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Apr 21st, 1:00 PM - 3:00 PM

# The Effectiveness of Medication and Sensory Integration Therapy on Children with Autism Spectrum Disorders

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Silver, Lauren, "The Effectiveness of Medication and Sensory Integration Therapy on Children with Autism Spectrum Disorders" (2017). *Academic Festival*. 87.

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### Introduction

Autism spectrum disorder (ASD) is a classification of a large group of developmental disorders commonly referred to as a spectrum. It affects people regardless of race, gender, and ethnicity, and the symptoms that it causes include a very wide range of mostly cognitive and social developmental problems. ASD is typically diagnosed in the early stages of development – often between the ages of three and seven.

The following research is specifically about young children between the ages of three and twenty with Autism Spectrum disorder. The research discusses the effectiveness of two very different forms of treatment used in this population with this disorder – different types of medication and sensory integration therapy (SIT) through occupational therapy (OT). It uses the systematic review of a compilation of already performed studies to determine the effectiveness of each of these therapies.



### Methodology

All studies used were found through the Sacred Heart University Library Database through MEDLINE and Academic Search Premiere.

#### Participants

- All data was taken from children between ages no younger than three years old, and no older than age twenty
- Parents of children with ASD were also surveyed
- All of the children in the studies are diagnosed with some form of autism spectrum disorders (and some with comorbid conditions)
- Both gender and geographical location varied throughout the studies

#### Materials

- A small number of the studies used the literary analysis of other resources and studies
- Some used administrative data from statewide government medical systems such as Medicaid to gather information
- Surveys were used to collect data on medication adherence, types of medication used, use of complementary medicines, and feasibility and safety of treatments
- Fidelity instruments and Miller Assessment for Preschoolers were used

#### Procedure

- The common goal was to determine whether SIT and medication use for children with ASD were effective types of treatment
- Studies using literature reviews attempted to gain information on what SIT is as well as to better understand ASD
- Survey data from parents and providers gained information on medication usage, adherence, and efficacy and safety of SIT as therapy
- Data gained from new studies included the benefits of SIT in certain areas of development (communication skills, social skills, problem behaviors, etc.)

### Results

There were several different areas of data that were collected through the extent of this research.

#### Autism Spectrum Disorder

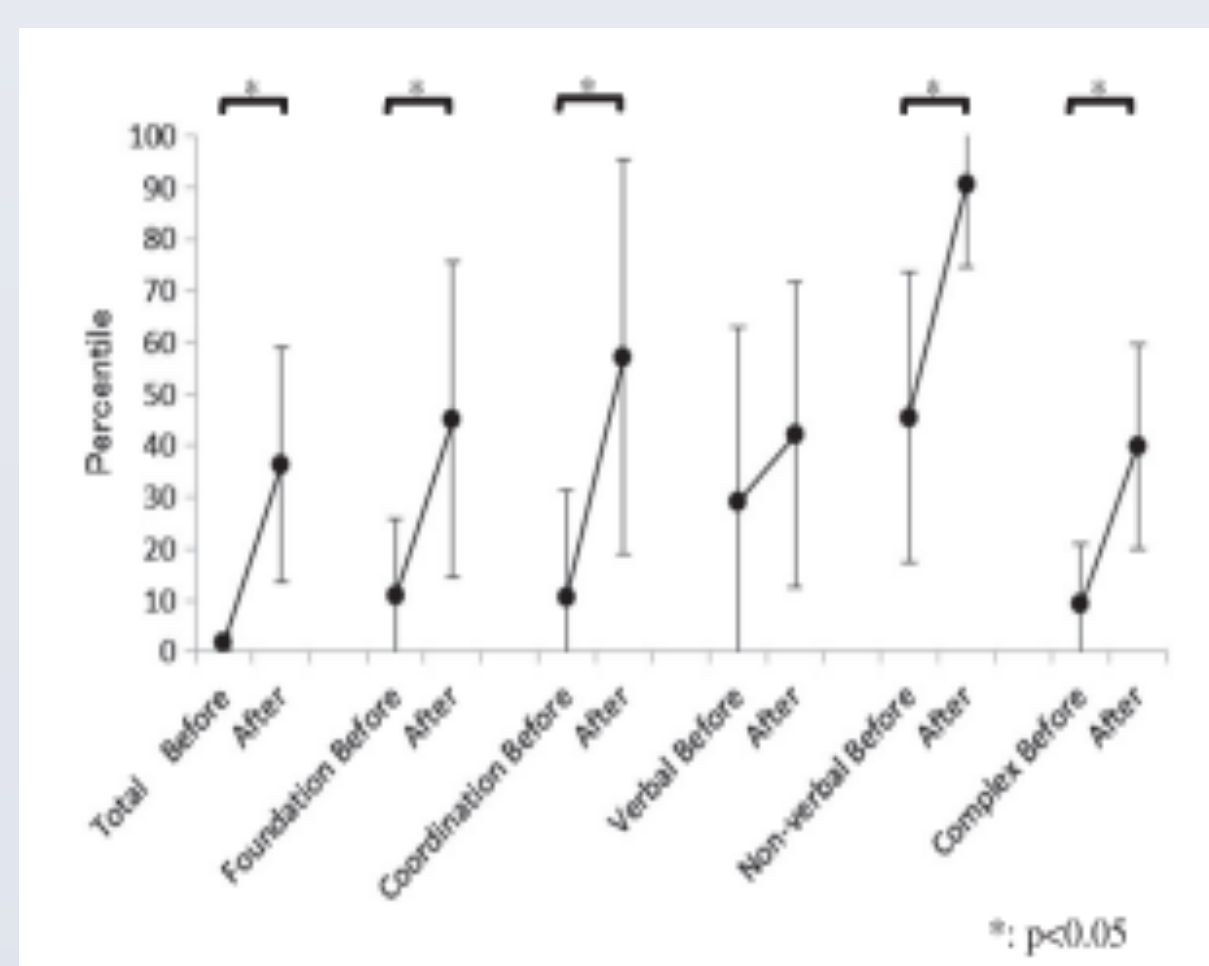
- All individuals with ASD are affected differently
- Fields of function typically affected include communication skills, speech, neurological functioning, overall behavior
- Outsiders have generally negative attitudes towards patients with ASD

