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Karoline Kenville

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Study of Self-Injurious Behaviors and the Intervention with Visual Supports

by

Karoline Kenville

Thesis

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Thesis Committee:

Gilbert Stiefel, Ph.D, Chair

Derrick Fries, Ph.D

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Abstract

The intent of this research was to investigate the use of visual supports for individuals who suffer from Self-Injurious Behaviors (SIB) stemming from developmental disabilities such as Autism Spectrum Disorder (ASD). It has been determined that there are many causes of SIB in individuals with ASD, and while some theories are no more than untested assumptions, there is validated research on behavioral patterns that suggests that evidence-based practice of visual supports may effectively be used as part of an intervention to modify behaviors. *Visual supports* refers to the range of procedures through social stories, checklists, and video modeling that assist in creating positive behavioral supports for individuals with ASD. These supports are tools that can teach individuals with ASD self-regulation and de-escalations strategies to manage the SIB. This study is intended to expand on studies which indicate that visual supports can teach self-management skills to aid in an individual becoming more aware of his/her own actions.

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Literature Review

Individuals with Autism Spectrum Disorders (ASD) are known to engage in behaviors that result in physical injury to their body (Self-Injurious Behaviors, SIB). The most common forms of these behaviors are head-banging, biting, rubbing, scratching, hitting, and picking (Richard, Oliver, Nelson & Moss, 2012). SIB also occurs in connection with other disorders like alcohol abuse, drug abuse, post-traumatic stress disorder, eating disorders, personality disorder, and it rarely occurs in isolation from other symptoms or disorders (Mueller & Nyhan, 1982).

SIB, are, arguably some of the most distressing behaviors exhibited by people with developmental disabilities (Edelson, 2013). The exact cause/s of self-injurious behaviors are unknown, but could be related and not limited to chemical imbalance, sinus problems, headaches, seizures, ear infection, frustration, sensory input, sensory overload, or task avoidance (Edelson, 2013). SIBs are relatively common in individuals with ASD with 50% of individuals in one study reported to have engaged in such behaviors (Baghdadli, Pascal, Grisi, & Aussilloux, 2003). The diagnosis of ASD is increasing across the world and with the increase of diagnoses there has been concern in developing successful interventions for SIB in individuals with ASD (O'Reilly, Sigafos, Lancioni, Edisinha, & Andrews, 2005).

Depending on the case and the individual, some triggers to SIB have been proposed as a self-stimulation, which often occurs without apparent environmental causes (Edelson, 2013). This means that SIB are understood as being sustained by self-induced stimulation of the senses and helps strengthen both sensory and social development. Neuropsychological models and cases result in either under or over-sensitivity to stimulation (Richard et al., 2012). SIB can also be a form of self-stimulation that corresponds with the idea that respective behaviors provide under-aroused individuals with stimulation. One study (Richard et. al., 2012) showed that allowing an

individual to replace the stimulating effects of SIB with more appropriate behaviors could decrease the negative and problematic behaviors. An ABAB design research study by O'Reilly, Sigafoos, Lancioni, Edisinha, and Andrews in 2005 used visual supports as an intervention to decrease SIB in a twelve-year-old boy with ASD. This study examined the effects of an individualized schedule, based on a functional analysis, produced substantial reduction in SIB and increase engagement. The schedule of activities was evaluated within the context of his regular curriculum. The results of the functional analysis suggested that the SIB was associated with the academic demands and rarely during play or peer interaction. The schedule was implemented at the start of each day and during transition periods. Not only did this intervention decrease the SIB, it also increased academic engagement by 70% and was maintained for 5 months (O'Reilly et al., 2005).

Assessment for SIB Intervention and Antecedents

When collecting assessment information, it is important to collect baseline data of the self-injurious behaviors. This baseline might include historical data concerning the individual's physical and mental health, cognitive and emotional regulation, behaviors, family history, cultural values, and peer relationships (Walsh, 2006). These data might also consist of the number of physical wounds, their patterns, and how often the individual is engaging in any particular behaviors. Prior to SIB treatment, having adequate baseline data on the individual's behaviors and history will inform the target of the intervention and provide a foundation for measurement of the individual's progress (Walsh, 2006).

