?

Although there is significant speculation about the impact of core symptoms of autism, and associated non-diagnostic features (e.g., attention problems, cognitive delays), behavior analysts have focused on the operant function of elopement. In an early study, Piazza et al. (1997) used an extended functional analysis (FA) to determine the function of elopement and to develop individualized treatment plans for three children with developmental disabilities. Although definition of elopement differed slightly for each participant based on situations in which they displayed elopement in real life, Piazza et al. successfully developed a controlled assessment setting consisting of two rooms connected by a doorway to identify the behavioral function of elopement. The consequence provided from elopement varied across

functional analysis conditions (for example, in the social attention condition attention was provided contingent on elopement). The results of the FAs conducted during this study demonstrated that elopement served different functions across the children (i.e., to gain attention, to obtain edibles or high preference sting-like objects, and to access sensory consequences in the form of running). Prior to developing treatment plans to address the function(s) of elopement, Piazza et al. conducted preference assessments in order to ensure that high-preference items that functioned as reinforcers were available. Each participant's elopement was successfully treated using an intervention package consisting of differential reinforcement (i.e., DRO, DRA) and non-contingent reinforcement (NCR). The results of the interventions generalized to both the participants' homes and schools. In another example, Tarbox, Wallace, and Williams (2003) treated the elopement of three males with developmental disabilities in the setting in which their behavior typically occurred (e.g., indoor mall, vocational program). Tarbox et al. (2003) modified the functional analysis used by Piazza et al. (1997) to assess elopement in a more natural setting to address the safety risks associated with research on elopement in the natural settings, a confederate followed each participant at a distance to ensure his safety and to prevent concerned citizens from interfering with the assessment. The results from the functional analyses were similar to those reported by Piazza et al. Elopement was shown to be maintained by access to high-preference items or activities (e.g., a toy store) and social attention. Non-contingent reinforcement (NCR) and functional communication training were demonstrated to reduce elopement. The primary advantage of experimental functional analyses is that they involve the direct manipulation of antecedents and consequence; thus, if elopement reliably occurs in a particular functional analysis condition then parents and clinicians can be more confident that they have identified the function (purpose) of elopement.

The current functional assessment literature has identified several evidence-based functions of elopement: a) social positive reinforcement in terms of attention from other people and access to high-preference items or activities (e.g., the toy store at the mall), b) social negative reinforcement in terms of escape and avoidance of instructional demands (e.g., elopement successfully gets the child out of math time at school) and c) automatic reinforcement (e.g., a child likes to run because she finds it pleasurable, but she lacks danger awareness skills). Currently, evidence is lacking for other hypotheses of the function of elopement such as physiological arousal and access to stereotypic or repetitive behavior (e.g., a child wanders to their neighbors swimming pool because they are attracted to the reflection of the water which provides an attractive surface for self-stimulatory behavior). A child with autism with poor danger awareness or water safety skill might accidentally be drowned in this scenario.

Procedures Used to Effectively Decrease Elopement

A variety of behavioral intervention procedures and environmental modifications have been used to target the determined function (purpose) of elopement. Multiple studies have included non-contingent reinforcement (NCR) procedures as part of targeted treatments for elopement. Piazza et al. (1997) determined that one participant eloped in order to obtain chips, a highly preferred edible. Treatment for this individual's elopement included making small bites of chips available independent of his behavior. Another study by Tarbox, Wallace, and Williams (2003) used continuously available adult attention to reduce occurrences of elopement. In a 2008 study done by Perrin, Perrin, Hill, and DiNovi, elopement was successfully decreased by targeting the multiple functions of elopement, which were access to attention and a preferred toy. By making access to attention from adults and preferred toys available non-contingently there was no longer a need to elope in order to access attention and toys.

Differential reinforcement procedures such differential reinforcement for other behavior (DRO) and differential reinforcement for alternative behavior (DRA) have had demonstrated success in reducing elopement as part of a treatment package. The Piazza et al. 1997 study used access to attention and edibles following a specified period of time without elopement or attempts to elope to reduce the overall frequency of the behavior for one of the study's participants. Another participant in this same study was differentially reinforced following the display of appropriate behavior (walking) with a choice between attention and the ability to run in an appropriate area for a short period of time. For this individual, blocking (an adult placed his or her body between the participant and the exit) was paired with DRA to decrease his behavior to low levels.