#### Medication Usage

- 65 % of children with ASD are prescribed with psychotropic medication (which effect mental activity/mood)
- Psychotropic medications include antipsychotics (39 % prescribed with this), antidepressants, stimulants, mood stabilizers, sedatives, anxiolytics
- Drugs other than psychotropic ones (ADHD medication and oxytocin)
- Numbers of medicines prescribed also varied – 47 % of children with ASD took 1 or less medications, 7.4 % take 2, and 4.4 % were prescribed with 3 medications
- Medication adherence was found to be highest for those with comorbid conditions, those on antipsychotics were adherent 52 % of the time

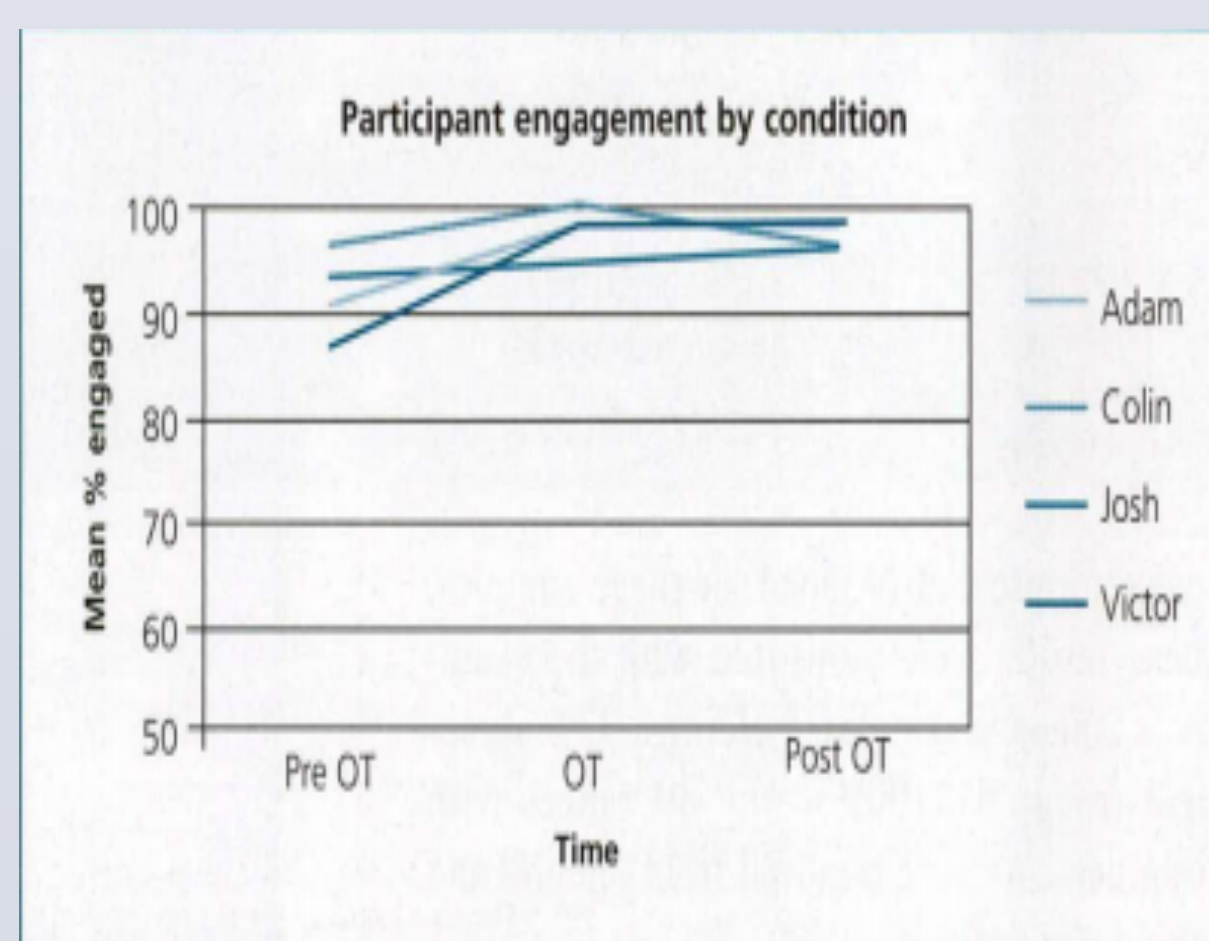
#### Sensory Integration Therapy

- SIT is more effective than any other type of sensory-based therapy
- SIT caused significant gains in verbal and nonverbal skills, motor coordination

