

Helping New Brunswick Children Become Acquainted with Proper Nutrition

Using fun and educational tools to bring inner city New Brunswick children together to learn about nutrition during after school programs.

Tag words: Nutrition, education, inner city, kids, New Brunswick, Chutes & Ladders, Kids Café, board games

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Summary

The original idea of promoting health awareness to children was formulated and then cultivated in the form of the game Chutes & Ladders to help the children experience nutrition education in a fun and interesting way that would hold their attention and, hopefully, help them more easily remember the nutrition facts they were taught. The game was modified and then played and evaluated to better suit the needs of children in this area. The outcome of this modification will benefit future educators and students wanting to utilize this educational tool as a supplement to any nutrition lesson.

The Issue: Lack of Proper Nutrition

Childhood weight gain and the prevalence of obesity has fluctuated greatly over the past 30 or so years. According to the National Health and Nutrition Examination Survey (NHANES), obesity has increased from 5 to 14% among 2-5 year old children (between 1976-1980 and 2007-2008); 6.5 to 19.6% among 6-11 year olds; and 5 to 18.1% among adolescents aged 12-19 (1). Screening for overweight and obese children is performed using their body mass index (BMI) due to the ease of calculation and its correlation with their body fatness. To calculate BMI only the child's weight and height measurements are needed, which are easily obtained, and then, since they are children, those values are plotted on the CDC growth charts. For children and adolescents (aged 2-19) the CDC growth charts, which show the average growth for normal, healthy children in that age range, are used which then represented the calculation as a BMI-for-age percentile. Overweight is defined as a BMI-for-age percentile between the 85th and 95th percentile. Obesity is defined as a BMI at or above the 95th percentile for children of the same sex and age (2). Obese children and adolescents are at great risk for many health-related consequences which most commonly include psychosocial and cardiovascular risks. Other less prevalent health-associated risks encompass asthma, hepatic steatosis, sleep apnea, and Type-II diabetes.

Nutrition education is of the utmost importance to help prevent childhood obesity and form healthy food relationships and habits that will help these children grow up strong, and lead long, healthy lives filled with good food choices. Unfortunately, many children in limited resource areas are not exposed to adequate nutrition education—and some do not even get proper meals throughout the day. Kids Café is the nation's largest afterschool meal service. It is run through the Community FoodBank of NJ, where their mission is to provide nutritious meals to children in need; Kids Café supplements meals with nutrition education activities (3).

Our group will be in charge of planning, delivering and executing a nutrition lesson and new activity which was previously thought up by the group, "Heart Healthy Fun," from last year's class (4). A nutrition lesson will be taught prior to the game to provide the children with some nutrition knowledge that they will be able to utilize through answering question in the game. We will be taking the game idea from last semester, "Chutes & Ladders: Promoting Health for Children," and testing it out to see if it is a valid tool that can be used in future nutrition lessons to promote health and an understanding of nutrition and healthy food and lifestyle choices.

Community Service Project: Game

The idea for this project is based on the game "Chutes & Ladders," but with a nutrition emphasis. We used the template from last year's "Heart Healthy Fun" group to guide us. However, we made many changes throughout the whole process.

The Layout:

Instead of having a game board with 100 tiles, we decided on what we thought was a more kid-friendly and time-efficient version. We reduced the amount of tiles from 100 to 25 and made it in fun colors and a zig-zag trail around the board. We made the questions more age appropriate, and connected the topic of the question cards (learning about MyPyramid) to the lesson we

taught beforehand. The tiles on the game board were color-coded to correspond with MyPyramid and they are as follows:

Orange- Grain group

Blue- Milk group

Purple- Meat and Beans group

Green- Vegetable group

Red- Fruit group

Yellow- Oils and Fats group

The Rules:

To encourage teamwork and social skills, the game will be played with 8 kids in pairs of 2—a total of 4 teams. The game will start with each pair of teammates at the start area. They will have animated marker pieces to move along the board. One die will be rolled to determine how many spaces the players will advance. For example, if they roll a 4 and that would bring them to a green tile, they will have to answer a question about the vegetable group before they can move there; if they get the question right, they will advance to that green tile, but if they get it wrong they do not get to move on. The next group will roll the die and this process will continue until everyone has finished the game. The game will result in first, second, third place, etc until all teams reach the finish line and win.

