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Brittany Long

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Running Head: RECESS

What Behavioral Effect Does Recess Have on Elementary-Age Students  
Diagnosed with Attention Deficit Disorder and Attention Deficit  
Hyperactivity Disorder (ADD/ADHD)?

Brittany Long

University of Alabama in Huntsville

Honors Program

College of Nursing

# University Honors Program Research Project

## APPROVAL PAGE

Student Name: Brittany Long

Department: Nursing

College: Nursing

Degree: Bachelor's of Science in Nursing

Project Advisor: Dr. Lynx Carlton McClellan

Full title of project as it should appear in Graduation Program and transcript:

What behavioral affect does recess have on elementary-age students diagnosed with Attention Deficit Disorder and Attention Deficit Hyperactivity Disorder (ADD/ADHD)?

Abstract:

Neurobehavioral disorders such as Attention Deficit Disorder and Attention Deficit Hyperactivity Disorder (ADD/ADHD) are characterized by hyperactive behavior, a lack of focus, distractibility and difficulty with organization. The maintenance of these symptoms in students diagnosed with ADD/ADHD is a primary goal of scholastic and medical professionals. The objective of this research is to observe what elementary school policies are currently established regarding recess; to present information regarding behavioral responses of children with ADD/ADHD in the scholastic atmosphere, which in turn will promote symptom management as well as support school policy recommendations; to inform relevant organizations concerning this issue and encourage active intervention through example-setting and policy changes. The design of the study included: a survey of questions that was administered to teachers regarding recess, behavior outcomes related to the entire class, and behavior outcomes related specifically to student populations with ADD/ADHD. Questions were presented in the form of a Likert scale and fill-in-the-blank style.

Approved by:

Project Advisor: Lynx Carlton McClellan (signature) Date: 4/30/2010

Department Chair: Dawn J. W. Lee (signature) Date: 4/30/2010

University Honors Program Director: H. S. O'Connell (signature) Date: 5-5-10

## Dedication

The author wishes to thank Caitlin Philips and Kait Rich for their collaboration and participation in this project. I could not have done this project without each of you, and I am greatly appreciative of your time, knowledge, and hard work.

### **Abstract**

Neurobehavioral disorders such as Attention Deficit Disorder and Attention Deficit Hyperactivity Disorder (ADD/ADHD) are characterized by hyperactive behavior, a lack of focus, distractibility and difficulty with organization. The maintenance of these symptoms in students diagnosed with ADD/ADHD is a primary goal of scholastic and medical professionals. The objective of this research is to observe what elementary school policies are currently established regarding recess; to present information regarding behavioral responses of children with ADD/ADHD in the scholastic atmosphere, which in turn will promote symptom management as well as support school policy recommendations; to inform relevant organizations concerning this issue and encourage active intervention through example-setting and policy changes. The design of the study included: a survey of questions that was administered to teachers regarding recess, behavior outcomes related to the entire class, and behavior outcomes related specifically to student populations with ADD/ADHD. Questions were presented in the form of a Likert scale and fill-in-the-blank style.

**Key Words** Attention Deficit /Hyperactivity Disorder, recess, unstructured play, breaktimes, students

## **Introduction**

This study was designed to determine the effects of recess on elementary-age students diagnosed with Attention Deficit Disorder and Attention Deficit Hyperactivity Disorder (ADD/ADHD), which is considered the most common neurobehavioral disorder of childhood (Kuo & Taylor, 2004). Our objective is to determine the benefits of recess on children diagnosed with ADD/ADHD and bring awareness to the fact that recess is essential to a students' success. A reduction of recess time in order to increase class time might seem to be helpful to improve academic performance; however, the lack of adequate recess time is counter-productive for many students. The DSM IV criteria for the ADD/ADHD diagnosis includes: hyperactive behavior, a lack of focus, distractibility and difficulty with organization (Diagnostic and Statistical Manual of Mental Disorders (DSM) IV 314.01). For this study, recess is defined as a stop in any structured activity associated with class, or a "suspension of business" in the classroom (Merriam-Webster Dictionary, 2010). Qualifying recess activities for this study include: playground play, quiet classroom play, open gym time, rotating through stations in the classroom, and free time. For this study, the student is defined as a child age 6-12 years who is currently enrolled in an elementary school.

