

Treatment of Pica Using Noncontingent Reinforcement

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DSM-IV Criteria



- Persistent eating of nonnutritive substances for a period of at least 1 month.
- The eating of nonnutritive substances is inappropriate to the developmental level.
- The eating behavior is not part of a culturally sanctioned practice.
- If the eating behavior occurs exclusively during the course of another mental disorder (e.g., Mental Retardation, Pervasive Developmental Disorder, Schizophrenia), it is sufficiently severe to warrant independent clinical attention.



Characteristics of Pica

- Potentially life threatening
 - Considered to be the most lethal form of self-injurious behavior
- Risks include:
 - Parasitic infection
 - Accidental poisoning
 - Blockage of the intestines
- Prevalence estimates: approximately 25% of mentally retarded individuals living in an institutional setting

Participant - Staci



- 10 year old moderately mentally retarded female
- Living at home with her 2 parents
- Attending a public school
 - Educational setting: severely handicapped class

Assessment - Problem Identification

- Interviews

- Parents and teacher - both sources suggested that the pica was occurring due to self stimulation

- Indirect observation

- Parents and teacher asked to record the frequency of the behavior
 - Behavior was defined as anytime Staci touched her lips or put in her mouth an inedible object

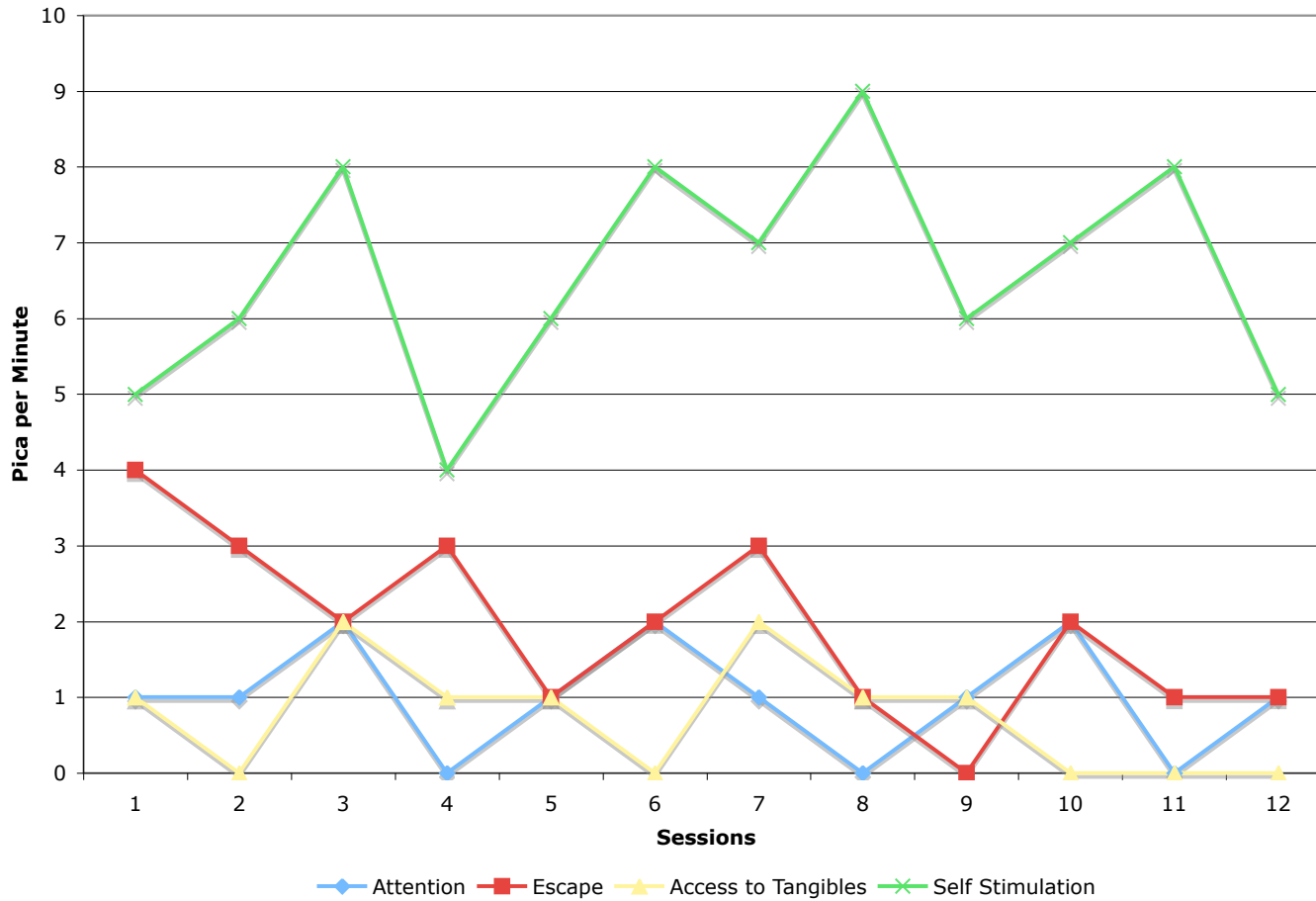
Assessment - Problem Analysis

- Baited items (uncooked beans and pasta, birthday candles and paper) were used in the experimental analysis
- The 4 possible behavioral functions were systematically examined as follows
 - Attention - Staci was given a verbal reprimand every time she tried to eat one of the baited items
 - Escape condition - Staci was presented with a non desired object (a book). The book was removed for 30 seconds if she attempted to eat one of the baited items
 - Access to tangibles - Staci was given 2 M & M's each time she engaged in pica behavior
 - Self-stimulation - Left alone for 10 minutes while her pica behavior was recorded

Assessment - Problem Analysis

- Functional analysis consisted of 12, 10 minute sessions
- The behavior was recorded using frequency count and reported as the number of pica attempts per minute.

Results of the Functional Analysis





Choosing an intervention

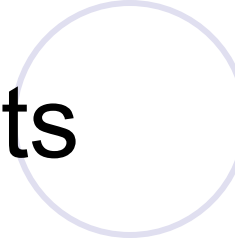
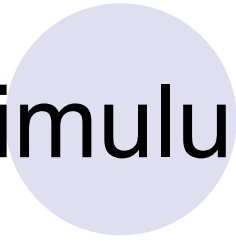
