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Reduction of self-injurious behavior: A positive approach

Abstract

The occurrence of self-injurious behavior is familiar to many special education teachers, although it may be referred to in a variety of ways. Self-destruction, self-mutilation and self-abuse are all terms that are often used interchangeably to refer to behaviors that one incurs upon himself/herself.

Reduction of Self-Injurious Behavior:
A Positive Approach

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UNIVERSITY OF NORTHERN IOWA

by
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Reduction of Self-Injurious Behavior:

A Positive Approach

The occurrence of self-injurious behavior is familiar to many special education teachers, although it may be referred to in a variety of ways. Self-destruction, self-mutilation and self-abuse are all terms that are often used interchangeably to refer to behaviors that one incurs upon himself/herself.

Self-injurious behaviors are exhibited by persons across populations; this is not a phenomena limited to persons with severe mental retardation (Zirpoli and Lloyd, 1987). Many approaches have been examined in attempts to modify or reduce the incidence of self-injurious behaviors, although many of these approaches have been aversive in nature. The intent of this study is to examine the effectiveness of a positive intervention aimed at reducing the hand-biting of an eighteen-year-old young man.

The importance of finding effective interventions for the treatment of self-injurious behaviors can be described from several different perspectives. Of utmost importance is the potential damage to the person who engages in self-injurious behavior. Some persons have been known to cause lacerations, bruising and permanent scars through their own actions. Further, potential for more serious injuries exists as self-injurious behaviors continue. While it is thought that pain is not always felt by the person who

is involved in the behavior (Zirpoli and Lloyd, 1987), this injurious behavior at the very least, will interfere with the learning of the person involved (Durand and Carr, 1985; Rammer and McCarthy, 1983).

Related to the interference with learning that is created through the obtrusion of self-injurious behaviors are the problems that exist when learning is to take place in the community (Durand and Carr, 1985). An increasing number of special education students are receiving vocational and other skill training in the community. When self-injurious behaviors are present, it becomes difficult to provide instruction in the community. Not only do the behaviors interfere with learning, but they are also the cause of social alarm. The inappropriate nature of the behaviors causes long-term concern as well as the improbability for community acceptance.

The problem of finding effective interventions for the treatment of self-injurious behaviors is evident. Not only is the potential for harm a concern, but the interference with learning in appropriate settings is equally disconcerting. The purpose of this study, then, is to determine the effectiveness of a positive intervention on the self-injurious behaviors of an eighteen-year-old young man who is learning and working in the community.

Definition of terms

Because many of the terms used in this paper are specific to the field of special education, a definition is necessary to clarify the writer's intent.

Self-injurious behaviors - behaviors that are inflicted upon oneself that cause pain or leave physical marks or scars.

Severely handicapped - an individual with an IQ of 50 points or lower. The individual will many times also have multiple disabling conditions.

Non-aversive behavior management - non-punishing treatment methods.

Aversive behavior management - treatment methods that involve punishment.

REVIEW OF LITERATURE

Prevalence

Teachers of students with severe handicaps are not the only ones who must address self-injurious behaviors in their clients or students. While the existence of self-injurious behavior seems to be most frequently associated with the severely handicapped, a study of the prevalence of such behavior across populations indicates otherwise (Zirpoli and Lloyd, 1987). In a review of the literature, Zirpoli and Lloyd reported varying degrees of involvement observed across several populations. Institutionalized psychiatric patients had an incidence of 4.3% cited and was the lowest incident group. Institutionalized mentally retarded persons and a group of mentally retarded, emotionally disturbed children and adults held the next lowest incidence percentages with 8% and 9% respectively. The highest ratio of persons exhibiting self-injurious behaviors were found in a group of institutionalized juvenile delinquent females and a group of institutionalized psychiatric children, reporting 86% and 40% respectively. The remaining groups involved in the study had rates of prevalence ranging from 10% - 15.5%. These groups contained samples of non-handicapped children,

ages birth to 32 months, and several different disability groups.

While this research dispels the common belief that self-injurious behavior belongs only to the most severely handicapped persons, it reinforces the need for special educators to be well-informed in techniques for reducing these behaviors. The review under examination shows that when considering the populations at risk, most are those who would be eligible for a special education program of some type. An approximate ratio would involve one student with self-injurious behaviors among each group of eight. This information translates to an estimate that most teachers in self-contained or self-contained with integration classrooms will find a student each year in his/her class that experiences self-injurious behaviors. It is imperative that teachers be able to use effective interventions, therefore, understanding the causes of behavior would also be beneficial.

Etiology

There are varied theories to explain the causes of self-injurious behaviors. This portion of the literature review will provide the reader with an overview of three explanations for the behavior and a summary of the review.

