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EXTINCTION OF HEADBANGING BEHAVIOR
IN AN AUTISTIC CHILD; A CASE STUDY

A Project
Presented to the
Faculty of
California State University,
San Bernardino

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts
in
Education:
Special Education Option

by
Fernando Cerón Esquivel

June 1998

EXTINCTION OF HEADBANGING BEHAVIOR
IN AN AUTISTIC CHILD; A CASE STUDY

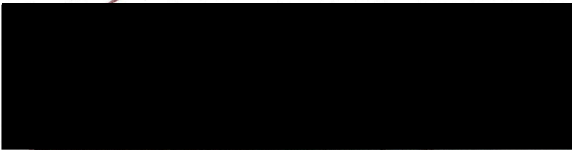
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ABSTRACT

Operant extinction was used to decrease the self-injurious headbanging behavior in a child diagnosed with autism. Two kinds of treatment were used: withdrawal of attention contingent upon presentation of the self aggressive behavior (extinction related to positive reinforcement), and back on task (extinction related to behaviors negatively reinforced in the past). The behavior was decreased from 21.4 responses as a mean in base line to 0.2 responses as a mean during the last 10 treatment sessions. Thirty ninety-minute sessions were performed. The settings were in the same classroom and cubicle currently used for daily academic performance.

To Papá, Mamá, Meztli, Itzel, Ho y Alma

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INTRODUCTION

Self-injurious behavior (SIB) has been defined in many ways. Some of the most frequent synonyms include: self-mutilation, self-directed aggression, self-destructive behavior, suicidal behavior, and self-punitive behavior (Belfiore and Dattilio, 1990). Some of these terms are related to the intention of emitting behavior while in others it is described as their effect.

Recently, self-injurious behavior (SIB) has become a major focus of research in the field of special education. Some people with developmental disabilities present self-injurious behavior as a serious problem. In some cases it is the main problem, while in others is the secondary one. Self-injurious behavior is common to many individuals with behavioral disorders.

Self-injurious behavior has been traditionally thought of as a physical disorder, and consequently it has been treated with physical procedures, but some studies have recently seen it as shaped by its environmental consequences (Iwata, Volmer & Zarcone, 1990, and Mace, Lalli, & Lalli, 1991, in Iwata, Pace, Cowdery, and Miltenberger, 1994). According to this point of view, behavior modification procedures might be used as a therapeutic procedure to decrease or eliminate its frequency.

Actually, some specific behavior modification

procedures have been used with promising results. For instance, differential reinforcement of other behavior (DRO) in addition to extinction, decreased the frequency of self-injurious behavior in three women with high base line rates (Mazaleski, Iwata, Vollmer, Zarcone, and Smith, 1993). In another study, a combination of self-injurious and escape behavior was treated using a high-probability instructional sequence with and without escape. The behavior decreased when escape was implemented (Zarcone, Iwata, Huguez, and Volmer, 1993). Reid, Parsons, Phillips, and Green (1993) reduced self-injurious hand-mouthing behavior using response blocking in two adults with profound disabilities.

Vollmer, Iwata, Zarcone, Smith, and Mazaleski (1993a) used non contingent reinforcement as an alternative procedure to differential reinforcement of other behaviors in three females with developmental disabilities. Results showed a high effectiveness in reducing self-injury. In another study, the same authors (1993b) reported a systematic approach for studying unclear data measurement sources in the functional analysis of behavioral disorders and for demonstrating multiple control of self-injurious behavior.

The present study was aimed at investigating the validity of operant extinction in the treatment of self-injurious behavior, specifically, the use of extinction to decrease the frequency of head banging behavior.

METHOD

Subject:

Jeremy is the second child of a family of four, including the parents. He is an 8 years old child. He is diagnosed as an autistic child, and has been in special education classes since he was 3 years old. His parents and close relatives do not evidence autistic or other mental health problems.

Jeremy is a child of regular build. He is 51.1 inches tall and weighs 62 pounds. He looks nice. His stare does not look lost, but restless, and, if we pay attention on his physical features, no disability is evident. If we find him on the street, he looks as normal as any other child.

Jeremy's speech is quite limited, he uses no more than 20 words with no clear pronunciation. He does not use those words for establishing relationships, but repeats them when required to work during the training sessions. He is learning some academic skills like discriminating numbers and letters. He is being trained in gross motor control in tasks such as drawing, cutting paper, and assembling blocks. He is also being trained in some specific self-care skills like: self-feeding, and appropriate use of the toilet.