## **Review of Literature**

Problems in school are a key lifestyle feature of children with Attention Deficit Hyperactivity Disorder (ADHD), which often brings the child to clinical attention (Loe & Feldman, 2007). Poor grades, test scores, reading, and math are often associated with increased use of school-based services. In addition, increased rates of detention and expulsion are common among children with ADHD. Pharmacological treatment can reduce the core symptoms of hyperactivity, inability to focus, and decreased attention span, but may not provide enough relief for the optimum function of some children in an academic setting. The authors conclude that more research must be conducted to study the academic outcomes of students with ADHD, and educational intervention may become a necessity in the future.

Recess is a valuable tool for elementary-aged students and allows the student an opportunity for activities aside from academics to develop important skills, such as "cooperation, respect for rules, taking turns, sharing, and problem solving." (Pytel, 2009). The article notes

that pressures from school and stress are reduced the more children participate in playtime. By engaging in unstructured play, especially recess time, children benefit by approving social accountability and keeping a healthy physical appearance. Pytel states that, “research suggests there may be a correlation between engaging in unstructured play activities with peers and higher scores on intelligence tests.” Teachers found that students pay more attention in the classroom after recess, as well as exhibiting less troublesome behavior. Overall, Pytel’s position is that at least twenty-minutes of unstructured play will enhance the student’s overall well-being in relation to school work, social interactions, and stress reduction.

Regular physical activity is associated with improvements in physiological and psychological health, ADD/ADHD management, and disease prevention (Verstrete, Cardon, Clerq, Bourdeaudhuij, 2007). The article also notes that a substantial number of students have lower physical activity levels than recommended for “good health,” making the emphasis of lifelong physical activity imperative, and that recess in the school environment is an ideal setting for the promotion of physical activity. The authors conclude that the promotion of physical activity in school enabled the students to implement more physical activities in their own leisure activities, thus assisting in the continuous maintenance of ADD/ADHD symptoms in respective students.

Non-medical personnel are frequently involved in the management of care for children with ADD/ADHD (Malacredia, 2004). Non-medical personnel can exhibit “social control”, i.e. a professional granted authority over children, in the student’s symptom management. In particular, teachers have one-on-one interaction with students with ADD/ADHD for a significant amount of time and can administer non-drug therapies for ADD/ADHD symptom management. Malacredia identifies a lingering hesitation in physicians and teachers in acknowledging the biological causes of ADD/ADHD and maintains a persistent belief that the symptoms should be non-medically controlled to the furthest extent. Teachers working within this paradigm will use distraction, meditation, and other methods to control the student’s symptoms. In addition, teachers had a considerable influence on the recognition, diagnosis, and promoting treatment/discouraging treatment on mothers with children exhibiting symptoms. According to Malacredia, teachers could exhibit “social control” in the classroom over the children and use the methods described above.

Standard medical treatments for ADD/ADHD management often provide only temporary relief from the disorder and may also involve many negative side effects. Kuo and Taylor's study examined the effects that nature and other outdoor settings had on students with ADD/ADHD and found that "green" settings reduced symptoms in children across a wide range of individual, residential, and case characteristics. Furthermore, it was repeatedly indicated that the same 2 x 2 (Physical x Social Context) activities, when performed outside and in a "green" setting, rather than indoors, significantly reduced the symptoms of ADD/ADHD. In addition, parents who were surveyed also noted that fresh air, natural light and open spaces contributed to reducing their child's symptoms. The authors conclude that medication coupled with outdoor breaktimes can offer a continued and complete relief of the symptoms of ADD/ADHD.

Academic adjustment and children's peer/adult development is enhanced with school-day recess periods and breaktimes (Pellegrini and Bohn, 2004). Frequent recess and breaktimes were shown to improve classroom participation on scholastic and social levels, particularly concerning concentration on schoolwork and the child's readiness to learn. The variance of school policies regulating these breaks were disconcerting to Pellegrini and Bohn, who stated that "opportunities for recess are being minimized" as well as inconsistently implemented across school districts on a national level. School policies for education and achievement programs should be based on the recent empirical data, which states that minimizing recess and breaktimes are counterproductive to a child's learning process. Pellegrini and Bohn call for accountability of the school board towards students, parents, and teachers for the construction of a daily timetable that promotes optimum growth and learning of a child.

