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**THE RELATIONSHIP BETWEEN AGGRESSION AND COMMUNICATION IN  
STUDENTS WITH DEVELOPMENTAL DISABILITIES**

by  
Emily Lynn Peel

A Thesis

Submitted to the  
Department of Educational Services/Instruction  
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For the degree of  
Master of Arts  
at  
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Thesis Chair: Terri Allen, Ph.D.

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## Dedication

*I would like to dedicate this manuscript to my late father, Robert James Peel, Jr. I will be forever grateful for the infinite wisdom, support, and love he bestowed upon me over the last twenty-two years. I am especially thankful for the support he provided during the beginning stages of writing this thesis. Thank you for being the best daddy and friend a girl could have.*

## **Acknowledgements**

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## Abstract

Emily Lynn Peel

### THE RELATIONSHIP BETWEEN AGGRESSION AND COMMUNICATION IN DEVELOPMENTALLY DISABLED STUDENTS

2011/12

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Master of Arts in School Psychology

This purpose of this study was to examine the relationship between aggression and communication in students with developmental disabilities. Previous research examining the relationship between aggression and communication found a significant correlation between physical aggression and expressive vocabulary in language (Dionne, Tremblay, Boivin, Laplante, & Pérusse, 2003). The current study investigated a link between high intensity behaviors (aggression) and the degree of impairment within the communication domain. Archival data was obtained from a sample of students living in a residential facility for stabilization of behaviors in Southern New Jersey. Communication was measured by the communication goals and objectives listed in each student's Individual Habilitation Plan (IHP). Aggression was measured by the aggression goals and objectives also listed in each student's IHP. The results found that there was no significant correlation between aggression goals and communication goals. The results also found that there was no significant correlation between aggression goals and verbal ability in these students. Additionally, the results found that there was no significant correlation between communication goals and verbal ability.

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## Chapter 1

### Introduction

#### Need

Aggression is a behavior that is universally understood, but that has numerous functions and intentions. On the surface, it seems to be a topic that has been widely researched and is typically understood. However, researchers have conducted studies that look into aggression in developmentally disabled children and the results are intriguing. Studies have suggested that aggression is common in children with Autism and other developmental disorders that tend to be associated with lower verbal and communication abilities (Dionne, Tremblay, Boivin, Laplante, & Pérusse, 2003; Piel, 1990). The link between aggression and level of verbal ability has been studied, but more research is necessary in order to truly understand the functional relationship between the two.

Autism has been on the rise for the past five years (Centers for Disease Control and Prevention, 2012). The Centers for Disease Control and Prevention approximated in 2012 that Autism Spectrum Disorders occur in about 1 in 88 children in the United States (Centers for Disease Control and Prevention, 2012). This information originates from the Autism and Developmental Disabilities Monitoring (ADDM) Network. This number is a twenty-three percent increase since the last report in 2009 and a seventy-eight percent increase since the first report in 2007 (Centers for Disease Control and Prevention, 2012). Along with Autism often comes speech delay and lowered verbal ability (American Psychiatric Association, 2000). Aggression is also commonly seen in severely Autistic children (Parikh, Kolevzon, & Hollander, 2008; Singh et al., 2006). This study was interested in whether there is a link between communication and aggression in

developmentally disabled students. In addition, the relationship between verbal ability and aggression and communication in this population was examined. Examining the relationship between aggression, communication skills, and verbal abilities may be helpful in planning goals for children with developmental disabilities, promoting improved communication skills, and reducing aggressive behavior.

### **Purpose**

The purpose of this study was to examine the relationship between the students' Individualized Habilitation Plan (IHP) goals for increasing communication and IHP goals for decreasing aggression. The students' verbal abilities were compared to the communication and aggression goals to see if there was a relationship between communication or aggression and verbal ability. The purpose of this study was to evaluate how the goals affect one another and in doing so, help determine better ways to encourage increases in communication and decreases in aggression in this population of students.

### **Hypotheses**

Hypothesis one states that the number of communication goals in a student's IHP is correlated with the number of aggression goals in their IHP. Hypothesis two states that each student's verbal ability is correlated with the number of communication goals listed in their IHP. Hypothesis three states that each student's verbal ability is also correlated with the number of aggression goals listed in their IHP.

