

Running Head: Children Activity Levels

The Assessment and Evaluation of Activity Levels
In Elementary Children

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Introduction:

Childhood obesity and declining activity levels of school-aged children are major concerns facing children and their parents today. One study showed that only eight percent of elementary schools meet the recommendations made by the National Association for Sport and Physical Education concerning the number of hours per week that should be spent in PE or engaging in physical activity. The study also found that 29 percent of elementary schools for students from kindergarten through 5th grade have no scheduled recess time (Story, Kaphingst, French, Simone, 2006).

The alarming obesity rates in children, along with in-class discussions concerning the Kellogg Food and Fitness Initiative, really inspired this project idea. It was decided to research and study the activity levels of children during recess in elementary schools simply by presenting a survey to elementary school teachers in the northeast region of Iowa. Along with this, barrier maps of playgrounds were done at the schools that participated in our study. Observing the equipment, taking pictures, and evaluating the completed surveys helped to assess the effect of having efficient playground equipment on the activity levels of the children. A study done in 2006 showed that, in general, providing elementary school students with play equipment made them more active during recess (Verstraete, Cardon, DeClercq, De Bourdeaudhuij, 2006). The activity level of the children in our area was also addressed, as well as how they compare to the activity level statistics of children nationally. It was hypothesized that those schools with lower levels in the playground quality assessment would reciprocate lower levels of active children portrayed through the surveys.

Materials and Methods:

To determine what factors affect the choices that children make when it comes to activity at recess and to find out who exactly is more active at recess, a survey was built to present to the teachers of these children. The survey consisted of many questions ranging from what ages of children were at recess to if these teachers encouraged activities. A sample of the survey is attached at the end of this report.

Along with the survey, the group members made playground assessments. Equipment was analyzed and pictures were taken of representative playground areas at each school. Personal, but obvious opinions were disclosed from the group members as the deciding criteria for the conditions of each playground. The playground assessments were done and surveys were given to teachers at the following school districts: South Winneshiek Elementary in Ossian, Iowa, North Fayette Elementary in both Fayette, Iowa and West Union, Iowa and John Cline Elementary in Decorah, Iowa.

Results:

Through our research of evaluating the survey results and observing various playground equipment, we came across many interesting things. Group members noticed different results correlated with the different age groups, gender of the children, and how much equipment was available. Overall there were slightly higher levels of activity between the pre-kindergarten, kindergarten, and 1st grade group and the 2nd -5th groups (Figure 1). However, there were also greater extremes and outliers in this group. All age groups had an average of more than 90% of the students being active (Figure 1).

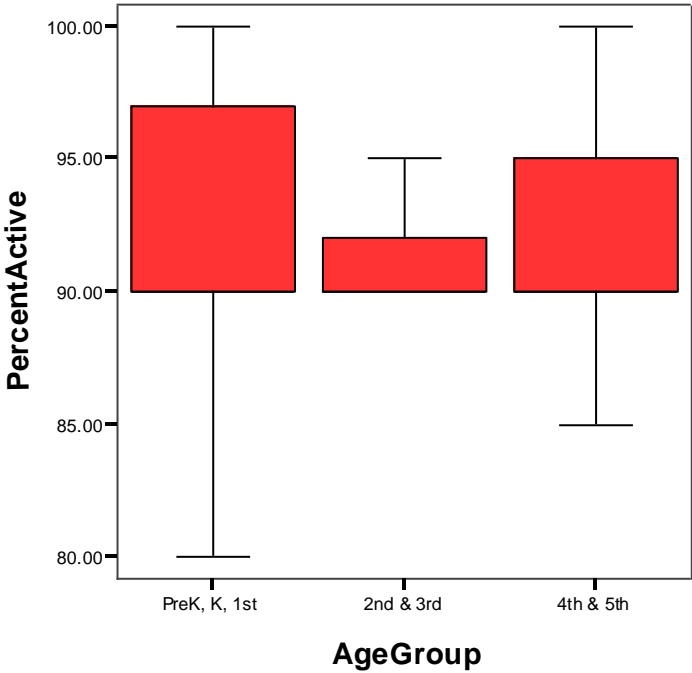


Figure 1: The total median and range percentage of active students for each age group.

Of the percentages of active students for all schools, the pre-kindergarten, kindergarten, and 1st grade group reported the greatest use of the schools playground equipment. It also showed the least variation between schools (Figure 2). The 4th and 5th grade group had the greatest variation between equipment use overall (Figure 2).

