

## **BACKGROUND**

Although autism spectrum disorder is not a new term to this generation, it has not been around for very long, in comparison with other developmental diseases. Although history may not tell you what we know the autism spectrum disorder as today, we have evolved so much from the prior definition of “A schizophrenic patient who had withdrawn into his own world” (“Autism History”, 2013). Terms that define diseases can turn out to be detrimental. It is so important to make sure that the term coined is one that will only allow positivity.

“Autism is the fastest growing serious developmental disability in the U.S. among all the 3-12 year old children in the country” (“KenCrest: Autism Services - Autism Services”, n.d.). Throughout the past century, there have been so many improvements in both diagnosis and treatment for autism spectrum disorder. The latest development was in 2002 by Ole Ivar. According to “Autism History” Ole Ivar was the first to introduce at home therapy for children under the age of five. He was able to follow this therapy for years and show just how many developmental issues were handled and how these children with autism spectrum disorder were developing at a semi-normal rate.

*What is autism spectrum disorder?*

“A range of complex neurodevelopment disorders, characterized by social impairments, communication difficulties and restricted repetitive and stereotyped patterns of behavior” (“Autism Fact Sheet: National Institute of Neurological Disorders and Stroke (NINDS)”, 2013). Although autism spectrum disorder is a disease that affects the brain, there are so many other areas that are affected that are not necessarily just the

learning aspect for a child. Autism spectrum disorder not only affects the way a child learns, but it also affects the child's social and emotional needs.

### *Social Issues*

Social issues can arise at any age for the autism spectrum disorder, but one main factor that is prevalent in the early stages is “the lack of joint attention skills or lack of protodeclarative pointing” (Hall, 2010). The autism spectrum is so large and so broad that sometimes it is hard to diagnose or even see the signs of the disease apparent in some children and for others, it is so apparent that testing is hardly needed except for a formality.

“Children with autism experience the social work to be unpredictable and frightening” (Renyolds & Dombeck, 2006). Children with autism spectrum disorder do tend to be socially awkward no matter what area of the spectrum they are on. To diagnose on this reason alone would be completely inappropriate because if a person is socially awkward that does not necessarily denote that they lie anywhere on the spectrum.

### *Physical Signs of autism spectrum disorder*

Autism spectrum disorder is not determined just by characteristics of behavior, but there are many other issues related to autism spectrum disorder that can influence the diagnosis. According to “Autism Society-Related Conditions”, there are ten telltale signs of the onset of Autism. Some of those signs are sleep problems, seizures and low muscle tone. Just because these signs may be apparent to some extent, it does not mean that a

child has autism, many more studies and tests are needed to be done in order to properly diagnose a child.

### *Reading Comprehension Levels*

Testing reading comprehension on any child with a cognitive disease or without can prove to be very challenging. One finding was that those with Autism that were tested demonstrated “A heterogeneous nature of reading skills” (Nation, Clarke, Wright, & Williams, 2006 p.11). Thus showing that children with Autism because of the broad spectrum also have a broad spectrum of reading levels based on certain tests.

Patterns of higher word reading skills accompanied by poor reading comprehension is known as hyperlexia (Gately, 2008). This has been a great finding in the Autism spectrum due to the fact that these children are able to see words and are able to read them without necessarily knowing what they are or having any prior knowledge as to what they could be. “Direct instruction programs have had success with children at risk for school failure “(Carlson & Francis, 2002; Grossen, 2004), It is very important to note that just because the comprehension levels may be different, that there are definite therapies and ways to increase the levels.

This systematic literature review therefore seeks to determine whether Does the reading comprehension level of children, both male and female, age 9 years old that have been diagnosed with autism for two or more years, level to be 75% of children, both male and female, age 9 who have had no mental medical illness since birth.

## **ELIGIABILITY CRITERIA**

For this systematic literature review there are many criteria that must be followed in order to cite a reference. One of the first criteria is that it is a credible source. No blogs are used or personal opinions. The second criterion that must be followed is that the ages studied are that at the age of 9 years old; unless a different age is being mentioned in reference. This study is based on the comprehension levels of 9 year olds only. The third criterion is that the information provided was updated no less than ten (10) years previous to this study. For the reason that there is so much research being done, that if it was not updated recently the information may be out of date and no longer valid. The fourth criterion will be that all articles used will be English only.

