Increasing Reading Comprehension in Children with ADHD

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Abstract

The following proposal will examine the effects of children with ADHD reading out loud to therapy dogs to improve their reading comprehension. We think that this will help the children with ADHD focus because they will feel more secure and in a less threating environment than in the normal classroom setting with many distractions. We would expect the results to show increased comprehension levels in the children that read out loud to the dogs versus those who are in the control group. The proposed research will help further studies in implementing reading comprehension programs to improve skills not only for children that have ADHD, but also normal children that struggle with reading comprehension.

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In coming up with this proposed study there was only one topic sure to attract many different research opportunities, ADHD in children. According to the DSM-V there are two symptom types, the inattentive type and the hyperactivity/impulsivity type. The DSM-V also provides three kinds of presentations of ADHD, combined, predominantly inattentive, and predominantly hyperactive-impulsive (Centers for Disease Control and Prevention, 2014). Because of these symptoms and presentations, a common belief regarding students with ADHD is that they have the inability to focus and do not pay attention, which is not the case. Those diagnosed as predominantly inattentive type may truly be listening in class but because they cannot decide what is most important to listen to, they lose the ability to maintain focus (Sánchez-Mora, C., Cormand, B., Ramos-Quiroga, J. A., Hervás, A., Bosch, R., Palomar, G., & ... Ribasés, M. (2013)). There are a few therapies and techniques have been shown to improve attention and also increase comprehension in students. This proposed study is primarily interested in the use of therapy dogs as an intervention in increasing reading comprehension. Before the discussion of the current research on animal-assisted therapy, there is a need to explore some other intervention options.

While many children with ADHD do receive stimulant medications that aid in reducing symptoms, it has been proven that the addition of behavioral therapy along with parent education can be even more effective (Centers for Disease Control and Prevention, 2015). Child-Centered Play Therapy (CCPT) and Reading Mentoring (RM) are two different therapy options for ADHD. The idea behind play therapy is that children have not yet fully developed the skills to just talk with a counselor, so with use of play the children will find a more natural way for them to communicate (Schottelkorb, A.A., & Ray, D.C., 2009). Reading Mentoring is the idea of having a mentor or teacher work with students to helping reduce symptoms of ADHD (Ray, D.C., Schottelkorb, A., & Tsai, M., 2007). Another type of therapy for children with ADHD is a reading motivation intervention. This intervention uses motivation language, such as saying good job, and provides a calming tone in the room to help children with ADHD relax (Sentall & Lee, 2012).

In a study done by the University of North Texas, researchers determined the impact of CCPT on stress between teachers and students and in reducing ADHD symptoms compared to the control group or RM. The study found that while both options showed statistically significant improvement in ADHD behaviors, CCPT had comparatively fewer problems with emotional instability, anxiety and withdrawal (Ray, Schottelkorb, &Tsai, 2007). Another type of therapy for children with ADHD is a reading motivation intervention. This intervention was used in a study involving students with and without ADHD and students with and without reading difficulties. The study found that reading motivation helped those only noted with reading difficulties and those with ADHD did not respond with this intervention (Sentall & Lee, 2012). This is a comparison study looking at the ability of inference generation between regular students and those with ADHD before and after a think-aloud task. After the students talked about the possible inferences made from the story, they were able to recall the story better than on their own before (Van Neste, Hayden, Lorch, & Milich, 2015). The CCPT and the think-aloud task were the most beneficial in helping students with ADHD. In the proposed study, similar aspects from both CCPT and the think-aloud task will be used to guide our focus.

The studies mentioned above that included interventions such as Child-Centered Play Therapy, Reading Mentoring, reading motivation intervention, and the think-aloud task all are searching for how to improve schoolwork for children with ADHD. While it was found that CCPT and the think-aloud task had relatively good improvement, it seems that AAT may be a combination of these studies. Over 70% of children have been estimated to tend to talk to and confide in animals (Ray, D. C., Schottelkorb, A., & Tsai, M. (2007)). In a study conducted to find out if AAT had an effect on reading rate, accuracy, and comprehension it was found that the “dog group” comprehension scores were higher than the other three groups in the study (Roux, Swartz, & Swart, 2014).