Jeremy shows no problems regarding his eating habits. He has some food preferences, however, since he does show diversity, sufficiency and completeness in his eating

patterns, although not entirely in an appropriate manner. With respect to sleep, he shows no particular problem, and does so according to what his age requires.

Jeremy likes to attend classes. His best and only friend is his sister. She is a little older than he, and Jeremy spends most of the time with her when he is at home.

In spite of Jeremy's diagnosis, his is not a severe case of autism. His most important problems are in the areas of language and social relationships.

Jeremy does not respond to instructional control, and his educational tasks have to be repeated many times. When writing his name on his assignments, he does so very poorly, but he is very skillful at assembling puzzles.

Aside from Jeremy's autistic condition, his two main problems during his special education classes are his aggressive and restless behaviors.

Jeremy's mother had a mild case of varicella when she was 7 months pregnant. This was not considered a risk for the baby in any way. Jeremy was delivered vaginally and developed normally until he was 6 months old. At the age of 6 months, Jeremy had his first bronchial episode. After that he had five more episodes in a period of 18 months. It is possible that because of the frequency of the bronchial episodes he had had infectious complications in his ear canals.

When Jeremy was two years old he did not respond when

his parents called him by name. He did not respond to other different stimuli of the environment either, but was displaying a clear abnormality in his attention. Jeremy was assessed in a public health institution. A pediatrician, a psychologist, and a neurologist evaluated Jeremy, and no one found any clear cause of the problem. Afterwards, another physician suspected epilepsy because of the electroencephalogram results, and prescribed the use of sedatives. Jeremy took "Meyeril", 5 mg., once a day, for three years. According to Jeremy's mother he did not experience any change. Currently, Jeremy does not take medication. He only attends special education classes.

At the age of 2 years and 3 months, Jeremy underwent surgery on both ear canals. The surgery was performed in order to eliminate the deafness problem that a physician had diagnosed as the cause of the inattentive behavior in Jeremy.

Another important event in Jeremy's case was a discussion his parents had when he was 1 1/2 years old. On that occasion, Jeremy not only listened to his parents arguing, but was even jerked and pulled around. Currently, it is not possible to determine how Jeremy was affected because of that event, although the mother suspects the event had some bearing on the abnormal condition of her son.

At age of three years old, Jeremy was evaluated in the Oral and Hearing Pedagogic Institute (IPAO) where he was

diagnosed with hypoacusia. In order to have a more accurate diagnosis, a study of evoked reaction potentials was done on Jeremy. The results of the study showed normal hearing.

Jeremy began to attend his special education classes when he was three and a half years old. He entered the Educational Attention for the Community Interdisciplinary Center (CIAEC) to receive special attention. There are data of the Jeremy' behavior during that period that show an abnormal frequency of aggressive behavior, both to himself and geared towards others. But before this study, there were not any treatments used specifically with Jeremy in order to decrease his aggressive or self-aggressive behavior. At age of 5 and three months Jeremy returned to the Oral and Hearing Pedagogic Institute (IPAO) to receive language therapy, because of his great delay in development.

Up until the onset of this study, Jeremy's parents and his teacher were worried because of his self-aggressive behavior, particularly the head banging behavior. Jeremy hit his head against the walls or doors quite frequently. As a result of this his head had bumps, and the classroom walls and doors had holes.

Jeremy's head banging behavior is not the main worry of his parents, but such behavior is the most spectacular, both for his parents and for the rest of the personnel and parents of other children who attend the Center where Jeremy goes to receive special attention.

Instruments:

For the observation of the behavior, the settings that were used were the same as the ones where Jeremy currently attends on a daily basis. Those settings are a classroom and three cubicles that are used on a daily basis for academic work. The classroom is a 2 by 3 meters room, with five small tables with chairs. The majority of students who receive special education classes attend this classroom. One of the three cubicles is used when a student displays problems related to misbehavior. The cubicle is also used when a specific treatment is recommended. There are three cubicles. In each one of them there is only one table, two chairs, and an empty bookcase. Both the cubicles and the classroom have a wide window with a glass that allows for observations from outside the room without being seen. Many of the observations and the records were made without Jeremy realizing he was being observed. On a normal basis, six children and four instructors work in the classroom and cubicles. One of the instructors is a mother of one of the children in the Center, and is being trained on how to work with her autistic child. Each day a different mother is trained.

