

Vision Therapy and Its Benefit for Children with ADHD and Learning Disabilities

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Disclaimer

- Study was done in my office, Vienna, VA.
- Anna's child is a patient in my office.
- No compensation for doing the study.

ADHD and Vision

- Children diagnosed with ADHD show a much higher rate of vision problems than general population. (Granet 2005, Borsting 2005)
- 10 – 15% of school aged children have a learning disability.
- Attention and Visual learning disability present in 14.5% children (Hendricksen 2007)

Would children with ADHD benefit from vision therapy?

- Does improvement in vision problems symptoms correlate with improvement in ADHD symptoms?
- Does the child's age or sex impact the result of vision therapy or ADHD symptoms?

Vision Therapy and Symptom Changes

- CITT – Randomized clinical trial found significant changes in symptoms by 12 weeks (Scheiman et al 2008).
- Study using COVD Quality of Life Outcomes Assessment found decrease in symptoms after completing Vision Therapy (Daugherty et al).

Vision Therapy and Symptom Changes

- Vision Therapy to treat accommodative dysfunction found decrease in near work related complaints including avoidance, loss of concentration (Sterner et al, 1998).
- Improving oculomotor function resulted in significant improvement in reading scores (Solan, 2004).

Overview Research Method

- Survey was used to assess the effect of Vision Therapy
- COVD Quality of Life Survey – changes in vision symptoms
- Academic Behavior Survey – changes in academic behavior (CITT)
- DSM-IV-TR definition of ADHD inattention type – changes in severity of symptoms related to ADHD.

Length of time doing vision therapy? (months) _____

Age of Patient? _____

Patient: M/F

Diagnosed with ADD: Y/N

Diagnosed with ADHD: Y/N

On the following charts answer with on a scale of 0-4

0-Never	1-Seldom	2-Occasionally	3-Frequently	4-Always
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Academic Behaviors	Before Vision Therapy	Now
1. How often does your child have difficulty completing assignments at school?		
2. How often does your child have difficulty completing homework?		
3. How often does your child avoid or say he/she does not want to do tasks that require reading or close work?		
4. How often does your child fail to give attention to details or make careless mistakes in schoolwork or homework?		
5. How often does your child appear inattentive or easily distracted during reading or close work?		
6. How often do you worry about your child's school performance?		

0-Never	1-Seldom	2-Occasionally	3-Frequently	4-Always
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Quality of Life Symptoms	Before Vision Therapy	Now
<ol style="list-style-type: none"> 1. Headaches associated with near work? 2. Words run together when reading? 3. Burning, stinging, watery eyes? 4. Skipping or repeating lines when reading? 5. Head tilt or closing one eye when reading? 6. Difficulty copying from the chalkboard? 7. Avoidance of reading and near work? 8. Omitting small words when reading? 9. Writing uphill or downhill? 10. Misaligning digits in columns of numbers? 11. Reading comprehension declining over time? 12. Holding reading material too close? 13. Short attention span? 14. Difficulty completing assignments in reasonable time? 15. Saying "I can't" before trying? 16. Tendency to knock things over ? 17- Difficulty with time management? 18. Misplaces or loses papers, objects, belongings? 19. Forgetful, poor memory? 		

0-Never	1-Seldom	2-Occasionally	3-Frequently	4-Always
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Symptoms of Inattention	Before Vision Therapy	Now
<ol style="list-style-type: none"> 1. Fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities. 2. Has difficulty sustaining attention in tasks or play activities. 3. Does not seem to listen when spoken to directly. 4. Does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace. 5. Has difficulty organizing tasks and activities. 6. Avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as homework) 7. Loses things necessary for tasks or activities (toys, school assignments, pencils, books, or tools). 8. Is easily distracted by outside stimuli. 9. Is forgetful in daily activities. 		