Functional Communication Training (FCT) has also been effective in replacing elopement attempts with simple communication responses that serve the same purpose. In the 2013 study conducted by Davis, et al. a functional analysis indicated that elopement was being maintained by access to attention, preferred toys, and edibles. For this participant it was easier for him to elope than to use a form of communication to request what he wanted. Following FCT to teach him how to request attention and preferred items, elopement decreased and functional communication increased. Falcomata, Roane, Feeney, and Stephenson (2010) used FCT (request for opportunity to engage in stereotypy) paired with blocking to address elopement maintained by automatic sensory reinforcement. Perrin, Perrin, Hill, and DiNovi (2008) taught one participant to use a break card to request a break instead of eloping to escape demands.

In addition to assessment and the development of a behavior intervention plan to address elopement, there are several antecedent strategies and environmental

modifications that can be made to prevent episodes of wandering. Below are some actionable tips for parents and caregivers along with links to resources.

Practical Tips for Parents and Caregivers

Note: NYSABA does not endorse specific products. Links below are simply examples provided for convenience.

1. Assessment:

- Keep a log of your child's elopement (include unsuccessful attempts) and note the time of day, place, activity, people present, and a brief description of how you respond.
- Functional assessment methods typically require the support of someone who has received specific training in behavioral assessment methods. An analogue functional analysis should only be conducted by a behavior analyst, preferably one who is board certified, or other qualified professional. Given the complex nature of elopement, parents should inquire about professional training and expertise in these areas.

2. Prevention:

- Be sure your child is [wearing identification at all times](#)
- Register your child with the [National Child Identification Program](#)
- [Wearable alarms and GPS tracking](#) for high-risk individuals
- Install appropriate [door](#) and [window locks](#)
- Install [door and window chimes](#) to alert you to possible wandering attempts
- If your child wanders at night consider installing a [bed alarm](#)
- [Fence](#) your yard if possible

3. Safety skills:

- Work with your school team or in-home therapists to teach safety skills such as how to safely cross streets, how to respond to his or her name, how to ask permission to leave a location, how to swim.
- Learn CPR and First Aid! There are many occasions in which your preparation in the event of an emergency could prevent significant illness and injury. Although teaching the individual with autism to safely navigate his or her environment is the best option, caregivers need to be prepared in the event that elopement occurs, leads or injury, and you need to respond.

4. Communication:

- Talk to your neighbors and provide them with your contact information

- Inform local law enforcement and emergency responders about your child's wandering behavior
- [Display decals](#) on your windows that indicate to first responders that a child with autism lives in your home

SUGGESTED READINGS ON ELOPEMENT

Elopement in non-ASD populations

Algase, D. L., Son, G. R., Beattie, E., Song, J. A., Leitsch, S., & Yao L. (2004). The interrelatedness of wandering and wayfinding in a community sample of persons with dementia. *Dementia & Geriatric Cognitive Disorders*, *17*, 231-239.

Rowe, M. A., & Glover, J. C. (2001). Antecedents, descriptions, and consequences of wandering in cognitively impaired adults and the Safe Return (SR) program. *American Journal of Alzheimer's Disease and Other Dementia*, *16*, 344-352.

Nelson, A., & Algase D. L. (2007). *Evidence-based protocols for managing wandering behaviors*. New York: Springer Publishing Company.

Kodak, T., Grow, L., & Northup, J. (2004). [Functional Analysis and Treatment of Elopement for a Child with Attention Deficit Hyperactivity Disorder](#), *Journal of Applied Behavior Analysis*, *37*, 229-232.

Functional assessment and analysis of challenging behavior

O'Neill, R. E., Horner, R. H., Albin, R. W., Storey, K., & Sprague, J. R. (1997). *Functional Assessment and Program Development for Problem Behavior: A Practical Handbook*. Baltimore, MD: Paul H. Brookes Publishing Company.