A record was made of the frequency of head banging behavior. A record sheet was used in order to register the frequency of the behavior. Each time Jeremy hit his head on the wall or on the door was considered as one response. The

response was considered as one, regardless of the intensity. Other self aggressive behaviors, like hitting the head with the arm, or hitting the elbow on the table, were not considered for this study. These responses were present only six times during the first 25 treatment sessions. Other aggressive behaviors, such as kicking the wall or hitting another person were also not considered as part of the study, although these behaviors occurred very frequently.

The record sheet had three columns. The situation in which the head banging behavior occurred, or the situation immediately preceding this behavior were registered in the first column. In the second column, each occurrence of the head banging behavior was registered, along the time in which it happened. This was carried out in order to analyze if there was any specific relationship between the time and the emission of the behavior. The consequences of the behavior were registered in the last column, particularly, what people did after the occurrence of the behavior. That is, how people reacted to the self-injurious behavior of Jeremy.

The same academic materials and tasks the student was currently working with were continued. Activities were not different from those planned before the study. These activities corresponded to Jeremy's Individualized Instructional Plan.

A sample of Jeremy's behavior was recorded on

videotape. In the videotapes Jeremy is sometimes working with his mother, while in others he is working with the experimenter. The intention of make the video was to analyze and compare the different ways of handling of Jeremy's activity.

During the treatment period, the consequences for the behavior under study were handled by the experimenter. During this treatment period, the experimenter worked with Jeremy in the classroom as well as in one of the cubicles. The cubicle was used when the disturbance inside the classroom was too great and it affected the behavior of the rest of the children.

Procedure:

Permission was obtained, both from Jeremy's mother as well as from his teacher for working with the head banging behavior using operant extinction as a procedure. Both persons were informed of the details of the procedure, and were asked to collaborate during the whole process.

The experimenter discussed the results of each daily working session with the teacher. During the discussion session the people involved not only talked about the head banging behavior, but of other variables related with the case as well.

The subject attended daily special classes during the study, except on Saturdays and Sundays. Each classroom

academic session lasted 180 minutes. For this study, the latter 90 minutes of each session were considered.

During the base line period the experimenter only observed the subject's behavior, through the window, from the outside the classroom or the cubicle. The experimenter did not participate in any task with the subject, nor did he interact with him. There were five observational study sessions in this period. The subject was working on ordinarily planned tasks. Four out of the five days the subject worked with his teacher, and the fifth day he worked with his mother.

During the treatment period sessions, the experimenter worked with the subject four of the five days of the week. The fifth day the subject worked with his mother in order to comply with the regulations of the Center. Wednesday was the day when Jeremy worked with his mother. Both the experimenter and his mother were working with the subject according to the activities planned by the teacher. This activities were similar to those of the base line period and they pertained to the Individualized Instructional Plan for the subject.

A video recording was made on three different days. The video helped to analyze the subject's behavior, and to compare it with some records. This helped to verify the correct application of the consequences on the behavior.

The experimental procedure consisted of the application

of the extinction contingent on the head banging behavior. As a result of the analysis of the base line Data, it was concluded that there were two possible consequences which were maintaining the head banging behavior: first, the attention Jeremy obtained immediately after he hit his head, and second, the avoidance of aversive tasks. In the first case, to get attention, the behavior was being maintained through positive reinforcement. In the second case, the avoidance of aversive tasks, the behavior was maintained through negative reinforcement.

Due to those conclusions, it was necessary to program two procedures; the first one consisted in withdrawing the attention contingent with the head banging behavior. The second procedure required Jeremy to go back to the task.

Because it was not operationally possible to get Jeremy back on his task without attention, and since it was not possible to know when the behavior was controlled by attention and when it was being controlled by the avoidance of the task, the treatment procedure consisted of a combination of both extinction procedures as follows: when Jeremy hit his head against the wall or the door, the experimenter withdrew his attention for a period of one to three minutes. During that time the experimenter noted the data on the record sheet. If the subject hit his head again within this time frame, the experimenter reset his watch and began to check the time again, and so on. On other hand, if

Jeremy did not hit his head during that period, the experimenter took him by the hand and put him on the task. The experimenter felt free to decide on the duration of the period, which oscillated between one and three minutes. The intention of this was so the subject could be aware of the beginning of the period, but could not discriminate the end of it.