- Efficacious intervention - noncontingent reinforcement when self-stimulation is the function
 - Fabell, McGimsey, and Schell (1982) - N=3
 - Hirsch and Smith-Myles (1996) - N=1
 - Mace and Knight (1986) - N=1
 - Piazza, Hanley, and Fisher (1996) - N=3
- Effective (and Efficacious) intervention - noncontingent reinforcement when self-stimulation is the function
 - Piazza, Fisher, Hanley, LeBlanc, Worsdell, Lindauer, and Keeney (1998) - N=3

Stimulus Preference



- The stimulus (oral, visual, auditory, tactile, thermal) was most preferred by Staci needed to be determined before the actual intervention could begin. The hypothesis was that Staci's stimulus preference would be oral
 - Stimulus preference trials were 5 minutes in duration
 - Staci was left alone in the school's resource room with each of the stimuli, one by one
 - Stimuli were determine using the Reinforcer Assessment for Individuals with Severe Disabilities (Fisher, Piazza, Bowman, & Amari, 1996)
 - Duration recording was used to record the total time she spent physically touching the item

Stimulus Preference Results



Intervention Design



- ABAB design
- 2 researchers present at all times (1 conducting the intervention the other monitoring for integrity)
- 1st baseline obtained from the functional analysis data
- 1st treatment condition was administered for 5 days, with 3 ten minute sessions per day
- 2nd baseline was obtained by returning to the functional analysis self-stimulation condition for 3 days
- 2nd treatment condition was obtained in the same fashion as the first

Noncontingent Reinforcement

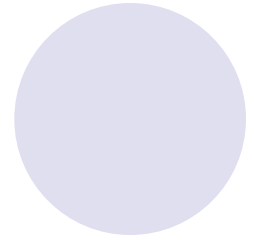
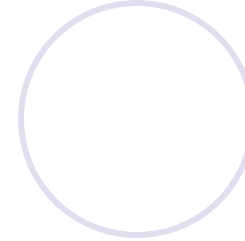
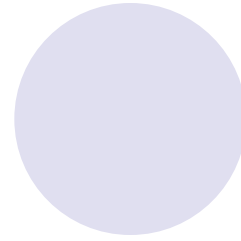
- Oral stimuli was preferred by Staci
 - Staci was presented with an oral stimuli (food or other non harmful item like a teething ring) every minute regardless of what type of behavior she was engaged in



Evaluation of Treatment Outcome

- ABAB results
- Social validity
- Treatment integrity

ABAB Results





Social Validity

- The pica behavior was severe enough that the treatment goal was considered significant and appropriate
- The effects were also considered to be socially important

Treatment Validity

- Two trained researchers administered all treatment with 100% integrity

Future Directions



- Parents and teachers need to implement the intervention in the home and school
- Plan for fading
 - Not discussed in the literature