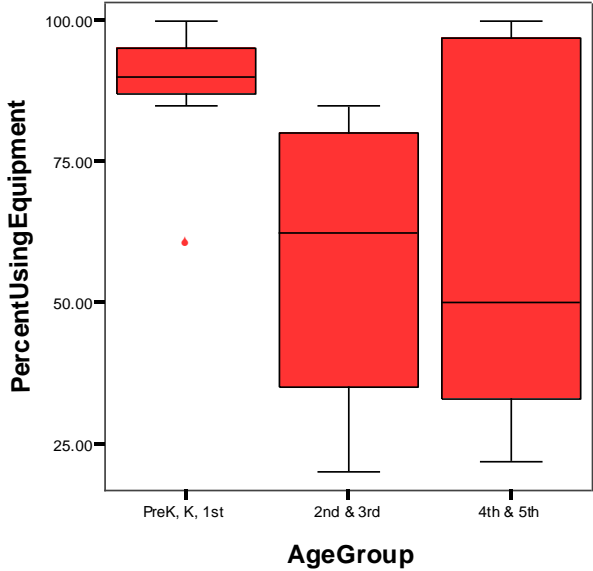


Figure 2: The total median and range percentage using equipment of the active students for each age group.

Ossian Elementary School (South Winneshiek District) had high numbers of active students using the schools' equipment for all age groups. The 2nd and 3rd grade group however, had lower results in both categories than did the other two age groups (Figure 3).

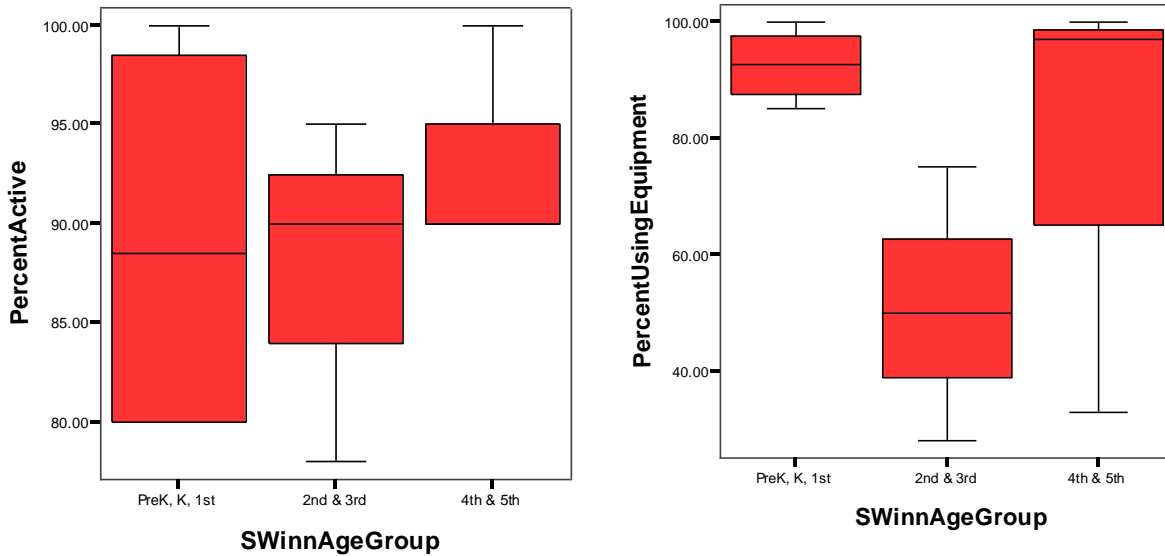


Figure 3: The median and range percentage active students and percentage of active students using equipment for students from Ossian Elementary School for each age group.

Of those surveyed, very few recess supervisors reported encouraging activity or interacting with the children outside of the formation of teams. The Ossian playground equipment is old and wooden, but still appeals to a wide variety of ages. It has slides and climbing equipment as well as a basketball court and soccer nets. There is a large field for games and there is a baseball field as shown next in Figure 4.



Figure 4: An example of the equipment available for South Winneshiek Elementary students to use during recess.

The Fayette Elementary Schools, West Union and Fayette, had a greater difference between the activity levels of the two age groups (Figure 5). The 5th grade group was reported to be more active than their younger counterparts, but they tended to use less of the school's equipment (Figure 5).