Survey

- If applicable, since starting vision therapy has the patient also started or altered any of the following: Behavior Modification Therapy, Dietary Changes, Medication started/stopping/changes? (describe below)

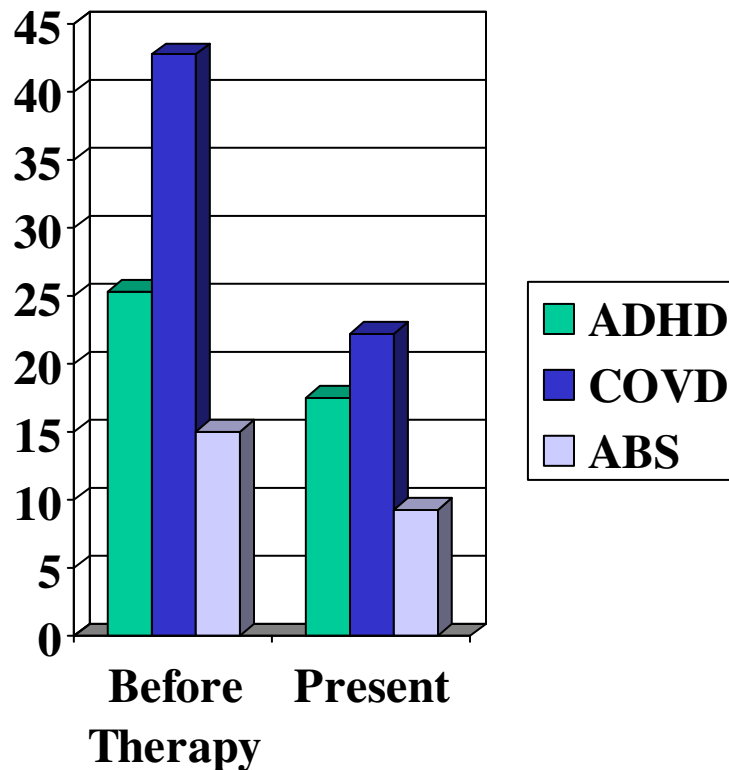
Subject Population

- Completed surveys: 26
- Number of Males: 17
- Number of Females: 10
- Average Age: 8.4 yrs
- Age Range: 5 to 14 years
- Average time in tx: 7 months
- Range of tx time: 1 mo to 24 mo
- Dx with ADD/ADHD 6

Significant Scores

- ABS
- COVD Quality of Life
- ADHD

Frequency of Observed Symptoms



- There was a significant decrease in symptoms for all three surveys
- Range of time in therapy is 4 to 24 months