Zirpoli and Lloyd (1987) have determined three causes for self-injurious behaviors. The first of these three is biological. The biological perspective maintains that self-injurious behaviors stem from biochemical or neurological problems. These problems may cause a higher threshold to pain or a greater need for stimulation. Two syndromes, Lesch-Nyhan syndrome and Cornelia de Lange syndrome are characterized by very high levels of self-injurious behavior, indicating a biological origin. It is also suggested that the incidence of self-injurious behaviors may originate from a biological abnormality, but is maintained or increased through the environment (Zirpoli and Lloyd, 1987). The implications of this biological explanation for the classroom teacher is that an individual may sometimes require medical treatment or hospitalization, but the structure of the environment is also extremely important in the treatment.

The second explanation for self-injurious behavior provided by Zirpoli and Lloyd (1987), is psychological. This means that the person is responding to a lack of stimulation, frustration or anger. This explanation is supported by several bodies of research. Burke, Burke and Forehand (1985) were able to support the hypothesis that self-injurious behavior increases in the absence of interpersonal interactions. These findings were reported in research conducted with eight severely handicapped

adolescents. Additional research conducted by Reuter, et. al. (1984) supported the psychological view that self-injurious behavior increased under conditions of stimulus deprivation. Further, self-injurious behavior was found to be recorded more frequently when students were engaged in difficult tasks, again supporting the frustration theory (Durand, 1985). Obviously, when supporting this theory, a classroom teacher would need to keep in mind that there are support services available when working with children who have abusive behaviors. A school psychologist can be invaluable.

The final area, supported by Zirpoli and Lloyd (1987) as a cause of self-injurious behavior, is a behavioral theory. This area is explained by theories of operant conditioning and behavior modification (Skinner, 1964). If the behavior is reinforced, it will be maintained. When a child is able to reach the desired end through the means of self-injurious behavior, then the behavior will continue.

The second piece of literature addressing the aetiology of self-injurious behavior refers to the four motivating conditions: social attention, tangible consequences, escape from aversive situations, and sensory consequences (Durand and Carr, 1985). Social attention is a behavioral explanation. Empathetic or punishing comments serve to attract attention and therefore maintain the behavior.

The desire for tangible consequences or an escape from aversive situations can also maintain or increase self-injurious behaviors (Durand and Carr, 1985). This research concludes that the absence of favored tangibles can serve to increase the behavior, while an increase in favored tangibles will reduce self-injurious behaviors. Through careful study of the occurrence of these behaviors a classroom teacher can make effective decisions about what is causing the behavior and make changes that will reduce or eliminate it.

The sensory consequences provided by self-injurious behaviors may be a fourth factor that serves to maintain the behavior (Durand and Carr, 1985). This theory suggests that replacing the self-injurious behavior with another form of stimulation may aid in the reduction of the behavior. Some examples in the classroom would be art projects using a variety of textured materials, riding an exercise bicycle, playing video games, or a variety of other activities depending on the type of behavior that the teacher is trying to reduce.

Longo, et. al. (1981) supply the most concise explanation for the cause of self-injurious behaviors. They contend that the medical view implies that self-injurious behavior is a severe type of psychosis and should be treated in an extreme manner. The behavioral view contends that all

self-injurious behaviors are learned and should be treated as such.

A cursory look at these three views, suggest that they are distinctively different. A closer examination, however, reveals that all three are very similar. The incidence of self-injurious behavior (in any given case) can probably be attributed to one of three things: biology, psychology, or behavior. The numerous additional explanations (sensory, medical, attention, escape, etc.) are sub-categories of these three groups. The role of the teacher, then, is to determine whether the behavior is being maintained through biological, psychological or behavioral means and then to apply effective, positive management techniques to help the student reduce the frequency.

Treatment

"The most reliable effective methods of treatment involve some form of punishment" (Durand and Carr, 1985, p. 173) The preceding statement is typical of the literature addressing self-injurious behavior. There is overwhelming research supporting aversive techniques in working with students who have some type of self-injurious behavior. A similar view, that an aversive procedure must be used to suppress negative behavior before the positive behavior is reinforced was also revealed in the literature

(Gaylord-Ross, et. al. 1983). Yet, educators must always consider the negative aspects of punishment as well as the legal and ethical implications before using an aversive intervention. Punishment, often times will evoke negative emotional responses or avoidance of the punisher (Hilton, et. al. 1983).