The chutes and ladders come into play on specialized tiles that connect two tiles together. Climbing a ladder brings the player closer to the finish line, where sliding down a chute will bring the player back towards the starting point; the bonus Physical Activity questions come into play on these tiles. If they are at the top of a chute and they get the bonus question right, they stay where they are (this is good), but if they get the question wrong, they will have to slide down to the tile at the bottom of the chute which is closer to the starting point (this is bad). It is opposite with the ladder areas. If they get the bonus question right, they climb the ladder to get closer to the finish line, but if they get the bonus question wrong, they stay on their original tile. All in all, chutes bring them back towards the starting area, and ladders advance them towards the finish line.

This is slightly different from the original version of the game. Previously, the game was to be played with 4 children only, and not with teams. Rolling the die was used to advance in the game, the chutes would still bring you back and the ladders would still bring you forward, but there were no bonus questions associated with the chutes and ladders; so there was no opportunity for the person who landed on a chute to stay where they were or for the person who landed on a ladder to stay where they were either. There was no color coordination with the tiles to separate them into the food groups according to the MyPyramid guide. The questions were also not separated into the MyPyramid groups and were random nutrition or health related questions in varying degrees of skill level. Their version of the game also had a beginner's level or an advanced level, with different questions for each, but the game would play out the same way besides this change. The game ended when the first student reached the "finish line".

As the game was being played, we took note of some pros and cons of our new modifications:

Disadvantages:

- It was hard to keep the students attention during the game. Possible reasons being:
 - The environment of the school setting made the kids rowdy and unable to focus on the game.
 - The colorfulness of the board game also served as a distraction. They appeared more interested in the animation of the game rather than the purpose of it.
- The idea of playing in pairs was good in theory however the students were easily distracted and did not use the teamwork approach. We noticed that:
 - The children were socializing more than actually taking part in the game and absorbing the nutritional information.
 - They often disagreed when coming up with a final answer, which resulted in fighting among teammates.
- Since students were unsure, even as a team, about which answer was correct, we feel that the lesson taught beforehand was not sufficient enough. Possible solutions to this are:
 - Some of the questions were unclear to the children without further background information, which we did not have time to adequately teach them.
 - We only allotted 10 out of 30 minutes of our time with them to teach about MyPyramid
 - Due to time constraints and delays on getting the children to settle down, the lesson turned out to be even less time than expected

Advantages:

- The parts of the lesson that we did get to cover were well received
 - The questions pertaining to those subject areas were answered correctly, and it is seen as a sign of comprehension of the material
- The additions of colors and obstacles were a hit with the children

After assessing the game with the newly established rules, we came up with certain solutions on how to make it a better experience for both teachers and students. Firstly, more time and effort should be given to the educational lesson in order for students to fully grasp the concept and questions that the game asks. This will be helpful overall in teaching the children about nutrition—which is the major goal of this new game. Secondly, although the new colorful layout did persuade the children to want to play the game, making it have less tiles did not ease the time constraint we foresaw. The entire experience went over our prearranged timeframe not because of the game board, but because of the students' either unwillingness to play the game, or because they were not interested in learning after their school day was over. We came to the conclusion that giving incentives such as little toys or healthy snacks would provoke the children to behave and pay attention. The game seemed to entertain the kids; however it may have been too involved for an afterschool program.