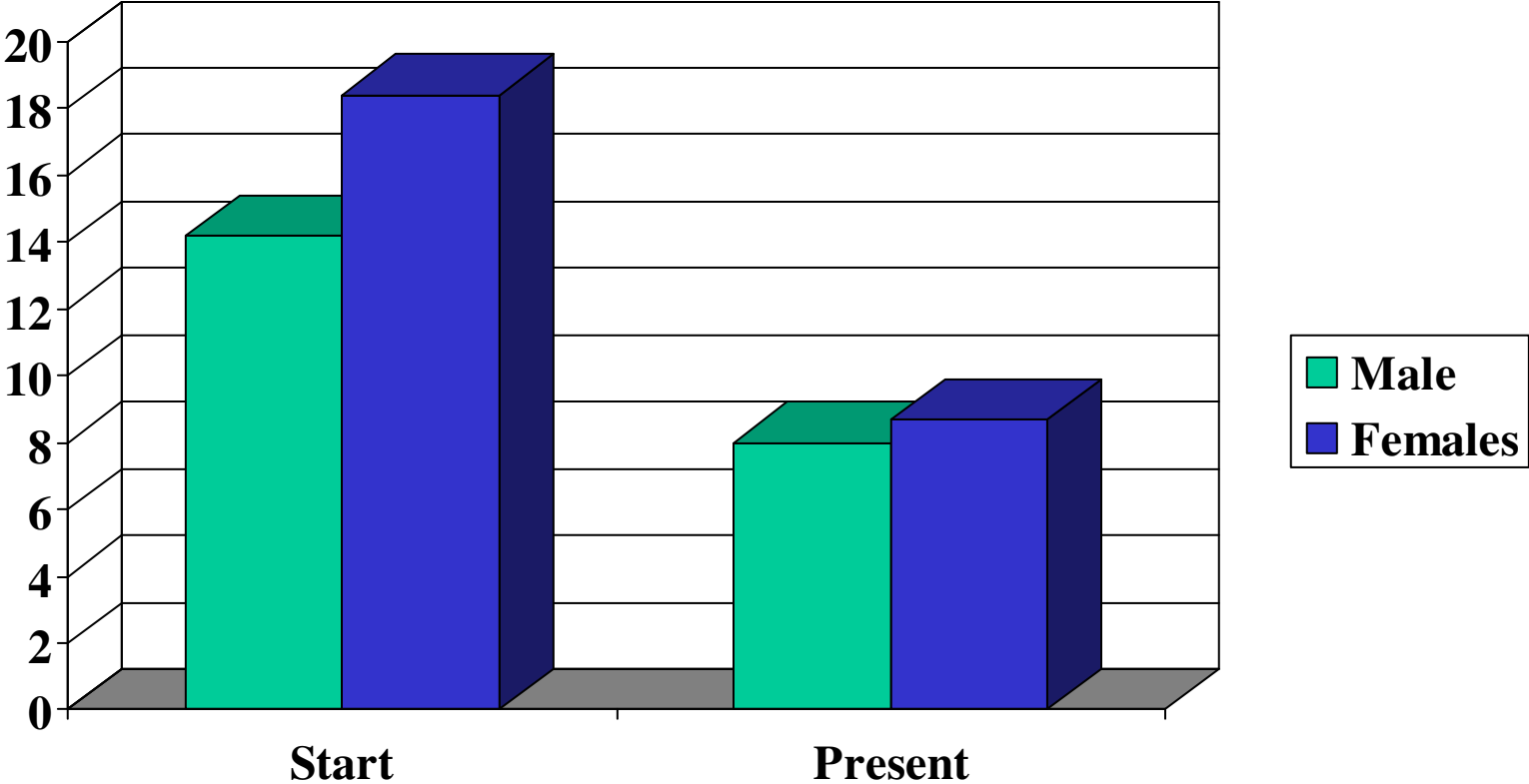
ABS Symptom Changes

- How often does your child avoid or say he/she does not want to do tasks that require reading or close work?
- Decreased from initial score of Frequently (3) to a score of Occasionally (2)