It may also cause poor behavior by the student due to the modeling effect. Longo and associates (1981) identify three ethical/legal considerations when deciding on an intervention techniques. First of all, the doctrine of least restrictive alternatives encourages a teacher to begin with positive approaches and to use a negative approach in only the most extreme cases when positive approaches have failed. Secondly, cruel and unusual punishment should never be used. Lastly, informed consent must be obtained from parents or guardians before any kind of program is enacted.

The consideration of these three points helps many, including this writer, to consider non-aversive approaches for the management of self-injurious behaviors.

Extinction, negative punishment, and DRO are all methods supported by Zirpoli and Lloyd (1987). Extinction involves determining what is currently reinforcing the behavior and withholding that reinforcement. Negative punishment involves removing a positive event or thing from the person when the behavior occurs. DRO involves

reinforcing the person if the behavior has not occurred within a specified period of time.

A variation of DRO is Differential Reinforcement of Communication or DRC (Durand and Carr, 1985). DRC was found to be effective in decreasing the self-injury of three children; they were taught alternative methods of getting attention or relaying needs (Durand and Carr, 1985).

A different approach to the treatment of youth with self-injurious behaviors was taken by Reuter, et. al. (1984). Reuter and her colleagues hypothesized that the self-injury was caused by psychological feelings of boredom or frustration during times of non-activity. They found that self-injury increased during times of stimulus deprivation, and consequently, decreased after positive interactions with people.

The approaches described here are all of a non-aversive nature. While some success has been documented in this literature, a need exists for further research in the area of using non-aversive techniques to reduce the self-injurious behaviors of people and consequently to increase positive behaviors.

METHOD

Subject

In order to protect the client's identity the subject will be indentified as Jim. Jim is an eighteen-year-old male who attends school in a self-contained building for students with severe disabilities. His IQ is approximately 40, but it is difficult to measure consistently because Jim also has a cerebral commissure. This condition is also known as the split-brain syndrome. His functioning level is not measured by grade level or academic achievement tests. Rather, Jim's level of functioning is measured by skill acquisition. He is currently able to work in the community with staff support for up to 2 1/2 hours a day. Jobs include repetitions of tasks containing up to fifteen steps. In the community, Jim is able to locate and purchase a limited number of items. He is also able to order and purchase food in a restaurant. With some prompting, he can do some basic cleaning. While Jim has acquired some fundamental skills, his basic limiting factor is that of self-abusive behaviors. At the point of frustration or discontent, he will often bite himself. Not only is this behavior socially unacceptable, but due to the severity, Jim has scars and lacerations on his hands, and the behavior is becoming a physical threat to him.

Setting

Because Jim's school program involves many different settings, the treatment and this study were implemented across settings. The day always began at school, then proceeded to the community job site. The afternoons were spent in a variety of school or community settings.

Behavior Measured

Although Jim has a variety of behaviors that warrant reduction, the most severe of these is self-biting. As mentioned earlier, Jim bites his hand at times of discontent or stress. Regardless of the duration or intensity of the bite, each was recorded as a single incident.

Observational Procedures

Due to the nature of Jim's behavior, he requires continuous supervision, therefore constant observation was possible. For at least one hour per week, interrater reliability was utilized to ensure consistency of behavior counts. Instances of biting were recorded on note cards in one hour intervals throughout the day.

Design

Because of the potential harm to Jim if the behavior continues, the intervention procedure was not discontinued, reduced or altered. As a decline in the behavior was observed, it was decided that maintaining the consistency of the intervention and the reduction in the target behavior was of primary importance.

Procedure

A positive reinforcement procedure utilizing Differential Reinforcement of Other Behaviors was initiated. A fixed interval schedule of five minutes was used at the onset of the program, with the interval increasing to fifteen minutes. The staff member working with Jim used a timer to measure the intervals. If Jim bit his hand, the staff member would reset the timer and tell Jim that he/she had done so because he had bitten himself. Whenever the timer went off, indicating that Jim had gone the entire five/fifteen minute interval without biting, he was reinforced with verbal praise and edibles, the most effective reinforcers to Jim.

Results

Baseline data of Jim's handbiting behavior showed an average of 11.8 occurrences per day, with the most frequent occurrences in a single school day being 19. When the DRO intervention was initiated, the incidence of behavior became erratic, dropping at first, then going back up and down for about ten days. After the third full week of intervention, the incidence of behavior had stabilized at a decreased rate. At that time the fixed interval was increased from five minutes to fifteen minutes. This change did not appear to have a negative effect on the behavior change. The low rates of behavior were maintained with an occasional day of higher rates of behavior. During the last week of the project, the week of May ninth, the average frequency of the hand-biting behavior was one and eight tenths instances per day. The two weeks prior to May ninth showed even more positive results with four tenths instances per day being the average each of those weeks. During the last three weeks of the project, there were nine days in which Jim exhibited no hand-biting behavior.