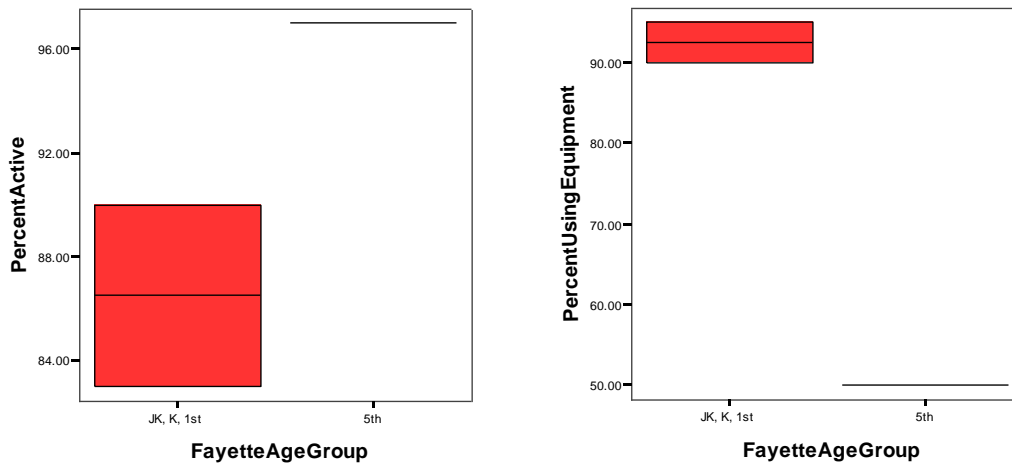


Figure 5: The median and range percentage of active students and percentage of active students using equipment for students from Fayette Elementary Schools at each age group.

Many were reported to be playing more games like football, soccer, tag, and tetherball. Of those surveyed, all of the supervisors of the 5th grade group reported they encourage inactive students to become active. On the other hand, of those who supervised the pre-kindergarten, kindergarten, and 1st grade group only 50% said that they actively encouraged and promoted consistent activity.

Two of North Fayette's elementary schools' playgrounds are shown in Figure 6 below. The equipment at West Union is colorful and well maintained. There is a large field for playing that extends far beyond the school grounds. There are swings, slides, and climbing equipment, and they all appear to be in very good shape. The Fayette playground, however, is in worse shape. There is limited climbing equipment, two swings, one slide, one soccer net, and a small grassy area.



West Union



Fayette

Figure 6: A representation of North Fayette elementary schools' playgrounds.

John Cline Elementary School had surveys returned from only one age group: kindergarten, 1st, and 2nd. The teachers reported a high number of active students and of those active students almost all used the school's equipment (Figure 7).

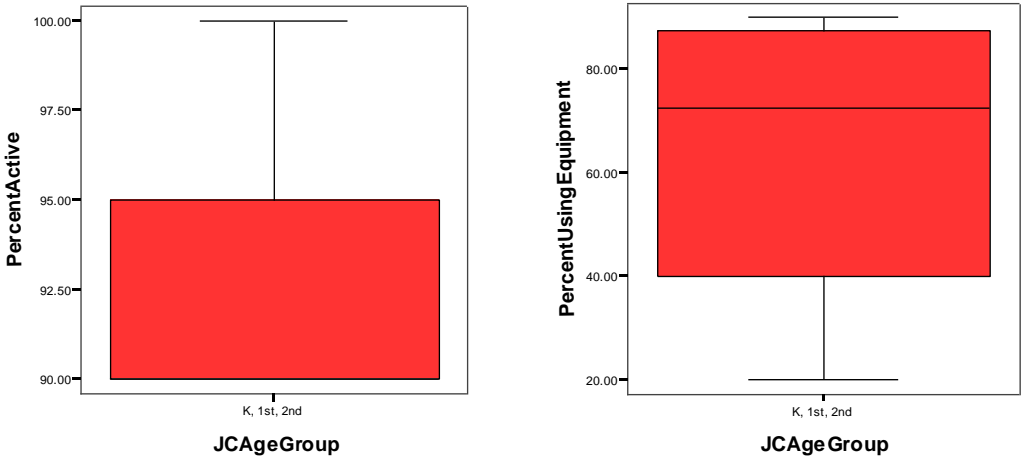


Figure 7: The median and range percentage active students and percentage of active students using equipment for students from John Cline elementary school for each age group.

Of those surveyed, almost all reported that they do not actively interact with the children, but visitors or volunteers sometimes do. One explained that there were simply too many children and if they were to interact, then they would be unable to safely supervise so many. As shown, The John Cline playground is rather well kept up and has a handicap accessible playground as shown in Figure 8 below. There is a basketball court as well as some climbing equipment and swings. There is some graffiti on the handicap playground and some of the equipment is older looking, but it is still in relatively good shape.



Figure 8: A section of John Cline Elementary's playground equipment.