## **Operational Definitions**

- **Aggression:** Any occurrence of an individual physically interacting with another person resulting in that interaction inflicting discomfort, pain, or fear.
- **Autism:** Qualitative impairments in social interaction and communication and restricted repetitive and stereotyped patterns of behavior, interests and activities with onset before age three (American Psychological Association, 2000).
- **Communication:** The ability to correspond with another person through spoken language, sign language, PECS cards, or modified signs.
- **Individualized Habilitation Plan (IHP):** “A formal written program plan, reviewed and revised annually to ensure the individual receives the services required based on his/her assessed needs. Interdisciplinary - Characterized by a variety of disciplines that participate in the assessment, planning, and/or implementation of a person's program. There must be close interaction and integration among the disciplines to ensure that all members of the team interact to achieve team goals” (Bancroft, 2012).
- **Pervasive Developmental Disorder, Not Otherwise Specified (PDD-NOS):** A severe and pervasive deficiency in the development of reciprocal social interaction or verbal and nonverbal communication skills, or when stereotyped behavior, interests, and activities are present (American Psychological Association, 2000). These occurrences do not meet the criteria for Autism because of a later age of onset, atypical symptomatology, symptomatology below the threshold, or all of the aforementioned (American Psychological Association, 2000).

- Verbal Ability: Having the capacity to mand (request) something through the use of spoken language; having the capacity to use oral vocalizations to greet someone or get one's point across.

### **Limitations**

There were a number of limitations that impacted this study. Most of the subjects are from New Jersey and Pennsylvania, which is a concentrated area in the North Eastern part of the United States. The sample size was relatively small due to the number of children residing in the facility. All of the subjects came from the same residential facility in New Jersey where the children tend to share similarities in severity of behaviors and likeness in delays. Lastly, the subjects' ages ranged from seven to twenty one. This large age range includes the period of adolescence where aggression usually changes and intensifies which could be one cause for the increase in aggression.

### **Summary**

This study aimed to strengthen the evidence for a link between communication, verbal ability, and aggression in developmentally disabled students. The subsequent chapter is an examination and discussion of the current research on the development of aggression and speech in young children, as well as the factors that contribute to the stability of aggression as a child moves through the different stages of development. Chapter three addresses the methodology and design of the study. The final two chapters discuss the hypotheses that were tested and include an analysis of the findings from this study.

## Chapter 2

### Literature Review

#### Language development

“Autistic Disorder is the most common and severe Autism Spectrum Disorder” (American Psychiatric Association, 2000). Autism is defined as having impairments in three areas: communication, social interaction, and repetitive or restrictive interests (American Psychiatric Association, 2000). Because the impairments in communication and language are so often seen in Autism, it is important to look at some of the problems and maladaptive behaviors that can come as a result of impaired communication.

Loss of language and broadly defined regression have been reported as relatively specific to Autism (Pickles, 2009). Though loss of language can be seen in other disorders, it remains highly specific to Autism Spectrum Disorder (Pickles, 2009). Limited language ability is just one aspect of a more general problem of restricted communication among Autistic children who have deficits in social behavior as well (Pickles, 2009).

“Autistic regression” is a term used to describe the developmental regression in which apparently normal development is followed by a faltering of skill acquisition and frequent loss of, or failure to use, existing language and social skills (Shinnar et al., 2001). Autistic regression tends to occur during the second year of life (Luyster, Richler, Risi, Hsu, Dawson, Bernier, 2005) and is sometimes followed by recovery and improvement skills, but not always (Shinnar et al., 2001). Language loss can be connected with non-language regression, such as social withdraw and absence of social interest, reduced practice of eye gaze to control social interaction, absence of gestures

such as waving bye-bye and occasionally an absence of play and fine motor skills (Ozonoff, Williams, & Landa, 2005; Werner & Dawson, 2005). Therefore, early language acquisition in children with Autism Spectrum Disorder is seen as an unreliable as an indicator of eventual outcome (Pickles, 2009).

Structural language impairment and intellectual disability commonly co-occur in Autism (Williams, Botting & Boucher, 2008). This can be nonverbal with severe or profound cognitive impairments, or it can be a slight communication difficulty with less profound cognitive impairments (Williams et al., 2008). However, there is only a small minority of children with Autism Spectrum Disorder and language impairment that function at normal intellectual levels (Williams et al., 2008). In Autism, structural language impairment is hardly ever specific to the type of speech or communication because the acquirement of language through writing and sign language is usually just as affected as the acquirement of spoken language (Williams et al., 2008).