DISCUSSION AND CONCLUSION

The results of this research indicate that a positive intervention, such as DRO, can be effective as a treatment in the reduction of self-injurious behavior. This seems to be inconsistent with past research in the area. While positive approaches are more acceptable to pre-service and practicing teachers (Reimers, et. al. 1987), the more negative approaches such as time-out, extinction and response cost are documented to be more effective (Durand and Carr, 1985; Epps, 1983).

One of the reasons for the presumed effectiveness of aversive procedures is that the aversive procedure must be in effect to suppress the injurious behavior. Differential reinforcement alone is not believed to aid substantially in the decrease of behavior (Gaylord-Ross, et. al. 1983). The data from this subject, however, challenges that premise. DRO was used independently to show a dramatic decrease in the targeted behavior.

On the other hand, DRO was applauded as a possible effective treatment for students who experience self-injury (Hilton et al, 1983). Hilton and his colleagues went on to deplore the use of punishing interventions, as well. These authors stressed that all behaviors are learned behaviors and only by choosing to reinforce positive behavior can we help students to make a change (Hilton, et. al. 1983).

The use of a DRO procedure does just that: reinforces behaviors other than the targeted behavior for reduction. Another possible explanation for the effectiveness of DRO on a frequent schedule is the increase in personal contact. With this program, Jim was reinforced, which involved social praise each time, on a five minute schedule to start and later on a fifteen minute schedule. This continual interaction may partially account for the reduction as well. Burke, et. al. (1985) found that as positive interactions increased, the injurious behaviors decreased. A combination of DRO and positive interactions proved to be effective for Jim.

There are two obvious limitations to this study. A single subject is not sufficient to determine the results of this research as conclusive. Also, because a research design was not utilized, no check on the actual cause of the behavior reduction was made.

Taking the results and limitations of this study into account, the conclusion can be made that the DRO procedure used in this study appeared to be effective in reducing Jim's hand-biting. Further research using the same or similar procedures with larger groups of students is in order. As a practicing teacher, this study suggests that one must not rely on aversive techniques, but rather focus on the positive. It can and has been effective!

REFERENCES

- Burke, M., Burke, D., Forehand, R. (1985). Interpersonal antecedents of self-injurious behavior in retarded children. Education and Training of the Mentally Retarded, 20, 204-208.
- Durand, V. and Carr, E. (1985). Self-injurious behavior: Motivating conditions and guidelines for treatment. School Psychology Review, 14, 171-176.
- Durand, V. (1982). Analysis and intervention of self-injurious behavior. Journal of the Association for the Severely Handicapped, 7, 44-53.
- Epps, S. (1983). Designing, monitoring and implementing behavioral interventions with the severely and profoundly handicapped. Des Moines: Iowa State Department of Public Instruction.
- Gaylord-Ross, R., Weeks, M., Lipher, C. and Gaylord-Ross, C. (1983). The differential effectiveness of four treatment procedures in suppressing self-injurious behavior among severely handicapped students. Education and Training of the Mentally Retarded, 18, 38-44.
- Hilton, A., Peterson, D., Peirson, J. and Carter, M. (1983). Alternatives to punishment: A panel discussion. In Hilton, A. (ed.). Effective Practices and Services

for the Severely Handicapped and the Autistic.

Billings: Eastern Montana College.

Longo, J., Rotatori, A., Kapperman, G. and Heinze, T.
(1981). Procedures used to modify self-injurious behaviors in visually impaired, mentally retarded individuals. Education of the Visually Handicapped, 13, 77-83.

McFadyean, K. and Nelson, D. (1983). Self abusive- self stimulatory behavior: Deceleration - trial and error. In Hilton, A. (ed.). Effective Practices and Services for the Severely Handicapped and the Autistic. Billings: Eastern Montana College.

Rammer, J. and McCarthy, D. (1983). Decelerating abusive and self-stimulatory behaviors while simultaneously accelerating 'on-task' behaviors. In Hilton, A. (ed.). Effective Practices and Services for the Severely Handicapped and the Autistic. Billings: Eastern Montana College.

Reimers, T., Wacker, D. and Koeppel, G. (1987). Acceptability of Behavior Interventions: A Review of the Literature. School Psychology Review, 16, 212-227.

Reuter, J. (1984). Self-injurious and self-stimulation behavior in brain damaged children. Paper presented at the meeting of the Midwestern Psychological Association.

Zirpoli, T. and Lloyd, J. (1987). Understanding and managing self-injurious behavior. Remedial and Special Education, 8, 46-57.