Conclusion

Considering the above issues we encountered, we believe that this game would be beneficial to teach nutrition in a fun way, but we feel that a school-like setting is not the optimal venue. A possible solution would be to narrow the subject area of the nutrition less down, like focusing on just one part of the MyPyramid, and then narrowing the board game down accordingly, like if the lesson was focused on fruits the board game could consist of only questions about fruits; this

could be done for each topic of the MyPyramid or any other nutrition subject area as well. Another possible solution could be if this was a game that could be bought and played at home for leisure, or in any other long term setting where the game could be played more than once, we think it would be more productive at getting the message across and having the children be able to retain the information in the long run. Even though we wanted to promote teamwork, if the amount of players was four, like in the original game setup, it may have been easier for the children to focus and retain the information on a more personal level so they could more successfully remember and utilize the information in the future.

References

1. <<http://www.cdc.gov/obesity/childhood/index.html>>
2. <<http://www.cdc.gov/obesity/childhood/defining.html>>
3. <http://www.njfoodbank.org/site/PageServer?pagename=Programs_kidsafe>
4. <<https://sakai.rutgers.edu/portal/site/8146f87b-d9c7-42c8-8cad-3b8b6879b375/page/c58553dc-0456-4378-bc71-ddee8535609f>>

Appendices

-Examples of questions:

1. True or False: The darker in color the vegetable is, the healthier it is for you. (TRUE)
2. The reason why it is good to eat meats and beans is for:
 - a. Protein (*)
 - b. Sugar
 - c. Fat
3. What is a good source of “good” fat?
 - a. Fish
 - b. Nuts
 - c. Extra Virgin Olive Oil
 - d. All of the above (*)
4. You should make ____ of your grains whole.
 - a. All
 - b. ½ (*)
 - c. None
5. How many servings of fruit do you need per day?
 - a. 1 ½ cups (*)
 - b. 5 cups
 - c. 3 cups
6. If you are lactose-intolerant (allergic to milk and milk products), how else can you get calcium?
 - a. Almonds

- b. Broccoli
- c. All of the above (*)

Editorials

Nathaly Battifora
Ethics in Science
Editorial

Helping New Brunswick Kids Become Acquainted with Proper Nutrition

A group of Rutgers students and I in Professor Julie Fagan's Ethics in Science class got together to enact and evaluate a program to educate and facilitate underprivileged children about nutritional values. We accomplished this by using an existing program, Kids Café, to supplement our community service project. Kids Café is a program that provides free meals to low income children that already get together like at churches, schools or clubs.

The way that we implemented the project was by taking an idea from Dr. Fagan's previous class which was to teach kids about nutrition through a re-vamped version of "Chutes and Ladders." Our group actually created this board game, played it with the children, and evaluated the outcome the game. Not only were the questions nutrition – related, but we changed the name of the game to "Chutes and Lentils" to tie in the emphasis of nutrition.

There were mixed feelings about the game mostly because of the age of the children. Working in teams and the setting we were in became distractions to the children. Due to our lesson about MyPyramid taught before the game was played, most of the questions were answerable.

In the proper surroundings, this game could actually prove to be beneficial to a younger audience. At home, where the parent can address the child one on one on nutritional values and play the game would be an ideal situation. Also, at school where a teacher is involved can also make this game potentially effective. The more ways we can find to help the youth of America to be nutritionally educated, the more knowledgeable they will be about taking care of their own bodies when the time comes.

Sent to Asbury Park Press:

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Jennifer Collado

Colloquium: Ethics in Science

Editorial

4.14.10

Helping New Brunswick Children Become Acquainted with Proper Nutrition

Obesity has become a great issue in children and adolescents. Among pre-school age children 2-5 years of age, obesity increased from 5 to 10.4% between 1976-1980 and 2007-2008 and from 6.5 to 19.6% among 6-11 year olds¹. You can see it has doubled in the past 25 years, and tripled in the past 3 years, and will only continue to increase if consistent action isn't taken now.