The table that will be used as a template to make sure that all articles used follow all of these criteria are as followed in table M.1

Table M.1

<b>Article Name:</b>	<b>Date Accessed:</b>	<b>Credible Source:</b>	<b>Participants are 9 years old:</b>	<b>Last updated:</b>	<b>English:</b>

## **SEARCH**

When it comes to searching for articles, the above criteria are followed as well as some limitations. When using [pubmed.ncbi.nlm.gov](http://pubmed.ncbi.nlm.gov), there are a few limitations that must be followed when searching. The first limitation is defining the amount of time that a

child at the age of nine (9) has been diagnosed with the disease. For the purpose of this review, children who have been diagnosed for at least two (2) years will be used. Making sure that those studied have been diagnosed for that amount of time is time consuming. An example of the search that will be used would be: “Autism, 9 years old, diagnosed 2 or more years”. Making sure that this is done all search sites is very important or else the review would not be valid.

## **STUDY DESIGNS**

The study designs that will be represented are both longitudinal studies, or those that study participants over long periods of time, and cross sectional studies, or those that compare different groups at one time.

Longitudinal studies will be very beneficial for this systematic review as seeing a child that has been diagnosed for at least two years, to having had the disease for more than two years and how their reading comprehension levels have changed. The benefit to using cross sectional studies is being able to compare the children with autism and the children without autism at a given time. Being able to compare children who have been diagnosed with autism for a short amount of time, those that have been diagnosed for a very short amount of time-not to be less than two (2) years and those children who have not been diagnosed with autism.

## **ASSESSING FOR BIAS**

There are many different tables that can be used and criteria that can be followed when it comes to assessing for bias for a systematic review. For this review, the chosen reasoning for bias are as follows: First, to assess the reliability and validity of a source. Making sure that the source is reliable and that the data is not just thrown together by someone who cannot back it up. Making sure that the authors of the studies being used have their accreditations in the field being used. The second is to avoid the use of conflict of interest. The citations being made, while they may showcase certain outcomes, it may be skewed based on the group or the websites affiliations. The third and final criteria to assess bias on an article would be to use articles based on the recommended criteria as stated in the eligibility criteria section.

The strength of articles being used may be hard to define because they may have the answers that the study needs, but criteria must be set for this as well. One such criteria is that of the sample being used. This study must make sure that the participants being studied are not small but not too large. Too large of a study may have skewed results as would too small of a study. Finding a happy medium is difficult but for the purpose of this study, making sure that the study has more than 30 participants but less than one thousand is very important to make sure that the results are not skewed.

A Brief History of the Post-Autistic Economics Movement. (2007, August 7). Retrieved September 25, 2013, from <http://www.paecon.net/HistoryPAE.htm>

Autism Fact Sheet: National Institute of Neurological Disorders and Stroke (NINDS). (2013, August 21). Retrieved September 21, 2013, from [http://www.ninds.nih.gov/disorders/autism/detail\\_autism.html](http://www.ninds.nih.gov/disorders/autism/detail_autism.html)

Autism History. (2013, September 24). Retrieved from <http://www.news-medical.net/health/Autism-History.aspx>

*Autism Society - Related Conditions*. (n.d.). Retrieved from <http://www.autism-society.org/about-autism/diagnosis/related-conditions.htm>

Gately, S. E. (2008). Facilitating reading comprehension for students on the autism spectrum [Electronic version]. *Teaching Exceptional Children*, 40(3), 40-45.

Grossen, B. (2004). Success of a direct instruction model at a secondary level school with high risk students [Electronic version]. *Reading & Writing Quarterly*, 20, 161-178.

Hall, L. J. (2010, July 20). Social-Emotional Issues in Autism Spectrum Disorders † ~~Education.com~~. Retrieved September 27, 2013, from <http://www.education.com/reference/article/social-emotional-issues-autism/> \*\*

~~KenCrest: Autism Services - Autism Services. (n.d.). Retrieved from  
<http://www.kencrest.org/autism-services/Autism-Services-.htm>~~

Nation, K., Clarke, P., Wright, B., & Williams, C. (2006). Patterns of reading ability in children with autism spectrum disorder. *Department of Experimental Psychology*, 7(9), 9-25. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/16897396>

Renyolds, T., & Dombeck, M. (2006, February 14). *Social and Behavioral Deficits - Autism And Pervasive Developmental Disorders*. Retrieved September 26, 2013, from [http://www.mentalhelp.net/poc/view\\_doc.php?type=doc&id=8765](http://www.mentalhelp.net/poc/view_doc.php?type=doc&id=8765)

Home - PubMed - NCBI. (n.d.). *National Center for Biotechnology Information*. Retrieved October 7, 2013, from <http://www.ncbi.nlm.nih.gov/pubmed>