Identifying the antecedent is crucial in creating an appropriate intervention program for the individual suffering from SIB (Manhatmya, Zobel, & Valdovionos, 2008). All interventions ought to examine the relationship between antecedents and the undesired behaviors. When

antecedent stimulus can be identified, an intervention can be created to ultimately reduce SIB. Functional behavior assessments and analyzing the individual's actions can help identify the antecedents to the SIB. For successful treatment, it is important to determine these functions and then create a treatment based on these functions (Manhatmya et al., 2008). Antecedent intervention methods emphasize the use of positive interventions that manipulate the antecedents that set the occasion for SIB (Humenik, Curran, Luiselli, & Child, 2008). When identifying a behavior it is essential that the behavior is defined objectively with clarity and completeness (Kazdin, 2001). The criteria for defining behaviors must start with specifying the general domain; in this case the domain would be self-injurious. Objectively defined behavior measures observable characteristic of a behavior or events. Clarity is defined as the behavior's description is unambiguous to the extent that it could be replicated (Kazdin, 2001). Completeness is a delineation of the boundary conditions maintaining a response that is to be included and excluded is enumerated (Kazdin, 2001). If the range of responses included in the definition is not described carefully, observers have to infer whether such behavior has occurred and failure to have a delineated definition allows for inaccurate data collection (Kazdin, 2001). These are the very first steps in a functional analysis.

Direct Observation is the viewing of the targeted behaviors in a situation while taking data on the antecedents and consequences associated with the behavior and is the functional analysis. This information is required for a functional analysis (Cooper, 2007). This process can occur through a two-sided mirror or in the same environment as the subject. It is important not to place any gaps between the antecedents, the behavior and the consequence (ABC). The intent of the behavior assessments is to determine the function of the behavior, which is the first step towards developing a treatment plan. When an individual engages in SIB, these behaviors

become the primary treatment target. A functional analysis will collect data on the behaviors to determine the antecedent of the behaviors. The functional analysis, then, will support the reasoning for the intervention with the possible use of visual supports.

Intervention with Strengths for Visual Supports

Social skills, especially in areas of verbal and physical communication, are common challenges for individuals who have ASD. Communicating with others is an important aspect of life and having a difficult time communicating can negatively affect other areas of an individual's daily routine. Many individuals with autism have deficits understanding even the seemingly simplest forms of communication from others (Hodgdon, 2000).

Visual Skills and Visuals Supports

Many individuals with ASD have strong visual skills and these strengths can be capitalized on with visual supports; though verbal communication can be an area of difficulty when treating an individual with ASD, using an individual's strengths to exploit their area of weakness could help compensate for that particular weakness. With the help of visual supports, an individual with ASD has a better opportunity to understand and comprehend what is expected (Wilkinson, 2008). Visual communication tools such as objects, photographs, symbols, checklists, and schedules could all provide that necessary support to improve an individual's communication, which in turn would help prevent SIB stemmed from communication issues.

Visual acuity (color, texture, etc.) and visual discrimination do not appear to be affected by autism. For many nonverbal individuals with ASD, measures of ability are obtained skills through assessments of visual motor skills. Recent studies have suggested that the extraordinary skill in noticing minor features and changes in the environment reflects an enhanced visual processing ability for individuals with ASD (O'Riordan & Passetti, 2006; Hayes, 1987).

Visual supports are made to improve communication, interaction, and understanding all while reducing anxiety, confusion, and frustration (Hodgon, 2000). Because individuals diagnosed with ASD have a tendency to respond to visual cues, visual supports may be used to create positive behavior supports for the individual. The visual support teaches the individual a way to cope, self-regulate, or communicate in an easy and efficient manner (Roa & Gagie 2006). These supports include the use of illustrations, photos, sketches, symbols, and text that are customized, in regard to both function and design, to the individual's assessment (Schneider & Goldstein, 2009). It is important to ensure that the visual supports are appropriate for the individual and modified uniquely for his or her needs. Visual supports can help an individual learn how to recognize and manage the antecedent behaviors, that which typically escalate into SIB (Roa & Gagie, 2006). Managing those undesired behaviors through visual supports helps create a learned behaviors to decrease the occurrences of SIB (Schneider & Goldstein, 2009; Roa & Gagie, 2006).

How Visual Supports Work

Roa and Gagie (2006) report that visual supports improve communication skills in individuals with ASD. Visual supports can serve in the facilitation of task analysis and the breakdown of tasks into manageable steps (Wilkinson, 2008). This allows for independence in areas such as adaptive social skills and academic tasks.