Although it is true that while Jeremy displayed the head banging behavior on a more frequent basis, thus being able to cause a delay in going back to the task; ultimately Jeremy was always taken back to the task. Therefore, the fact of Jeremy banging his head against the wall did not help him to avoid the task. On the other hand, although Jeremy received attention, on a delayed basis, the suspension of attention was always immediately contingent to the behavior.

RESULTS

The first five sessions of the study were used as the base line period. The behavioral record was always made by the same observer, who in this study was the investigator. At the end of each session the observer discussed with Jeremy's teacher what had happened during that day.

A high frequency of head banging behavior was observed during this period. The behavior occurred 107 times during the five days, with 21.4 responses per session as a mean.

That is, the equivalent of more than one response every four minutes. During this base line period, the response variability range was 19 responses, with 34 responses as top frequency, and 15 responses as the lowest score. No performance pattern was found regarding the timings between responses.

The number of times that Jeremy hit his head during the five Base Line sessions is showed in the following table:

Table 1

Number of Responses per Session
During the Base Line Period

Session	Frequency
First	15
Second	11
Third	34
Fourth	19
Fifth	28

$$f = 107$$

$$X = 21.4$$

The consequences to the headbanging behavior that appeared with a greater frequency during the base line period were as follows:

To hug Jeremy in order to restrain him from banging himself.

To shout at him "No Jeremy. Come to work".

To pull Jeremy in order to move him away from the wall or the door.

To chase Jeremy all over the classroom.

To scold Jeremy.

We can observe that all the above consequences provided an immediate attention to the headbanging behavior, and that under no circumstances there were no direct actions to returning Jeremy back to the interrupted task.

According to the analysis of the consequences, it was inferred that Jeremy was reinforced in two ways: one, he was being positively reinforced, because he received attention immediately after the behavior; two, he was being negatively reinforced because he avoided or escaped from aversive tasks.

Because of these two reinforcement processes implied, in Jeremy's case it was necessary to apply two extinction procedures, the first one related with receiving attention (positive reinforcement), the second one related with avoiding or escaping from aversive tasks (negative reinforcement).

The treatment required that attention was to be withdrawn when the head banging behavior occurred, and also that Jeremy was to be returned to the task that was required

from him.

It is difficult to combine these two procedures at the same time since returning Jeremy back to the task required some kind of attention.

The treatment devised for Jeremy consisted in withdrawing attention immediately after the head banging behavior (extinction of positive reinforcement), and after some time, to return him to the task (extinction related to behaviors negative reinforced in the past). Specifically, each time Jeremy banged his head, nobody paid attention. Furthermore, nobody could look at him. The time of non attention varied from one to three minutes, which was restarted in case of relapse. The range of one to three minutes was arbitrarily decided by the experimenter on each specific case; this in order not to turn it into a discriminating situation, as in the case of a fixed duration of time. After this period, the experimenter took Jeremy back to the task by taking his hand firmly, and carrying him to the chair, without any possibility of escape or avoidance. The time of inattention and going back to the task worked as the suspension of reinforcement.

During the treatment period, it was observed that on the first day the extinction procedure applied contingently to the behavior under study, the frequency of the behavior decreased to a level which was lower than the value of any of the base line period (see Figure 1). Nonetheless, the

following day the frequency increased up to 21 responses; a value equal to that of the base line average.

On the third day of treatment, the head banging behavior appeared only twice, which was a significant achievement when compared against the average value of the frequency in base line. From the fourth day on to the end of the study, the frequency of the behavior displayed a constant tendency toward decreasing.