Matson, J., Bamburg, J. W., Cherry, K., & Paclawskyj, T. R. (1999). A validity study on the questions about behavioral function (QABF) scale: Predicting treatment success for self-injury, aggression, and stereotypies. *Research in Developmental Disabilities*, *20*, 163-175.

Betz, A. M., & Fisher, W. W. (2011). Functional analysis: History and methods. In W. W. Fisher, C. C. Piazza, & H. S. Roane (Eds.), *Handbook of applied behavior analysis* (pp. 206-225). New York, NY: The Guilford Press

Hanley, G. P., Iwata, B. A., & McCord, B. E. (2003). [Functional analysis of problem behavior: A review](#). *Journal of Applied Behavior Analysis*, 36(2), 147.

Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1994). [Toward a functional analysis of self-injury](#). *Journal of Applied Behavior Analysis*, 27(2), 197.

Piazza, C. C., Bowman, L. G., Hagopian, L., Owens, J., & Slevin, I. (1992). [A comparison of two approaches for identifying reinforcers for persons with severe and profound disabilities](#). *Journal of Applied Behavior Analysis*, 25(2), 491.

Elopement in Persons with ASD

Lang, R., Davis, T., O'Reilly, M., Machalicek, W., Rispoli, M., Sigafoos, J., Lancioni, G., & Regester, A. (2010). [Functional analysis and treatment of elopement across two school settings](#). *Journal of Applied Behavior Analysis*, 43(1), 113–118.

Neidert, P. L., Iwata, B. A., Dempsey, C. M., & Thomason-Sassi, J. L. (2013). [Latency of response during the functional analysis of elopement](#). *Journal of Applied Behavior Analysis*, 46(1), 312-316.

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Chung, J. C. C., & Lai, C. K. Y. (2011). Elopement among community-dwelling older adults with dementia. *International Psychogeriatrics* 23(1), 65-72.

Davis, T. N., Durand, S., Bankhead, J., Strickland, E., Blenden, K., Dacus, S., Hannig, A. P., Hauptert, M., Fuentes, L. and Machalicek, W. (2013). Brief report: Latency of functional analysis of elopement. *Behavioral Interventions*, 28: 251–259.

Falcomata, T. S., Roane, H. S., Feeney, B. J., & Stephenson, K. M. (2010). [Assessment and treatment of elopement maintained by access to stereotypy](#). *Journal of Applied Behavior Analysis*, 43, 513-517.

Jang, J., Dixon, D. R., Tarbox, J., & Granpeesheh, D. (2011). Symptom severity and challenging behavior in children with ASD. *Research in Autism Spectrum Disorders*, 5, 1028-1032.

- Lang, R., Rispoli, M., Machalicek, W., White, P. J., Kang, S., Pierce, N., Mulloy, A., Fragale, T., O'Reilly, M., Sigafoos, J., & Lancioni, G. (2009). Treatment of elopement in individuals with developmental disabilities: A systematic review. *Research in Developmental Disabilities, 30*(4), 670.
- Lehardy, R. K., Lerman, D. C., Evans, L. M., O'Connor, A., & LeSage, D. L. (2013). A simplified methodology for identifying the function of elopement. *Journal of Applied Behavior Analysis, 46*(1), 256-270.
- Matson, J. L., & Rivet, T. T. (2008). Characteristics of challenging behaviours in adults with autistic disorder, PDD-NOS, and intellectual disability. *Journal of Intellectual & Developmental Disability, 33*(4), 323-329.
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- Piazza, C. C., Hanley, G. P., Bowman, L. G., Ruyter, J., Lindauer, S. E., & Saiontz, D. M. (1997). [Functional analysis and treatment of elopement](#). *Journal of Applied Behavior Analysis, 30*, 653-672.
- Tarbox, R. S. F., Wallace, M., & Williams, L. (2003). [Assessment and treatment of elopement: A replication and extension](#). *Journal of Applied Behavior Analysis, 36*(2), 239-244.

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