Visual supports are beneficial for focus, concentration, imaginations, transition, and creating mental pictures (Roa & Gagie, 2006). Visual memories also help connect the smaller parts of a conversation to an entire schema, aid in communication, and reduce frustrations (Roa & Gagie, 2006). Visual supports are critical aspects of an intervention program because they

enable students to integrate the elements of their experience and, thereby creating less demand on the individual's memory (Schneider & Goldstein, 2009).

Video Modeling

Video modeling is a form of observational learning in which the individual, through watching and imitating a video demonstrating the modeled behavior, learns the preferred behaviors. Through imitation and role-playing, video modeling can be used to strengthen social skills, communication, and athletic performance. A variety of behaviors can be observed in these models such as functional and academic language skills, social skills, and cognitive abilities (Roa & Gagie, 2006). Video modeling also helps decrease certain behavioral problems including tantrums and aggression. Video modeling supplants face-to-face interactions and allows the individual to process visual information more readily than verbal information; this modeling also provides support for attention, stimuli, and visually cued instruction. Video modeling creates a learning opportunity for individuals with ASD to acquire self-regulating skills used to decrease SIB (Roa & Gagie, 2006; Schneider & Goldstein, 2009).

Social Stories

Although social stories are not necessarily visual supports, per se, they are often used in conjunction with other visual supports and so are included here. The goal of a social story is to share accurate information in descriptive sentences that coach an individual to clearly identify a topic. Social Stories can be written as visual guides for individuals with ASD that have accurate information that describes social interactions, behaviors, situations, or skills that is easily understood by the individual (Gray, 2010).

Social stories are created on an individualized basis and assist individuals with ASD to understand social situations by delineating an appropriate behaviors while providing appropriate

responses. These stories outline steps for implementing the appropriate skills that include information in a variety of circumstances. Social stories can be used to aid the individual in a variety of ways, ranging from social interactions to dealing with their own emotions; they can also aid in medical, personal care, and safety. Individuals may revisit their stories with some frequency to continue to benefit from the desired effects (Schneider & Goldstein, 2009). Social stories can be used to educate and model appropriate social interaction by describing a situation with relevant social cues, alternative perspectives, and suggested appropriate behaviors (Schneider & Goldstein, 2009). Social Stories need to have descriptive sentences that give details about the situation so a child could recognize when the situation actually occurs. Perspective sentences ought to tell the details of one of the child's possible feelings and appropriate responses. When the antecedent to the SIB occurs, a social story can be referenced for assistance on future events. After SIB occur, social stories can be used to give examples of what more preferred responses ought to be (Schneider & Goldstein, 2009). Social Stories are visual supports because they similar to "mini personalized books" created particularly for an individuals need. These "personalized books" (social stories) can be a tangible such as created on an iPad or paper form.

Checklists

A checklist provides a firm foundation for organization and structure for an individual with ASD. Individuals with ASD benefit from having checklists to decrease challenging behaviors, by providing a more specific routine for any given procedure. Checklists can be used as a helpful device for an individual to predict and choose their daily activities; a checklist might become especially useful when the individual is experiencing changes in his or her typical

routine. Checklists often provide skill development and promote independence (McClannahan & Krantz, 2010).

It is evident that SIB is a distraction from one's constructive use of time, but the uses of checklists provide organization and structure, which allows for productivity throughout the day. Checklists help reduce confusion and aid in the initiated task more quickly and efficiently. An individual using a checklist can be more accountable by providing visual reminders and cues for their behaviors, routines, and expectations. Like all visual supports, checklists can be used to address needs in an individualized way for adults and children with ASD to reduce SIB (Roa & Gagie, 2006).

Traditional tools such as calendars, planners, maps, and books can be used as visual supports for assisting in daily life. Visual supports can be used for students with ASD starting as early as possible and then can be carried into adulthood, as they are a connecting piece between communication and behavioral challenges. Visuals supports can be used in any environment necessary to ensure proper communication, social interaction, and positive behaviors (Hodgdon, 2000). With the help of visual supports, it is expected that more tasks will be completed and an individual will thus increase their independence (Wilkinson, 2008). Using visual supports as an intervention may increase the processing of learning while decreasing the levels of frustration, anxiety, and aggression (SIB) related to task, transition, and other challenging situations (Wilkinson, 2008).