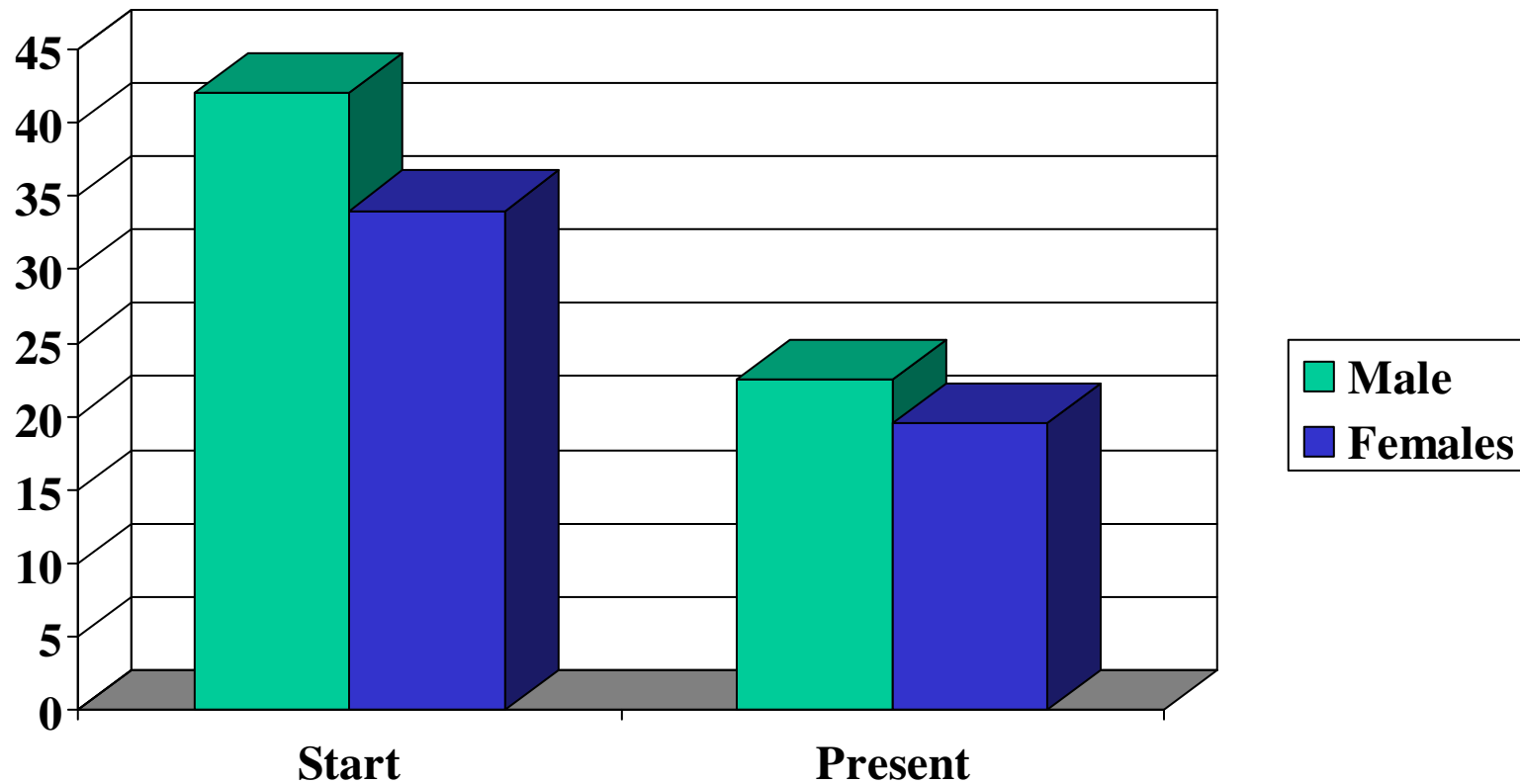
COVID Quality of Life Survey

- Skipping or repeating lines when reading?
Decreased from an initial score of Always (4) to Frequently (3)
- Difficulty in completing assignments in the given time:
Decreased from an initial score of Frequently (3) to Occasionally (2)