According to Article 31 of the United Nations Convention on Children's Rights (1990) every child has the "right to leisure time to engage in play and recreational activities." Reducing recess, whether as a disciplinary action or in the name of achieving higher academic standards, infringes on that right. Because physical activity increases the ability to process an assortment of information, it leads to an enhanced retention of facts, a greater understanding of concepts, and the ability to master new information. Article 31 also states that schools must provide equal opportunities for recreational activity as well as traditional education, and that the child must be protected from anything that interferes with the child's education or could "be harmful to the child's health or physical, mental, spiritual, moral or social development." Unstructured play



during breaktimes and recess fulfills these important components, and it inhibits a student's development to reduce these opportunities in school, particularly the student diagnosed with ADD/ADHD. In addition, The American Academy of Pediatrics states that, "free unstructured play is healthy and essential for helping children reach important social, emotional, and cognitive developmental milestones, as well as helping them manage stress and become resilient." (Ginsburg, 2007)

According to Barros, Silver and Stein, play is one of the most important aspects of child development (Barros, Silver, Stein, 2009). This study followed students and found that children became more fidgety and less attentive when recess was delayed and that students were less attentive before recess than after recess and were more inattentive when recess was delayed. Recess provides children with an opportunity to engage in physical activity and provides a break from the daily routine. The authors state that allowing a mental change assists the student in becoming more attentive to academics. The authors conclude with a hypothesis that children who received recess would behave better in the classroom as a group compared with those who did not receive recess.

In the book, *The Learning Gap*, Stevenson and Stigler illustrate the discrepancy of recess between the American and Asian cultures and the academic outcomes of each. The Asian culture supports frequent recesses, long lunch-periods, and short breaks after 50-minute periods of instruction. The Asian countries also have high levels of overall academic achievement in their schools. The authors also address the fact that parents in the Asian countries help their children with homework and learning at home, a crucial, unmet need in many American homes. The authors conclude that America is in trouble with our educational system and that intervention is critical for the success of our children (Stevenson, Stigler, 1992).

### **Methods—See Appendix A for Tool**

In order to observe the local school policies and implementation of recess and breaktimes, we conducted a 2-page anonymous questionnaire distributed to randomly selected elementary schools. The questionnaire inquired about recess times, activities, special

accommodations for children with ADD/ADHD, and included a one-page Likert scale which indicated whether or not teachers noticed a change in the child's ADD/ADHD symptoms after recess or unstructured play. Both the questionnaire and Likert scale were prepared by reviewing similar tools and the DSM-IV.

Upon approval of the project from the University's Internal Review Board, the surveys were distributed to a random selection of elementary schools in the county, and in turn the principal of the school delivered the surveys to random teachers in the school. All schools were informed that survey results would be anonymous and would not contain any individual teacher's or child's name. Thirty of seventy surveys were completed and returned.

## Results

Of the teachers surveyed, none had a class composed of more than 50% ADD/ADHD students. The survey revealed:

After recess, 53% of teachers were neutral in noticing a decrease in hyperactivity and 33% noticed an increase in the students' focus.

After unstructured play, 56% of teachers were neutral in noticing a decrease in hyperactivity and 36% noticed an increase in the students' focus.

40% of teachers stated that recess had a positive effect on students and 83% highly recommend it; 30% stated that unstructured play had a positive effect and 63% highly recommend it.

As shown above, a majority of the teachers were neutral when asked concerning specific recess and unstructured play outcomes, yet overall had a positive response, and stated they would highly recommend it.

The data revealed that students in these schools have recess an average of 4-5 times per week for 15 minutes. A majority of these recesses consist of unstructured play. In the activity list for unstructured play, teachers stated:

*"Puzzles, blocks, kickball, 4-square, tag, basketball, cone sweep."*

*"Reading, drawing, finishing homework, AR [accelerated reading] testing."*

*"Unifix cubes, legos, free writing, ABC books, math games, free play (recess), play dough."*

*“Recess centers – home living, reading, puzzles, blocks and construction.”*

*“Free play – children pick from toys and games in the room to play with. Must put up game or toy before picking another.”*

*“They get up to run errands, hand out materials, stand up instead of sitting down, do movement songs.”*

The data also revealed that many teachers were unhappy with the lack of recess at their school. In the comment section, teachers wrote:

*“Because of our system’s academic requirements our day is very structured and does not allow for unstructured play.” Note: Yet our academic rating is one of the lowest in the industrialized countries! We have LESS recess and WORSE grades – recess has been proven to improve grades!”*

*“I believe that children would benefit from a 15-min morning recess and a 15-min afternoon recess. I believe the new practice of no recess for older students 4-6<sup>th</sup> is detrimental not only to ADD students but to all students. I believe the new trend to discontinue kindergartners play in unstructured time is detrimental.”*

*“I believe it is extremely important that students are given recess each day. They are more willing and ready to learn with a recess break in their daily schedules.”*

Teachers also mentioned several times that ADD/ADHD students are often given “special tasks to keep them busy – teacher’s helper, running errands, peer helper, check-off check lists.

What behavioral effect does recess have on elementary-age students diagnosed with ADD/ADHD?

Recess 9

When asked how many times per day/week does your entire class get recess, here were the responses:

*“Once per day, extra recess for Fabulous Friday.”*

*“Two days – 15 minutes – scheduled recess.”*

*“Once a week for 15 minutes.”*

*“One per day, five per week.”*

*“Once a day.”*

*“Three to five times per week.”*

*“15 minutes per day – usually four to five days per week.”*

Average recess time: 4-5 times per week for 15 minutes each day.

Unstructured play per recess time:

*“10-15 minutes.”*

*“25 minutes.”*

*“5 minutes. When they lose interest in the game being played at recess.”*

*“15 [minutes].”*

*“15 minutes.”*

*“20 minutes once a day.”*

*“10 minutes.”*

Number of schools with ADD/ADHD student considerations: Thirteen

**Table 1 Raw Data Results from Likert Scale**

Survey Results	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
After at least a ten-minute period of recess, I notice a decrease in hyper-activity	3	2	16	5	4
After at least ten-minute period of unstructured play, I notice a decrease in hyper-activity.	2	4	14	8	2
After at least a ten-minute period of recess, I notice an increase in child's focus	2	1	17	7	3
After at least a ten-minute period of unstructured play, I notice an increase in the child's focus.	2	3	14	8	3
Unstructured play, rather than structured play (recess), has a more positive effect on overall behavior	1	8	9	9	3
Structured play (recess), rather than unstructured play, has a more positive effect on overall behavior	1	5	15	8	1
I view recess to have a positive effect on children diagnosed with ADD/ADHD, and highly recommend it	0	0	5	16	9
I view unstructured play to have a positive effect on children diagnosed with ADD/ADHD, and highly recommend it	0	0	8	13	6
TOTAL SURVEYS: 30					

## Discussion

When reviewing the activities listed in the submitted surveys for unstructured play, several included educational activities such as math games, homework, and Accelerated Reading testing. The research conducted by Pellegrini and Bohn, as well as our personal data, shows that after an extended period of instruction, students need an unstructured breaktime to process and re-set

their cognitive function; “getting the wiggles out” will reenergize the body and mind for more instruction. Without these breaks, students overload with new information and do not retain the knowledge long-term as desired.

Although teachers responded positively towards recess, stating that the breaktimes were beneficial all-around, they did not identify them as helpful in refocusing the students. This may be attributed to an inadequate frequency and length of the recess, since the average recess calculated from the surveys was approximately 15 minutes once a day. Such a limited amount of time is not an appropriate length to fully relieve students from the stress of the instruction periods. In that period of 15 minutes the students will often be escorted to an assigned playroom or playground, given a select toy, game, or homework assignment, and then escorted back into the classroom. All this considered, there is minimal time for actual unstructured play, which has been identified to be the most effective for optimum focus after recess. Although additional research is needed to identify the appropriate proportion of classroom instruction time and breaktimes, one can still conclude that any type of unstructured play is beneficial to a child’s cognitive development.

In addition, students diagnosed with ADD/ADHD particularly are affected by the limited break and recess scheduling by school policies. The maintenance of their symptoms is severely limited by shortcoming their opportunities for unstructured play. It was found that thirteen of the surveyed schools implemented considerations for students with ADD/ADHD via Individualized Education Program (IEP). This governmental program is designed for professionals to collaborate with parental insight to format an individualized study plan for students with disabilities. All students diagnosed with ADD/ADHD are enrolled into an IEP “to ensure effective teaching, learning, and better results for all children with disabilities” (Office of Special Education and Rehabilitative Services U.S. Department of Education, 2010). Special considerations include photocopying teacher’s notes, oral quizzing, and quiet-room testing. This program does not, however, have a recess or breaktime consideration outlined.