HEAD BANGING RESPONSES PER SESSION

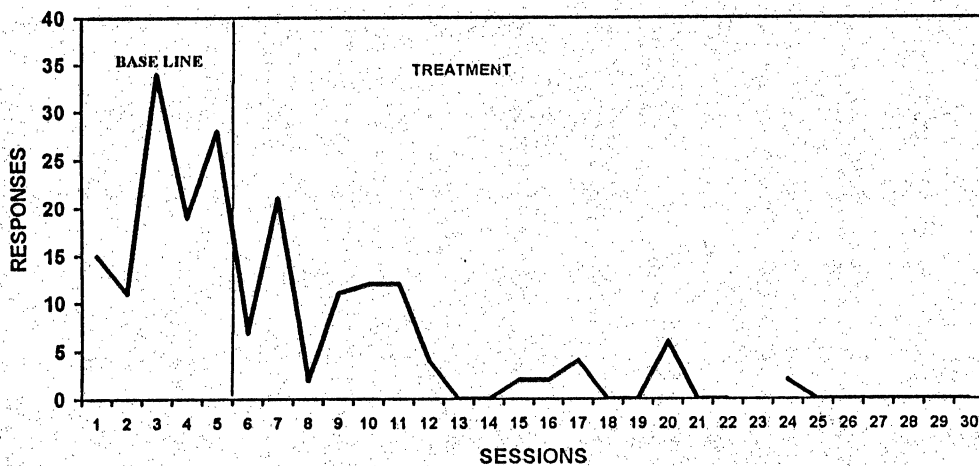


Figure 1. The graphic shows a gradual decrease of the head banging behavior, from 21.4 responses as a mean during the base line period, to 0.2 responses per session during the last 10 treatment sessions.

The eighth day of the treatment was the first day in which Jeremy did not bang his head at any time during the

whole 90 minutes of the session. That day, the Center went back to work after a vacation period of one week. It is possible that Jeremy's enthusiasm to continue with the activities had contributed to the fact that he did not bang his head not one time during that day. The following day also registered an absence of head bangs. After the 16th session, the presence of the treatment behavior became increasingly less frequent. From session 21 to session 30 the frequency of the behavior decreased to only twice during these 10 last sessions.

The study was interrupted in session 30. No formal record of the behavior was carried out afterwards. Due to changes in the administration of the Association in charge of the Center where Jeremy attends his special education classes, the study was suspended. The experimenter continued asking Jeremy's mother and teacher what had happened with the behavior. They said that the head banging behavior had almost disappeared. Although some other aggressive behaviors, like kicking the wall or door, or hitting somebody else, were still present.

No formal record was carried out on the generalization of the response. The information whether if the head banging response occurred while Jeremy was at home was done by asking his mother about it. In fact, the frequency was even lower due to the difference in activities at home and the classes in the Center. It seems the class situation in the

center turned into a discriminating situation for the head banging behavior, and that its high frequency was not yet generalized to the situation activities at home.

It was not possible to perform a follow-up on the treatment since with the change in administration. The personnel who attended the children, as well as the working regulations were both modified.

COMMENTS

According to the results, we can observe that there was a significant decrease in the frequency of the treated behavior. The frequency diminished from an average of 21.4 responses per session during the base line period to an average of 0.2 responses per session during the 10 latter sessions of the treatment period.

It is not possible to conclude which of the two implied processes had a greater impact on the behavior: attention withdrawal (extinction related to positive reinforcement), or returning Jeremy to the task (extinction related to negative reinforcement). It is suggested, for subsequent studies, that each procedure should be handled separately, or that situations where only one of them is used are handled as a second treatment in order to compare the effects on behavior. Although in this last suggestion there would still be doubts regarding the effect that the sequence of the treatment presentation would have on the behavior.

In the results we can perceive a sudden decline in the frequency of the treated behavior. Due to the lack of accurate data regarding when Jeremy began banging his head, the frequency of this occurrence, or what were the circumstances and consequences of this behavior, we can only infer that the relatively sudden decline of the behavior could have been a result of several factors: first, the treatment that was received; second, the possibility of a brief reinforcement history; and finally, the results may have been affected by the variations in the treatment that Jeremy received from the experimenter. Although to emphasize this last point we can compare the frequency achieved during the treatment period and the frequency that is currently being observed since Jeremy began working with a new instructor. There are no significant differences when comparing the results of the sessions where Jeremy worked with the instructor with the sessions he worked with the mother. However, this could be attributed to generalization as a byproduct of the treatment.

Although the teacher and Jeremy's mother were asked about the behavior of the subject at home and in the rest of his classes, no quantifiable measurement was carried out regarding how the treatment could have had an effect on other related behaviors. For instance, how the behavior of hitting other people, or banging the wall or the door with another part of the body other than the head, was affected.

In spite of the successful results regarding the head banging behavior, the measurement of the aforesaid effects is suggested for future studies.

There were no accurate measurements taken in this study regarding the generalization of the effects of the treatment on other settings or persons, for example, how the frequency of the treatment behavior was altered at the subject's home, and how the results were generalized in Jeremy's relation to other people, besides the teacher and mother. A more rigorous measurement of this aspect is thus suggested for further studies.