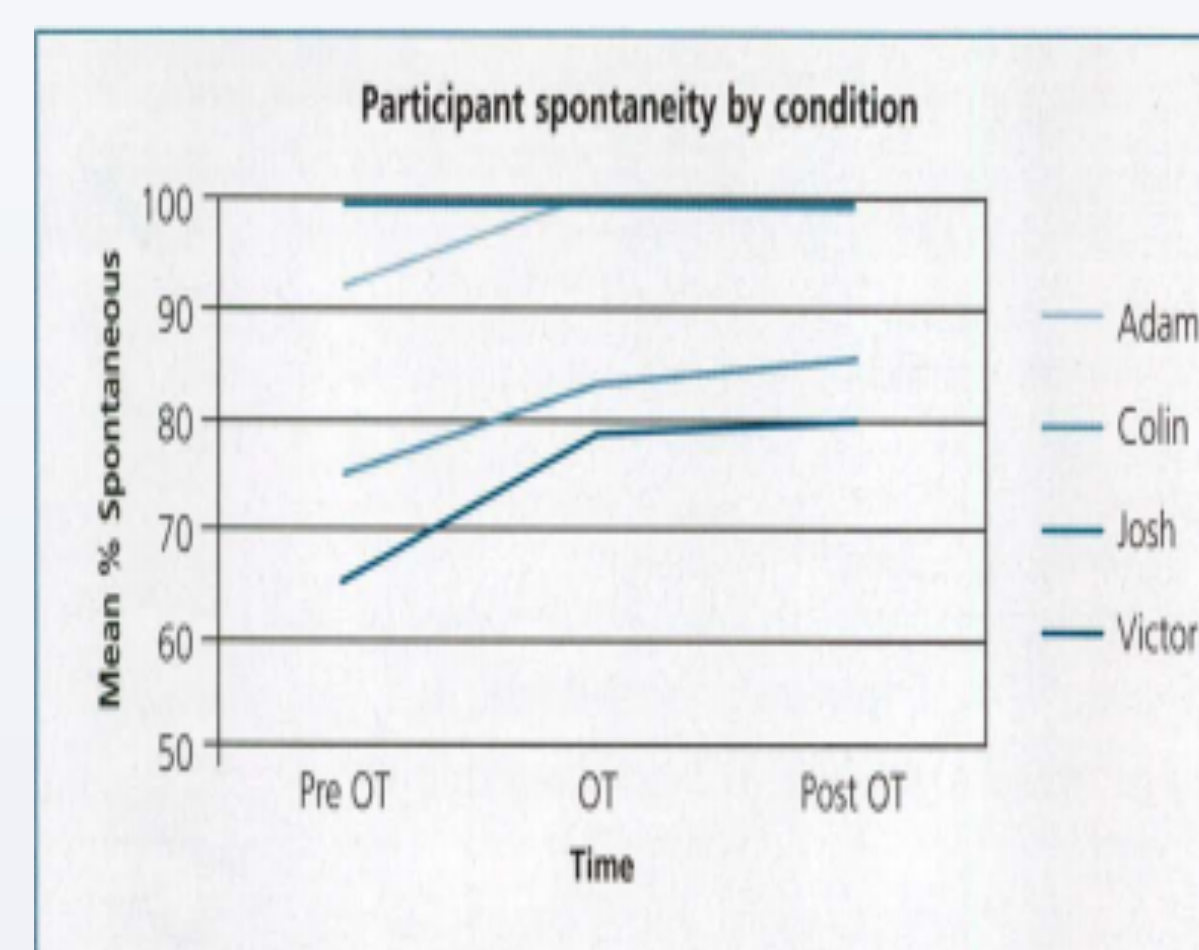


(Iwanaga et al, 2014)

- Other benefits of SIT include improved social function, decrease in autistic mannerisms, fewer problem and self-injury behaviors
- SIT improved spontaneity of speech, length of utterance, engagement



(Preis & McKenna, 2014)



(Preis & McKenna, 2014)

- 81 % of parents found ASD to be most effect CAM treatment
- 90 % of parents found SIT feasible treatment for children's schedules
- Fidelity ratings from therapists about being able to stay true to the treatment protocol as well as treatment being safe for all parties involved had a mean of 82 percent and reached as high as 97 percent

### Discussion

The overall hypothesis for this research was that there were many positive, yet separate, effects of using medication and sensory integration therapy for children with ASD as well as that each treatment type was overall effective. Both uses of medication prescription and SIT through OT are effective forms of treatment for children with ASD.

#### Medication

- Concluded to be an effective form of treatment
- Found to be a frequently used form of treatment in many states across America, suggesting that many health care providers find the use of different psychotropic medications to be safe and effective as a form of treatment for children with this disability.
- Adherence was also found to not a problem

#### Sensory Integration Therapy

- SIT is the most effective type of therapy treatment for this population with autism spectrum disorder
- SIT were as effective in increasing verbal communication, decreasing self-injury actions, and improving overall cognitive functioning.
- Effectiveness, feasibility and safety of the therapy was also looked at and parents/providers agreed that SIT provided each of these

#### Overall

- Both SIT and Medication usage are not only effective forms of treatment for children with ASD but are also safe and feasible options