### **Aggression in Autism**

Aggression is a frequent and widespread problem in children with developmental disabilities (Hellings, Nickel, Weckbaugh, McCarter, Mosier, & Schroeder, 2005). Children with Autism are often missing correct ways to communicate and can rely on aggression or further disruptive behavior to communicate their needs to others (Koegel, Stiebel, & Koegel, 1998). Even though aggression is a prominent problem for children with developmental disabilities, it is complicated to precisely capture and measure diverse behaviors such as hitting, kicking, biting, punching, scratching, and throwing furniture (Hellings et al., 2005). Data collected from nurses, doctors, teachers, parents, and other relevant adults in a child's life are not always reliable (Hellings et al., 2005).

A majority of children who have Autism as well as mental retardation tend to have difficulties with explosive behavior in addition to aggression (Horrigan & Barnhill, 1997). These children are frequently resistant to assorted pharmacotherapeutic interventions (Horrigan & Barnhill, 1997).

### **Relationship between aggression and language**

Dionne et al. (2003) indicated a significant correlation between physical aggression and expressive vocabulary in language. The idea that language development is important in the development of self-control is the main idea of the language-aggression hypothesis (Piel, 1990). An important mediating factor that influences whether aggression is manifested verbally or physically is language (Piel, 1990). Disruptive behavior problems and delays in language are consistently linked from before kindergarten throughout childhood (Stevenson, 1996). Further, the mode of aggression is also affected by language maturity. Children with immature forms of language are more likely to resort to physical aggression while children with more mature forms of language are more likely to resort to verbal aggression (Piel, 1990).

High comorbidity between language development and a range of disruptive behaviors in preschool and school age children has been found in child psychiatry, developmental psychology, and psycholinguistics (Dionne et al., 2003). Piel (1990) found that language immaturity is the best predictor for physical aggression, even when gender and socioeconomic status are considered. Other researchers have found a link between criminal behavior and early language performance (Dionne et al., 2003) which suggests that the correlation does not stop at aggression in childhood. Dionne et al. (2003) also found that children with high rates of physical aggression during early years are more

likely to be at risk for a subsequent high physical aggression trajectory that leads to later violence.

However, even given the links found between aggression and language, it is atypical for preventative intervention efforts to place their focus on the comorbidity issue of language and behavior (Dionne et al., 2003). This is often the case because one aspect of development, such as aggression, may cause more concern than the other, language, and the comorbidity remains undetected (Dionne et al., 2003). However, special preschool programs like Head Start are more likely to identify children with both early deficits in language and behavior problems (Kaiser et al., 2000). Children with both deficits make up for about 30% of at risk children involved with the Head Start program (Kaiser et al., 2000).

Dionne et al. (2003) explain two different theoretical models of the association between language and behavior in their article looking at this comorbidity in 19 month old twins. The first developmental model suggests that shared etiological factors are responsible for the link between language and behavior (Dionne et al., 2003). This model suggests that the two are part of the same syndrome, such as Autism or Fetal Alcohol Spectrum Disorder (Rutter & Lord, 1987). There is more longitudinal data that supports this model than the subsequent one.

The second developmental model suggests that instead of being attributed to a syndrome, one phenotype directly influences the occurrence of the other phenotype (Dionne et al., 2003). The second model does not support the involvement of any other etiological factors. After considering the research on these two models, it is probable that the relationship found between aggression and language in Autistic children and other



developmentally disabled children is more likely due to the first model than the second (Dionne et al., 2003).

### **Aggression and functional communication**

Just as there are links between aggression and communication in normally developing children, there are also links between the two in children with developmental delays (Bates, Camaioni, & Volterra, 1975). Problem behaviors in some children, such as aggression, may be seen as a nonverbal means of communication (Bates et al., 1975). In the field of psycholinguistics, some research proposes that various nonverbal behaviors exhibited by very young children serve communicative functions (Bates et al., 1975). Some examples of these nonverbal behaviors are pointing to what they are talking about and showing objects to an adult (Bates et al., 1975). These are acceptable behaviors, but are relevant because they show how a child, especially one that is developmentally disabled, could resort to other behaviors, such as aggression, in an attempt to be understood.