Overall, after conducting this survey, the researchers found that unstructured play ultimately benefited elementary-age students with increased classroom focus and long-term cognitive, physical, and emotional growth. Teachers expressed concern that the students were

not allotted enough breaktimes throughout the day and want to increase the frequency and duration of recess. Although the activities of unstructured play differed, there was consistent feedback reported in the students' overall positive classroom performance. The results were comparable with information gathered from other United States research.

### **Conclusion**

The maintenance of hyperactive behavior, a lack of focus, distractibility and difficulty with organization in students diagnosed with ADD/ADHD is a primary goal of scholastic and medical professionals. Students and professional dealing with children should familiarize themselves with the behavioral responses of children with ADD/ADHD in the scholastic atmosphere, which in turn will promote symptom management as well as support school policy recommendations. Current elementary school policies regarding recess and breaktimes are inconsistent, varied, and not based on empirical evidence. We recommend informing relevant organizations concerning this issue, encouraging active intervention through example-setting and policy changes as well as more research to bring attention to the needs of this student population.

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What behavioral effect does recess have on elementary-age students diagnosed with ADD/ADHD?

Recess 14

UNICEF (1990). Convention on the rights of the child. *General Assembly Resolution 44/25*.

Verstrate, Cardon, Clercq, & Bourdeaudhuij. (2007). A Comprehensive Physical Activity Promotion Programme at Elementary School: The Effects on Physical Activity, Physical Fitness and Psychosocial Correlates of Physical Activity.

Appendix A: Honors Tool

**National Student Nursing Association Research Survey**

This survey pertains only to children in your class who have been diagnosed with Attention Deficit Disorder and Attention Deficit Hyper Activity Disorder (ADD/ADHD). Please make all responses in regard to those student populations.

For this survey, **recess** will be defined simply as a stop in any structured activity associated with class (math, science, English, writing, reading, physical education, history, etc). For example: Finger-painting the numbers 1-10 when learning to count is not considered recess even though it is enjoyable. Also, disregard the lunch period as it is neutral (neither work nor play).

For this survey, **unstructured play** refers to children using their imagination and creativity in unorganized play. Parallel, solitary, associative, and collaborative play do count if the child can choose the activity. *Qualifying activities* range from playground play, to quiet classroom play, to open gym, and free time. Activities which *do not qualify* for this survey would include: moving through “stations” in the classroom, physical education class, rest periods, and reading circles. Again, only the times when the *child chooses* the activity in which he/ she will engage. If you let your class engage in **unstructured play** during class, count that as one recess per day. Please list the activity/ activities the children engage in during that time.

Activity list for **unstructured play**:

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A) How many times per day/ week does your entire class get **recess**?

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B) On average, how many minutes of **unstructured play** does your entire class experience each **recess** period?

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C) Are there special considerations for the students with ADD/ ADHD in your school?

1) Yes 2) No

If yes, please explain \_\_\_\_\_

D) Additional comments about your entire class' recess schedule

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Appendix A: Honors Tool (continued)

Please Complete:

Please circle <i>one</i> answer for each line <i>Remember: This survey pertains only to The ADD/ADHD students in your class.</i>	Strongly Disagree		Neutral		Strongly Agree
More than fifty percent (50%) of the students in my class have a diagnosis of ADD/ADHD.	1	2	3	4	5
After at least a ten-minute period of recess, I notice a decrease in hyper-activity	1	2	3	4	5
After at least ten-minute period of unstructured play, I notice a decrease in hyper-activity.	1	2	3	4	5
After at least a ten-minute period of recess, I notice an increase in child's focus	1	2	3	4	5
After at least a ten-minute period of unstructured play, I notice an increase in the child's focus.	1	2	3	4	5
Unstructured play, rather than structured play (recess), has a more positive effect on overall behavior	1	2	3	4	5
Structured play (recess), rather than unstructured play, has a more positive effect on overall behavior	1	2	3	4	5
I view recess to have a positive effect on children diagnosed with ADD/ADHD, and highly recommend it	1	2	3	4	5
I view unstructured play to have a positive effect on children diagnosed with ADD/ADHD, and highly recommend it	1	2	3	4	5