Discussion:

Through our study using surveys and playground assessments, our findings made it possible to make many interesting conclusions. Activity levels in schools around the country are declining and obesity levels are on the rise. The state of Iowa was of particular interest because being a farm state, it was assumed the obesity and BMI levels

would be on the low side compared to other states. Studies showed the average BMI in the state of Iowa in 2001 to be 19-26. The normal BMI range is 18-24. This shows a large amount of our state is overweight (Obesity in America, 2001). With this conclusion and others made previously, strong evidence suggests that further evaluation of the obesity problem in Iowa should be conducted.

The research starts exactly where the obesity problem could end. The elementary schools in Northeast Iowa showed varying numbers when asked who participated during recess and for how long. The average activity levels and use of equipment for preschool and kindergarten students for the schools evaluated were as follows: 90% active and 95% use equipment in Fayette, 93% active and 80% used equipment at John Cline in Decorah, and 94% active and 87% use equipment in South Winneshiek. Comparing these numbers to the activity levels of 4th and 5th graders, South Winneshiek had 87% of kids active while only 50% of the students used the equipment. The other schools showed similar numbers. This drop in percentage might not seem significant, but it implies a lot when thinking in terms of obesity.

These numbers show that activity levels are already dropping between kindergarten and 5th grade. Using this trend, activity levels and use of exercise equipment will continue to drop when these children become teenagers and adults. Another national study showed 90 percent of 3rd graders accumulated the needed amount of exercise per day. This declined to 62 percent of boys and 44 percent of girls by grade seven. By grade 11, only 12.6 percent of males and 6.9 percent of females reached this activity level (Jollimore, 2003). The study also showed that with the addition of playground equipment appropriate for each age group the activity level of those children

increased. The results are consistent with another study done in Europe. They state, “Providing game equipment during recess periods was found to be effective in increasing children's physical activity levels...promoting physical activity through game equipment provision during recess periods can contribute to reach the daily activity levels recommended for good health” (Verstraete, Cardon, De Clercq, De Bourdeaudhuij, 2006).

The results show that from a young age, children are not pushed to exercise or participate in daily activities to better their health. As the surveys portray, many teachers who watched over research submitted answers saying that they were only expected to monitor play and not to encourage or participate in the activities themselves. With the addition of adults who participate by showing the children new games or different ideas, many more children would partake in recess activities, especially at the young age of preschool and kindergarten when children tend to look up to their teachers more. The obesity problem starts with young children and by helping them to stay active the problem could begin to decrease throughout our country. Jollimore sums up specifically what we stated, “This is a crucial population health issue. Inactive kids grow into inactive adults; obese kids grow into obese adults” (2003).

In some reports, barriers were shown to decrease children's activity levels in elementary schools. Lack of opportunity and physical safety were among issues of why children did not participate or use equipment provided for them during recess (CDC, 2002). Through the playground assessments, we could conclude the same. One specific case was in the North Fayette school district at the elementary school playground in Fayette. Only about 50% of students use the equipment here. As shown in Figure 6 in

our Results, this playground is inadequate for students. The equipment and space provided is limited for the amount of children who have recess at one time. Also, most of the equipment is old and appears unsafe.

Some sources of error in the study done could be with teachers' exact interpretations of the questions in the survey. A number of teachers were always around these specific children, while some reported only seeing the children at recess once a week. Their portrayals of activity could have resulted from only one day at recess, compared to other teachers who based their answers on a week of data. There could also have been discrepancies in the definition of activity between the teachers also. We were not able to distinguish what they meant by activity from our surveys.

We have found that this research very much compares with other research done nationally. Many projects throughout the United States have focused on children's activity level and how it will benefit them in the long run. These reports are cited throughout this paper. Our study, along with most of the other studies researched, seems to stop at the presented data. The next step would be to get more specific with the children at these schools. Obesity levels would be obtained from each child and then a consultation with their parents could be arranged to talk about their home atmosphere. This would give us insight into whether the major cause of some of these kids' weight problems is genetics or if the cause could be resolved by a change in diet and more consistent exercise. These specific evaluations would help personalize the next step in preventing and treating obesity of these children in Northeast Iowa elementary schools.

Although the previously stated continuations to this project would be necessary to control the obesity in these children, obstacles have come up. We as college students

have many limitations as we attend full time classes and are not available to take on a full head-on project such as taming the obesity levels of children nearby. Therefore, it is recommended that one specific group of people could in turn take on the role of challenging these students, parents, and teachers to control the obesity levels presented in the schools. Obesity levels in children are rising so incredibly fast that something needs to be done soon. If nothing is done, these levels are going to continue to skyrocket and will present many young adults and children with diseases originally thought to be only for the elderly. The health and well being of children of all ages is in many people's hands. Who will be the first to become a lifesaver to this world?

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