In this study, the experimenter acted as observer as well. Despite the fact that in applied studies it is not always possible to have complete control of the variables, the use of unbiased observers that do not simultaneously work as experimenters is suggested for futures studies.

REFERENCES

- Belfiore, P. J., Browder, D. M., Lalli, J. S., & Lin, C. H. (1989). Examination of the communicative functioning of self-injury through a descriptive analysis methodology. Paper presented at the annual conference of the Association for Behavior Analysis, Milwaukee, WI.
- Belfiore, P. J., and Dattilio, F. M. (1990). The behavior of self-injury: A brief review and analysis. Behavioral Disorders; Journal of the Council for Children with Behavioral Disorders, 16 (1), 23-31
- Cowdery, G. E., Iwata, B. A., & Pace, G. M. (1990). Effects and side effects of DRO of treatment for self-injurious behavior. Journal of Applied Behavior Analysis, 23, 497-506
- Day, R. M., Rea, J. A., Schussler, N. G., Larsen, S. E., & Johnson, W. L. (1988). A functionally based approach to the treatment of self-injurious behavior. Behavior Modification, 12, 565-589
- Favell, J. E., Azrin, N. H., Baumeister, A. A., Carr, E. G., Dorsey, M. F., Forehand, R., Foxx, R. M., Lovaas, O. I., Rincover, A., Risley, T. R., Romanczyk, R. G., Russo, D. C., Schroeder, S. R., & Solnick, J. V. (1982). The treatment of self-injurious behavior. Behavior Therapy, 13, 529-554
- Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1982). Toward a functional analysis of self-injury. Analysis and Intervention in Developmental Disabilities, 2, 1-20
- Iwata, B. A., Pace, G. M., Cowdery, G.E., and Miltenberger, R. G. (1994). What makes extinction work; An analysis of procedural form and function. Journal of Applied Behavior Analysis, 27 (1), 131-144
- Mazaleski, J. L., Iwata, B. A., Vollmer, T. R., Zarcone, J. R., and Smith, R. G. (1993). Analysis of the reinforcement and extinction components in DRO contingencies with self-injury. Journal of Applied Behavior Analysis, 26, (2), 143-156
- Pace, G. M., Iwata, B. A., Edwards, G. L., & McCosh, K. C. (1986). Stimulus fading and transfer in the treatment of self restraint and self-injurious behavior. Journal of Applied Behavior Analysis, 19, 381-389

- Reid, D. H., Parsons, M. B., Phillips, J. F., and Green, C. W. (1993). Reduction of self-injurious hand mounthing response blocking. Journal of Applied Behavior Analysis, 26, (1), 139-140
- Ricketts, R. W. (1986). Self injurious behavior: A community based prevalence survey. Self-injurious Behavior, 2,1-2
- Rojahn, J. (1986). Self-injurious and stereotypic behavior of noninstitutionalized mentally retarded people; Prevalence and classification. American Journal of Mental Deficiency, 91, 268-276
- Romanczyk, R. G. (1986). Self-injurious behavior: Conceptualization, assessment, and treatment. In K. D. Gadow (Ed.), Advances in learning and behavior disabilities (Vol. 5, pp. 29-56). Greenwich, CT:JAI Press.
- Smith, R. G., Iwata, B. A., Vollmer, T. R., and Zarcone, J. R. (1993). Experimental analysis and treatment of multiply controlled self-injury. Journal of Applied Behavior Analysis, 26, (2), 183-196
- Szymanski, L., Kedesdy, J., Sulkes, S., Cutler, A., & Stevens-Our, P. (1987). Naltrexone in treatment of self-injurious behavior: A clinical study. Research in Developmental Disabilities, 8, 179-190
- Vollmer, T. R., Iwata, B. A., Zarcone, J. R., Smith, R. G., and Mazaleski, J. L. (1993). The role of attention in the treatment of attention-maintained self-injurious behavior; Noncontingent reinforcement and differential reinforcement of other behavior. Journal os Applied Behavior Analysis, 26, (1), 9-21
- Zarcone, J. R., Iwata, B. A., Hughes, C. E., and Vollmer, T. R. (1993). Momentum versus extinction effects in the treatment of self-injurious escape behavior. Journal of Applied Behavior Analysis, 26, (1), 135-136