With this in mind, it is important to understand that the function behind behavior problems and nonverbal communicative acts can sometimes be the same (Carr & Durand, 1985). One possible explanation for the relationship between problem behaviors and communication is that they may be a response to low levels of adult attention (Carr & Durand, 1985). Assessing behavior problems should include an analysis of the level of attention received in order to identify if they are, indeed, attention seeking functions (Carr & Durand, 1985). Providing an effective way for the child to secure adult attention is one way to decrease attention seeking behaviors. This alternative would be to improve communication skills of the child (Carr & Durand, 1985).

Though verbal communication training is not always used as a possible method for controlling problem behaviors, studies have shown that this training is able to lessen disruptive behaviors through teaching pertinent communicative responses (Carr & Durand, 1985). In one study, establishing functional communication was found to be the only variable that was successful in reducing problem behaviors. Carr and Durand (1985) established this link after ruling out other variables, such as task difficulty, overall attention level, level of praise, mands (requests), and other comments. Later, Johnson, McComas, Thompson, and Symons (2004) found that increasing the rate of prompts for mands, such as exchanging a break card, produced an increase in mands and a decrease in aggression to levels that almost reached zero. In addition, a focus on improving communication to decrease aggression found that a student's aggressive behavior to such an extent that the targeted behaviors were extinguished in a short time period when PECS were used (Frea, Arnold, & Vittimberga, 2001).

Durand and Carr (1991) found that results from functional communication training are not only noted shortly following intervention, but can be long-lasting and maintained for at least two years. In addition to maintenance, functional communication can also reduce the behaviors across all situations and environments in a child's life (Durand & Carr, 1991). This shows that the value of functional communication training may not lie only in its ability to reduce challenging behaviors, but also in its role in facilitating maintenance and application in new settings (Durand & Carr, 1991).

However, teaching attention seeking and attention getting behaviors can be more difficult for completely nonverbal children because though they may have a few signs or a small PECS (Picture Exchange Communication System) book, they may not have the

cognitive ability to mand (request). Severe aggression, self-injurious behavior, violent tantrums, and other such behaviors considerably restrict the lives of the children who engage in them (Carr & Durand, 1989). Fortunately, functional communication training has been found to reduce the behaviors of severe aggression, self-injurious behavior, and violent tantrums (Durand, 1990).

Prior to functional communication training, children rarely, if ever, make assistance seeking or attention getting requests without receiving prompts from their teachers (Durand & Carr, 1991). Often as unprompted requests increase, challenging behaviors, like the aforementioned, decrease with the implementation of functional communication training (Durand & Carr, 1991). After this training occurs, the results become obvious. Research has found that the results of functional communication training can be generalized across teachers and classrooms, even when teachers are unaware and untrained on the procedures used (Durand & Carr, 1991). This research suggests that it may be not be necessary to train everyone in order to see the improvements.

Therefore, the establishment of a link between aggressive behavior and communication may be helpful in guiding intervention that is maintained and generalized (Durand, 1990; Durand & Carr, 1991; Frea, Arnold, & Vittimberga, 2001). Finally, considering all of the previous research into possible links between aggressive behavior, communication skills, and verbal ability, it is evident that more research is necessary to determine exactly where the relationship lies.

## **Chapter 3**

### **Methodology**

The current study aimed to examine the relationship between aggression and communication in students with developmental disorders who were residing in a residential placement due to high rates of aggressive behaviors.

#### **Participants**

Participants included 37 students from a residential neurological stabilization unit for children with developmental disabilities in Southern New Jersey. Of those 37 students, 20 students were currently residing in the facility when the data was acquired. There were a total of 26 male students and 11 female students. Two male students did not have data for verbal ability, but were still included in the study.

Most of the subjects were diagnosed as having Autism or Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS). Additionally, many of the students were also diagnosed as having mental retardation, impulse control disorder, and Attention Deficit Hyperactive Disorder (ADHD). Furthermore, several of the students also had a variety of medical problems in addition to their other diagnoses.