Thesis Introduction

In this study, visual supports were used to create functional communication and alterative behaviors. I used a checklist to identify the proper sequence of events or tasks. Video modeling was used to model the desired behaviors during tasks or transitions. Social stories were used to

help identify appropriate behaviors when in the same environment as peers as a visual support. These interventions were systematically implemented during the times in which previous data indicated the antecedent to the highest probability of SIB (during unsuccessful task, transitions, avoidance, and lower-level noncompliant behaviors). These materials were introduced prior to the intervention process to familiarize the child.

Will the use of visual supports in conjunction with other methods of ongoing therapy *further* reduce the incidence of SIB? The ongoing treatment, which will be described later, had been in place prior to the visual supports intervention. Both the ongoing treatment and visual support intervention will be described in the methodology section. The visual supports are additional components to the treatments with the goal of further reductions (goal of reducing) in SIB.

It is hypothesized that with the assistance of the implemented visual supports, the SIB will be *further* reduced by, either decreasing the behavior or changing the behavior completely. Consistency is important for maintaining and expanding on productivity of the services and its effectiveness. It is important for all caregivers to learn techniques through communication training in order to assist in the elimination of the injurious behavior.

Methodology

This single subject study focuses on self-injurious behaviors (SIB) and is based on the assumptions that visual supports will help decrease the frequency of SIB. This is a case study of a 5-year old boy with high-functioning autism whose motive for this behaviors might be inferred as “frustration” in as much as the SIB appears to be triggered by the unsuccessful completion of tasks, unavailable access to tangibles, transitions between a preferred and less preferred activity, an insertion of control in a less preferred task or when he simply wishes to avoid a less preferred

tack. There were three specific SIB targeted in this thesis they are as follows: a forceful open-hand hit (slap) to the head, forcefully running into a wall head first and forcefully bringing those objects that were in close proximity to strike himself in the head with the object. All three of these targeted behaviors were repeated during each occurrence. The occurrence was defined as an interval of rapid/repeated occurrence of one or more of the targeted behaviors with no more than a 5 second laps between repetitions of behaviors.

The antecedents are believed to be the conditions that lead the student to engagement in SIB. I have identified contextual antecedents of the student's behavior prior to SIB. I have recorded the frequency of SIB as baseline data. I then implemented the use of visual supports described earlier as an additional intervention for decreasing the frequency of SIB in these contexts. The data indicated that the SIB most often occurs during times of transition and the task of hand-washing. Transitions may results in challenges in behaviors for a child with ASD when having to move from one task to another, from one place to another, or from one experience to another. Transitions often signify moving from known to unknown or simply a change in expectations. Transitional warnings allow an advanced notice before a change occurs to make the coming events predictable and less surprising. In the initial stage (before visual supports were added), transitional verbal warnings were given prior to the changes in activity. (For example, "Johnny, in 2 minutes we will be going outside.") During the intervention stage which included visual supports, transitional warnings were changed to a visual checklist (schedule), with verbal prompting 2 minutes prior to the transition. The student was required to participate in the reading of his visual checklist to ensure paying attention. The student was given another transitional warning at 1 minute prior to the transition. Prior to the task of hand washing required that tutor used a hand-over-hand partial prompt technique to ensure effective hand

washing. During hand-washing is when objects in the close proximity grabbed by the student and then was used to make forceful contact to his head. The sink is located near a wall in the bathroom, during this time the student would often engage in SIB by banging his head into the wall next to him. It was important to ensure that all blocking of these behaviors was required, to the best of the ability of the staff member involved. During the task of hand-washing no visuals were used prior to the intervention, however during the intervention I used video modeling and a checklist as a prompt for effective hand-washing without SIB. Based upon prior sessions, I knew the task of hand-washing was going to occur for the first time in a session the video model clip was to be watched and commented on accordingly. During hand-washing a visual checklist was posted on the wall in sight for the student to reference. Both expressive and physical prompts were used and faded as the student became familiar with the visual support. Other incidents in which SIB occurred was in avoidance to task and non-compliance when a demand was placed. When transitioning from a preferred to a non-preferred task, the student would hit himself in the head with an open hand along with running into walls head first and verbal behaviors. The visual supports will give alternative behaviors that are rewarded via a token economy system. The intervention created will be a visual support that will aid in socio-emotional control with the goal of decreasing SIB. The goal of the behaviors modification is to teach an individual how to control the individuals' behaviors, achieve self-selected goals, and participate adaptively in everyday life without the support of an intervention. Capitalizing on the student's strength of visual perception, visual supports ought to target the antecedent behavior prior to SIB with the anticipation of decreasing the SIB.