- Limitations include grouping the ages of the children and looking at them separately, cultural differences in regards to cognitive/developmental disorders, and a lack of information on specific benefits of medication usage
- Future research could include more specific benefits for medication usage as well as how cognitive development specifically is affected by sensory integration therapy



### Conclusion

The research done in this review of literature was used to determine the effectiveness of medication prescription and SIT through occupational therapy for children ages three to twenty that have been diagnosed with autism spectrum disorders. After reviewing many different pieces of literature and many different studies, it was reasonably conclusive that both medication use and sensory integration therapy through OT not only are both very commonly used forms of treatment, but also are very beneficial in the relief of symptoms.

Although there was positive evidence for both forms of practice, there seemed to be more information about the specific benefits of sensory integration therapy and less about prescription medication usage. This being said, there was a great deal of information found in regards to adherence to medication as well as the wide range of medication that has been used to treat the various symptoms. All of this information is very important in regards to the research topic of the effectiveness of these two treatments because they offer insight into how exactly the treatments worked in the lives of many individuals who actually have ASD.

Recommendations that could be made in regards to this research could include a further search for data and analysis into the specific benefits that have been found for the different medications that have been prescribed for this population. It would be feasible to have this series of research be further developed into research of this specific information and this might prove to be very helpful and insightful into how to better treat patients with ASD in the future.

### Key References

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