#### **Methods**

The inclusion criteria for this study required each student to have an Individualized Habilitation Plan (IHP) that included at least one aggression goal or one communication goal listed in their IHP. The IHP records are stored on a computer drive in the offices of the residential facility. Archival data was accessed from each of the subject's records.

## **Design**

In order to examine the relationship between the number of aggression and communication goals stated in each students IHP, a Bivariate (Pearson's) correlational analysis was used. Further, a Bivariate (Pearson's) correlational analysis was used to examine the relationship between the students' verbal abilities and communication goals, and the relationship between students' verbal abilities and aggression goals.

## **Procedure**

The students' Individualized Habilitation Plans (IHP) were reviewed by accessing the records on a computer drive using the office computers located at the facility. The records were not removed from their secure placements and none of the documents or information was copied. The identities of the children remained anonymous. A number was assigned to each student's records in order to keep their identities anonymous. The age, gender, current classification, and diagnoses of each student were recorded. IHP goals for aggression and communication were recorded, as well as whether the student was verbal or not verbal.

## Chapter 4

### Results

This study focused on looking at the correlation for three hypotheses. Those hypotheses were: (1) There is a relationship between IHP aggression goals and IHP communication goals, (2) each student's verbal ability is correlated with the number of communication goals listed in their IHP, and (3) each student's verbal ability is correlated with the number of aggression goals listed in their IHP.

Hypothesis one which stated that there is a relationships between IHP aggression goals and IHP communication goals was not found to be significant ( $r = .104$ ,  $p < 0.01$ ). However, although a significant correlation was not seen between aggression goals and communication goals, the students with the highest number of goals for aggression also had the lowest number of goals for communication (as seen in Figure 1).

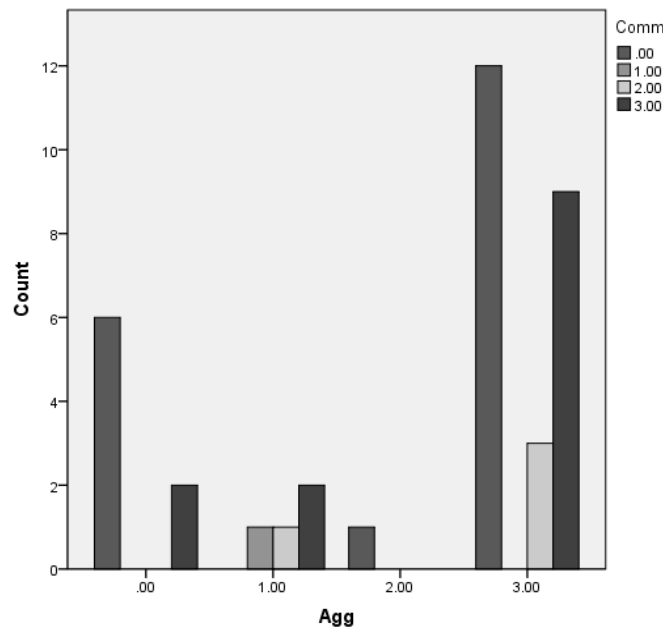


Figure 1

Hypothesis two which stated that each student's verbal ability is correlated with the number of communication goals listed in their IHP was also found to be not significant ( $r = .106, p < 0.01$ ). As would be expected, some of the students who were verbal did not have any communication goals listed in their IHPs. However, five of the verbal children had the highest number of communication goals listed in their IHPs (as seen in Figure 2).