Positive reinforcement is the increase in the frequency of a behavior following the presentation of a (positive) stimulus. The main goal of a reinforcement program is to reduce the

undesirable behavior. Though, this is a technique for increasing the desired behaviors and engages in any behaviors of the targeted response (Cooper, 2007). On the contrast, negative reinforcement is a stimulus whose termination functions as a reinforcement, ending a task or environmental effect early upon compliance or completion (Cooper, 2007). Escape is known to be a contingency that the response terminates the ongoing activity or environmental effect. The antecedent is the environmental condition that in which occurs immediately prior to a behavior of interest. The behavior is the activity of living organisms that portion of an organism interaction with its environment (Cooper, 2007). Through space and time the organisms' interaction can be measured through public events. In this thesis the behavior is self-injurious.

Participant

The student was clinically diagnosed with Autism at the age of 3.11 when his parents had concerns about his social delays and self-injurious behaviors (SIB). This student has recently enrolled into an early intervention program for 15 hours a week, working with a behavior tutor and a board certified behavior analyst. This student has strengths in visual perception and retention to memory. In terms of visual perception, this student has demonstrated strong visual acuity with 20/20 vision. In terms of memory, this student has previously shown the ability to recite and recall previous events with delineated details. During this student's intake for services, our behavior analyst administered the Assessment of Basic Language and Learning Skills (ABLSS) for evaluation to identify what needs to be targeted for educational goals. These results indicated that the student has high levels of behavioral deficits that are commonly associated with Autism. These behavioral deficits are in the area of noncompliance, mild to moderate behavior escalation, repetition, and unusual intensity. By the age of 5, the student has memorized third grade reading level books and often scripts his favorite movies and television

shows. This student is able to read at a level significantly higher than his peers. We are unsure if this student's behavior is to fulfill a sensory need, escape the demands of undesired situations or events, gain attention, or obtain tangibles. The student is in need of early intervention to help control his SIB and self-regulation of socio-emotions.

Operational Definitions

Through observation, it has been identified that the student partakes in SIB with unsuccessful completion of tasks, transitions, avoidance, or noncompliant behavior and unavailable access to tangible items. The student typically will grind or clench his teeth and begin making a "groaning" sound in the back part of his throat that is associated with heavy breathing following an antecedent to the behavior. At this point, his behavior tutor will attempt to prevent this behavior from escalating into SIB. When the escalation occurs, this student will frequently open-hand bring his hand to the temporal region of his head with force (slapping). Depending on the location, the SIB can escalate to the extremity of forcefully bringing objects in the close proximity to the temporal region of his head. The escalation of his behavior also may result in running at his fastest into a wall and simultaneously hitting his head. The student appears to be unaware of the severity and extremity of his SIB. The duration of this behavior varies depending on the reinforcer and antecedent.

Procedure

During this study the use of baseline data from a functional assessment was used in order to form a hypothesis of the functions of the behaviors. The data collected disclosed the relationship between the SIB and the antecedents and consequences of the behavior. I observed this individual in clinical and home environments to create a conclusive collection of data. I looked at two applications of design that include multiple baselines and the A-B-A-B design.

An A-B-A-B design is an experimental design consisting of a baseline counter therapeutic trend, an intervention phase a return to baseline (no intervention) and finally a second intervention phase to identify whether the initial treatment effects are replicated (Cooper, 2007). This is a single subject research that will compare different conditions presented to one individual over time and this design will allow me, the researcher to examine the pattern and stability of performance of the single subject. The A-B-A-B design allows for the intervention to follow the pattern of examine the behaviors with the influence of no intervention and with intervention. It was critical in this research project to gather pre-test information (baseline data). The baseline data serves two functions, describing the existing level of performance and for predicting the level of performance (Kazdin, 2001). I measured dependent variables (antecedent behaviors) prior to administering any interventions. Without this information, it would have been difficult and unlikely impossible to determine if any changes have occurred. I took data for the existence and duration of the SIB. These data were collected during my 3-hour Applied Behavioral Analysis session at a private clinic in Ann Arbor, Michigan.