¹ Childhood overweight and Obesity: <http://www.cdc.gov/obesity/childhood/index.html>

Four nutritional science majors (including myself) from Rutgers University and Julie Fagan, a professor at Rutgers, worked together with the Kids Café program in implementing a nutrition lesson to low-income New Brunswick children. This program is coordinated by the Food Bank of New Jersey (located in Hillside) where it provides free meals and snacks to low-income children throughout various communities in New Jersey. Our lesson was held in the Salvation Army located in 287 Handy Street, New Brunswick. It was complemented with a “Chutes and Ladders” simulated game called “Chutes and Lentils” to reinforce the nutrition lesson while also making it kid-friendly. The idea of the “Chutes and Ladders” game was adapted from a previous group also addressing the childhood obesity epidemic. The game was short and friendly, while also providing very important nutrition messages all related MyPyramid (formerly known as the Food Guide Pyramid). The children were able to have fun and still learn how to make more sound and nutritious food choices.

We have concluded that playing games such as “Chutes and Lentils” is an efficient way to grab children and adolescents’ attention where we can provide the necessary information towards our goal in decreasing the obesity prevalence.

Jennifer Collado is a Nutritional Science major, Dietetics option

Sent to The Jersey Journal (Hudson County daily newspaper):

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Angela Hauer
Ethics in Science – Editorial

March 24, 2010

Everyone knows that obesity is a big issue in the United States, and its prevalence in children is especially concerning. Along with the influx of the United States’ waistline, however, came the increase in the interest of nutrition education. Several programs have been developed over the past few years and many have become very popular. One program, Kid’s Café, pairs college nutritional sciences majors with groups of kids from families of lower socioeconomic status in an after-school program where the children receive a nutrition lesson and are then provided with a well-balanced meal, which the children may not have normally been able to get at home. Nutrition education is of the upmost importance to ensure that childhood obesity becomes a thing of the past. As the old saying goes, “it’s hard to teach an old dog new tricks,” and that applies to changing someone’s diet too. Teaching someone when they’re younger makes it easier for them to learn and apply their knowledge to their daily lives so their healthy practices become routine before bad habits form. Teaching the younger generations also allows for the information to make its way home to their parents and older relatives, thereby extending the benefit of nutrition education even further. The United States needs to change its bad habits and start living healthier lifestyles, starting with what goes into their bodies every day. Nutrition education should be taken more seriously and extended into schools and workplaces so that more people can experience and benefit from the lessons that can be learned, but for now other programs and afterschool organizations such as Kid’s Café are a good start.

References:

(http://www.njfoodbank.org/site/PageServer?pagename=Programs_kidscafe)

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Cristina Luibil

Editorial

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In April 2010, myself along with fellow nutrition classmates aided by Dr. Julie Fagan of Rutgers University, were able to teach a lesson about the MyPyramid (formerly known as the Food Guide Pyramid) to elementary school students at an after school program located New Brunswick, NJ. This was made possible by not only the Ethics in Science course at Rutgers, but also by the Community Food Bank of NJ and their Kids Café program. The Kids Café program provides nutritious dinners to students who may not get them at home, as well as supplements these meals with nutrition lessons and activities. The lesson we performed was adapted from Dr. Fagan's previous students who invented a health-promoting board game. It was our group's responsibility to actually make the game board, teach it to, and play the game with the children. The nutrition game was based off of the classic, "Chutes and Ladders", but renamed "Chutes and Lentils" to give it more of a nutritional and kid friendly feel. The basic message of the game and its rules (which were established by the original students who came up with the game) will be assessed by our group and altered to better serve the Kids Café participants, New Brunswick elementary schoolers, and their educators.

After playing and assessing the game, we feel that it is adequately fit to promote health to children in a way that will suit their attention spans; however it would be better suited for playing at home with small groups as opposed to school-like setting where children would get distracted. Also, by playing at home, the student would be able to use the game repeatedly and really learn the nutrition message that is behind it, instead of a onetime lesson.

By: Cristina Luibil

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on April 14, 2010