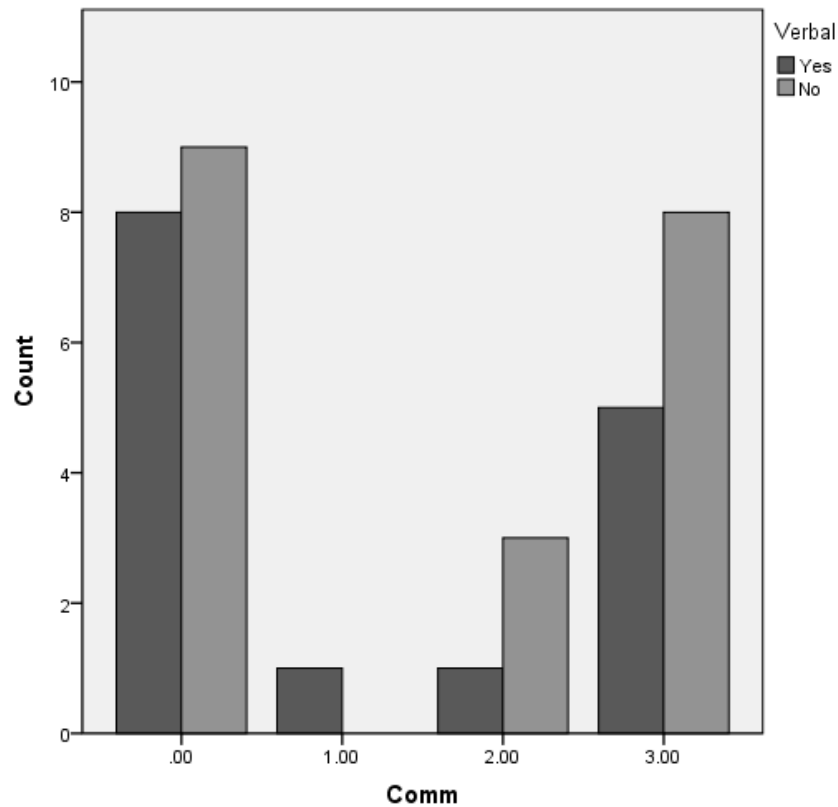


Figure 2

Likewise, hypothesis three which stated that each student's verbal ability is correlated with the number of aggression goals listed in their IHP was found to be not significant ( $r = .102, p < 0.01$ ). The number of verbal children and non verbal children

who had zero aggression goals was the same; four verbal children and four nonverbal children had zero aggression goals. Additionally, the number of verbal children and non verbal children who had one aggression goal was also the same; two verbal children and two non verbal children had one aggression goal each. However, as was hypothesized, more non verbal children had the highest number of aggression goals than verbal children (as seen in Figure 3).

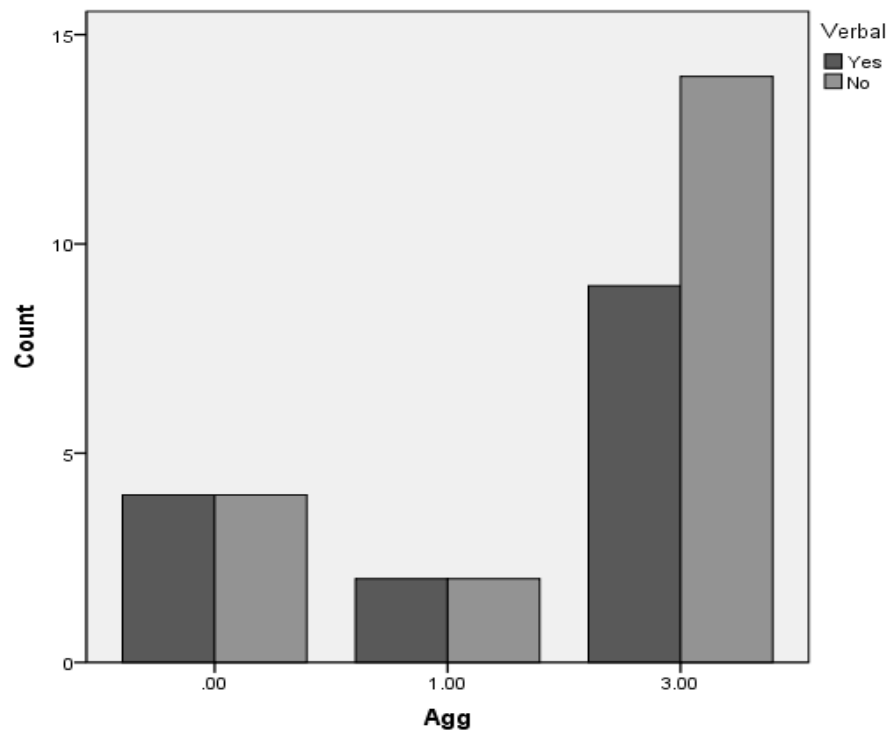


Figure 3

Lastly, though gender was not hypothesized to be correlated with aggression goals, communication goals, or verbal ability, an analysis of the data was run. Similar to the aforementioned findings, gender was not found to be correlated with aggression goals



( $r = -.102, p < 0.01$ ). Moreover, gender was not found to be correlated with communication goals ( $r = -.224, p < 0.01$ ). Finally, gender was not found to be correlated with verbal ability ( $r = -.284, p < 0.01$ ).