The use of the baseline data that were collected across 3 days that determine the time of day that had the highest prevalence, the average amount SIB occurring in one session, and the duration of the behavior for my intervention. Once I had analyzed the baseline data that indicated when the behavior is most prevalent, I took ABC (antecedent behavior, consequence) data on the behavior. These data helped to identify what factors are causing the SIB. Once the antecedent was identified, the visual support was created. The visual supports capitalized on the individual's strength of visual perception and memory. Based on the baseline data collected, the use of checklists, video modeling and social stories were methods for intervention. All of these methods were used across one week depending upon on the context (for example, hand-washing was

supported through a visual checklist, transitions were supported by video modeling and visual schedules, social interactions were supported by social stories and video modeling). During the weeks with verbal only or verbal and visual supports, I took observational data to determine if there is a change in behavior. Data were then tabulated and used to formulate a conclusion.

Results

The verbal warnings were not sufficient in ensuring a successful transition as suggested in the baseline data of the frequency of the SIB. During the first week, the data indicated that there were 35 total incidents of Self-Injurious Behaviors, while at the end of the intervention the data indicated there were 22 incidents of Self-Injurious Behaviors (see Table 1). Table 1 indicates a 37% decrease in the number of Self-Injurious Behaviors indicating the effectiveness of visual support in reducing SIB for a child diagnosed with ASD. As a result of the significant decrease in SIB, this intervention will become a part of this child's behavior plan with hopes of making further changes in the SIB. In light of the seriousness of SIB, these results are viewed as quite encouraging. In this case study, visual supports have helped decrease a problem behavior that is a barrier for independent learning and communication for this student. With continuing the intervention, it is anticipated that the SIB will continue to decrease and create the opportunity for a better quality of life for this individual

It is very important to note that there are dissimilar and varying reasons why someone might inflict SIB. It is important to have a positive outlook when trying to understand and treat this behavior. Self-injurious behaviors can be controlled through various interventions. It is highly recommended that an individual who suffers from SIB ought to be evaluated by a mental health professional for an assessment. Creating a behavioral program from a behavioral assessment is beneficial. The evaluation of a mental health professional will allow for assistance

in identifying an intervention and treating the underlying causes of SIB. There is no single intervention to decrease SIB in children with ASD. It is important to base the intervention on the results of the functional behavioral assessments and individualize each of these supports. In this study I provided alternative behaviors and I have not reduced triggers and some discretion. In this study all data collection was done at the same time each day that indicated to be the highest prevalence of SIB expect one day. During Week 3, the session occurred at a different time of day than the rest of the interventions. These may have caused a weakness in the consistency of the data collection. Prior to this intervention, this student had had other interventions in the past with attempts to reduce the SIB.

Table 1 (Appendix I) represents the occurrence of self-injurious behaviors across each week. The first week, a non-intervention week, had 35 total occurrences of SIB. During the first intervention in Week 2, the visual supports seemed to enhance the current intervention by resulting in 22 total behaviors. Week 3 was a non-intervention week and indicated a slight increase in total behaviors by 3. At the end of Week 3, the total SIB recorded was 26. Finally, at Week 4, the behavior decreased in the last week of intervention. Week 4 had 22 occurrences of SIB, as it was the same in Week 2 (both intervention weeks had the same total SIB's occurrences).

Table 2 (Appendix II) represents the data collection for the intervention of using visual supports to potentially decrease SIB with a student diagnosed with autism and the patters of the behaviors are changing. All of the data were collected within one hour of a three-hour behavior therapy session.

In Week 1, a non-intervention week, the data indicate that this student engaged in 24 occurrences of open hand hits to his head, 2 occurrences of running into a wall head first, and 9 occurrences of hitting himself with objects in the close proximity.

In Week 2, an intervention week, the data indicate a decrease in the SIB. (Week 2 is when the intervention first was introduced). The data for Week 2 indicate that there were 17 incidents of open head hits to his head, 0 running into walls head first, and 5 hitting his head with objects in the close proximity.

In Week 3, a non-intervention week, the SIB either decreases or was unchanged, besides in the SIB of running into a wall head first. This behavior increased to 8 times total that week.