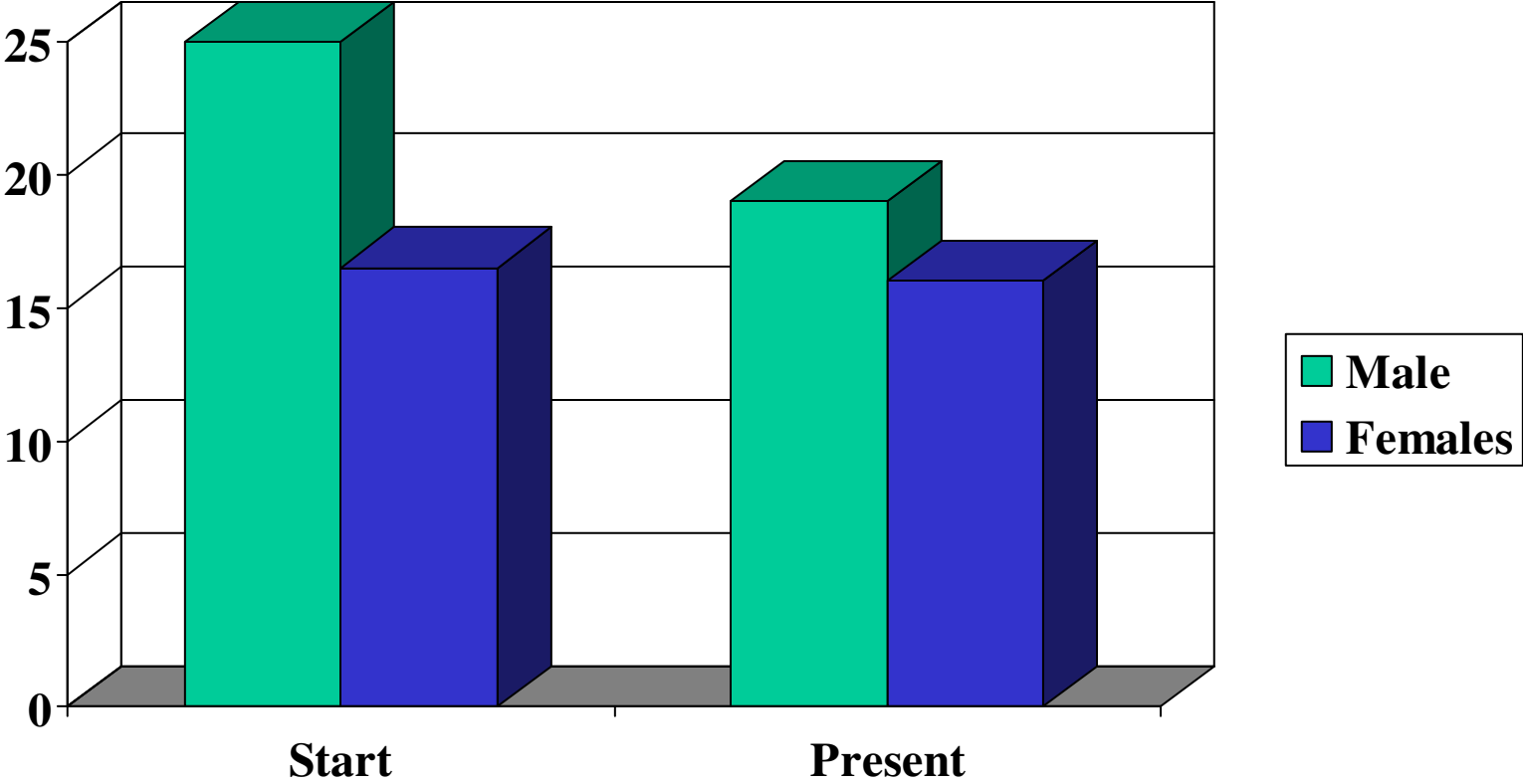
Gender Differences in Frequency of Academic Behaviors



Gender Differences in Frequency of Symptoms COVID Survey



Gender Differences in Frequency of Symptoms ADHD



ADD/ADHD Symptoms

	ABS Start	ABS Present	% Decrease
+ ADD/ADHD	16.1	10.3	35.9%
- ADD/ADHD	15.0	8.7	42.2%

ADD/ADHD Symptoms

	COVD Start	COVD Present	% Decrease
+ ADD/ADHD	37.4	24.1	35.6%
- ADD/ADHD	42.7	23.3	45.3%

ADD/ADHD Symptoms

	ADHD Start	ADHD Present	% Decrease
+ ADD/ADHD	25.3	19.0	25.0%
- ADD/ADHD	17.0	17.0	0.0%

ADD/ADHD Symptoms

Total Sx Frequency Start	Total Sx Frequency Present	% Decrease
25.5	17.3	31.9%

Covariance and Correlation

Covariance	
Covariance of tx time vs. ABS	11.7
Covariance of tx time vs. COVD	23.4
Covariance of tx time vs. ADHD	10.7
Correlation	
COVD vs. ADHD	0.56
COVD vs. ABS	0.84
ADHD vs. ABS	0.57

Conclusion

- Patients diagnosed with ADD/ADHD showed a decrease in ADHD symptoms. The average frequency decreased 31% from 25.3 to 17.5
- Symptoms on the COVD QOL survey decreased 48% from 42.7 to 22.2
- ABS symptoms decreased 38% from 15.0 to 9.3

Future Study

- Small sample size. Survey provided to doctors in the area to increase sample size.
- Survey completed at the initial visit, four months and post therapy.
- Specify diagnosis code on the survey to correlate relationship between specific diagnosis and symptom changes.

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