## Chapter 5

### Discussion

Hypothesis one stated that the number of communication goals in a student's IHP is correlated with the number of aggression goals in their IHP. Although a significant correlation was not found, there may be a number of factors complicating the study. First, the IHP goals for aggression and communication may not have been the best measures of aggression and communication in this population of students. Originally, the goal was to measure communication using IEP goals and additional information commonly found in IEPs, but many of the students' records were missing this data. Additionally, some of the students who were recorded as being "not verbal" did not have any communication goals. This could be because communication may not be a main focus for the student at this time. However, it could also mean that the student has communication goals that are listed elsewhere.

Furthermore, some of the students who are more physically aggressive did not have any aggression goals listed in their IHP. This finding may be due to the fact that students who are more aggressive may have case managers who are more focused on decreasing their aggression rates. When aggression rates are extremely high, communication often gets left behind for a time when the student is calmer and able to learn words, signs, or PECS cards (Dionne et al., 2003).

Hypothesis two states that each student's verbal abilities were correlated with the number of communication goals listed in their IHP. Contrary to previous research, the current study did not establish a link between the students' verbal abilities and the number of communication goals listed in their IHP (Bates et al., 1975; Carr & Durand,

1985; Carr & Durand, 1989; Dionne et al., 2003; Durand, 1990; Piel 1990; Rutter & Lord, 1987).

Hypothesis three states that each student's verbal abilities were also correlated with the number of aggression goals listed in their IHP. Divergent with previous research, the current study did not establish a link between the students' verbal abilities and the number of aggression goals listed in their IHP (Bates et al., 1975; Carr & Durand, 1985; Carr & Durand, 1989; Dionne et al., 2003; Durand, 1990; Frea et al., 2001; Johnson et al., 2004; Piel 1990; Rutter & Lord, 1987).

Further, gender of the students may not have been found to be significantly correlated with any of the other variables because there were more than twice as many male students than female students in this sample. A larger sample with a more representative population of female students may yield significance.

### **Limitations**

There are also other limitations that may have affected the significance of this study. There were 17 subjects who were no longer live in the facility when the data was collected. Therefore, they may have had different case managers who viewed IHP goals as more or less valuable and important, which impacted the inter-rater reliability. Moreover, this data was taken from one facility in Southern New Jersey. Using data from more students in various placements may also yield a more representative sample.

The large age range of subjects in this study could also have affected the significance of a relationship between aggression and communication goals. As previously stated, many children with Autism and other developmental disabilities tend to grow more aggressive as they get older and reach adolescence (Hellings et al., 2005;

Horrigan & Barnhill, 1997; Koegel et al., 1998).

Children with Autism and developmental disabilities also pick up language and communication skills at different rates depending on the severity of their disorder or delays (Luyster et al., 2005; Ozonoff et al., 2005; Pickles, 2009; Shinnar et al., 2001; Werner & Dawson, 2005; Williams et al., 2008). Some of the subjects within the same age range (within a year or two) may not be on the same level of communication and may have varying rates of aggressive behaviors. A study with a tighter age range may have yielded a significant relationship.

### **Future Directions**

Future studies investigating the link between aggressive behaviors and communication skills in students with developmental disabilities would benefit from a number of different approaches that are divergent from those of this study. A larger sample size with a more concentrated age range of students would be beneficial in further investigation of the relationships between aggression and communication. Moreover, a more representative sample size with a more equal number of male and female students of the same ages would also benefit future research. Data on aggression rates of the children and other communication goals that may be tracked in individual behavior plans for each student may be more representative of a relationship between aggression and communication than solely using IHP goals to measure the relationship. Further, a control group of verbal children without disabilities could be used as a comparison group in order to separate out students who have verbal language. Though this study used both students who had verbal language and students who did not have verbal language, there was no control group of typically functioning children with age appropriate verbal ability.

In summary, future research into the link between aggression and communication in students with developmental disabilities would benefit from a larger study with a larger sample size, a more focused age range, and a larger array of aggression and communication data.

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