During Week 4, an intervention week, the data indicate 14 occurrences of open hand hits to the head, 4 occurrences of running into a wall head first (4 fewer than the previous week), and 4 hitting his head with objects in the proximity. Interesting enough, the patterns of behaviors changed during each week. Weeks 2 and 4 indicate the lowest number of total behaviors; however, the SIB of open hand hitting to the head had increased in comparison to Week 3, a non-intervention week. Notably, the frequency in SIB did not come back to pre-treatment levels, even during the non-intervention Week 3 period. This may reflect the stimulus control of concurrent verbal interventions. Meanwhile, the lowest levels of SIB were observed during the verbal and visual intervention periods.

Overall, during the weeks of intervention the SIB had decreased in total number of occurrences, while during the weeks of no intervention the number of occurrences increased. The data indicate that during the period in which visual supports were presented, there was a decrease the SIB by a total of 12 occurrences. These data suggest that the visual supports assisted in decreasing the total number of occurrences of SIB for one student.

Had I extended the intervention longer than a week, it may have changed the rate of behavior. The extension in the intervention would also create a larger data collection across periods which could have resulted in more powerful results. The data collected in this intervention illustrate pairing with visual supports and seem to enhance the intervention of decreasing self-injurious behaviors, to what extent is unsure.

Disclaimer

There are many challenges faced when teaching children with autism, even more so when the behaviors are as serious as SIB. It is important to recognize that many skills take time to develop and while interventions are taken place; it is important to ensure ongoing supports are implanted for continues efforts to decrease SIB. Parent consent was given before any additional supports were included. Changes in the behavior could additional be influenced by maturation, and/or other environmental factors. To track progress I collected data based on the response to the intervention the plan was effective. During this intervention, I used the skills taught by my professors in the course work at Eastern Michigan University, and I was closely observed and guided by highly trained professionals in the field of applied behavior analysis and special education.

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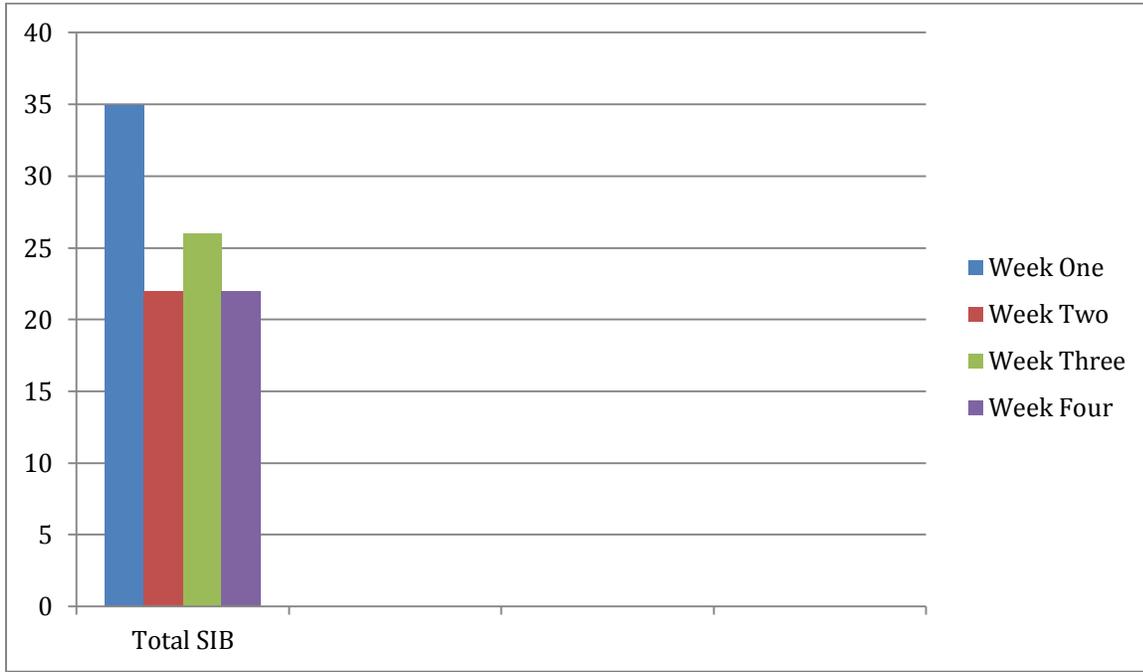
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Appendix I

Occurrences of SIB each week

Table 1



Appendix II

Patterns of Behaviors

Table 2