Animal-Assisted Therapy (AAT) is considered a good therapeutic approach to helping those with illness, disability, injury, and so on. In 1964, Boris Levinson, a child psychiatrist coined the term “pet therapy” after therapeutic effects with dogs for the withdrawn children. From 1944 to 1945, animal-assisted therapy was first documented inside the United States and was used to treat soldiers with injuries and trauma. However, there were no findings as to the success of the therapy. Dr. Levinson conducted research and writings on the topic and in 1977 Samuel and Elizabeth Corson used his animal-assisted therapy in the Ohio State psychiatric unit. The Corson’s study found that 47 of their 50 participants showed improvement enough to leave the hospital and this sparked others to conduct their own research. One weakness of this study was that there was no control group. In 1999, a program called Reading Education Assistance Dogs (R.E.A.D.) was created. It all began in Salt Lake City by Intermountain Therapy Animals (ITA). Both experimental and quasi-experiment studies have found that time with a dog can leave a positive impact on a child, like improving reading skills and motivation (Jalongo, Astorino, & Bomboy, 2004). The dogs’ presence in the room can provide a better mood setting for the child and therefore reduce stress (Jalongo, 2005). Dog therapy is assumed to act as a motivator and reading aloud to a dog can increase ability and possibly comprehension (Bassette & Taber-Doughty, 2013). This might be due to the decrease in blood pressure and stress in interacting with the dog (Bassette & Taber-Doughty, 2013).

Animal-assisted therapy could potentially be a helpful intervention for children with ADHD because the presence of the dog might eliminate the need to be hyperactive and would direct attention to the dog. The goal of R.E.A.D. is similar to the goal of this current proposal which is, “to improve the literacy skills of children in a unique approach employing a classic concept: reading with a dog” (Ray, D. C., Schottelkorb, A., & Tsai, M. (2007)). While research previously has focused more broadly, this proposal will be more specific in looking at only comprehension in elementary students with ADHD. This proposal specifically is aimed at finding a significant increase in reading comprehension for elementary aged students with ADHD by using therapy dogs as means for intervention.

**Methods**

**Participants**

The sample (N=200) and will be children in the 5th grade that have been clinically diagnosed with ADHD by a psychologist using the DSM-V, and taking medication for their disorder. The participants will mainly come from within the Jackson County school district. We will contact the school psychologist and teachers to get student participates with ADHD and meet the criteria. We will ensure the confidentially of the participants by excluding names and what school they attend. We will explain to parents, teachers, and the school psychologist that no individual information about the participants will be revealed. We will get informed consent forms and give parents information about what their children will be participating in.

**Materials**

We will require a classroom that will provide a lot of space and enough room needed so participants will be able to read and pet the dog accordingly. We will also need five different previous End of Grade (EOG) reading passages for the same grade level that the children are in. We will also need the questions that accompany the reading passages. We will also need a properly trained service dog that can sit and be still for long periods of time and work very well with children. We will get the dogs from Jackson County animal shelter that also trains service dogs.

**Procedure**

All participates are going to be instructed to continue taking the ADHD medication through out the entirety of the study. We are going take all 200 participates and randomly assign them up into two different groups. One group will be our control group with 100 participants. The participants in the control group will read the EOG passage to themselves and answer the questions that follow as if they were taking the real EOG test. The other group will be our intervention group. The other 100 participants in this group will read the EOG passage out loud to the therapy dog and then also read and answer the questions that follow to the therapy dog. Each student from both groups will read the same passage and answer the same 8 to 10 questions that follow on a scantron for easy grading purposes. The study will have five different testing sessions and each session will last one week. For each week, there will be a different EOG passage. For both the control group and the intervention group, one participant will read and answer the questions at a time in the classroom. We will do this so that we can control for other factors from other students that may skew the outcomes of the study. After all 200 participants have completed all five testing sessions, we will get the results from comparing the scores of the control group and the testing group to see if a statistical significance difference has occurred.

**Results**

We will use an independent means t-test to assess the differences between EOG test scores between our two groups of students with ADHD, one reading out loud to therapy dogs and the other group that will not. We will also calculate Cohen’s d to see the effect size of our study. Our independent variable will be the use of the children with ADHD reading out loud and our dependent variable will be the test scores. We expect to see in the results that reading out loud to a therapy dog will improve the reading comprehension as opposed to just reading silently and answering the questions. We think that it will allow the children to focus more and understand what they are actually reading if they are reading out loud and to an animal.

**Discussion**

Our study could be applied to and help other people, not just children. It could be used with adults or children that have other mental disabilities. There are many people that have ADHD disorder and any advancements in research could be beneficial to anyone who has the disorder or help the care takers of the people with the disorder. This study could also be applied to different places other than just reading comprehension for helping children to learn in better ways than what is being offered at public schools at this present time. For example, the children could explain the steps in solving a math formula to the therapy dog. If our study did not show a statically significant positive correlation between the independent variable (therapy dog) and the dependent variable (EOG test scores), we could eliminate this hypotheses and we will have a better understanding of what will not help children with ADHD comprehend what they are reading and improve their test scores.

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