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# Comparing the Effectiveness of Health Curricula in Low Socioeconomic Contexts

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COMPARING THE EFFECTIVENESS OF HEALTH CURRICULA IN  
LOW SOCIOECONOMIC CONTEXTS

By

Abigail E. Allen

Honors Capstone Project

Submitted to the Faculty of

Olivet Nazarene University

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BACHELOR OF SCIENCE

in

Nursing

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Honors Council Chair (printed)	Signature	Date

_____	_____	_____
Honors Council Member (printed)	Signature	Date

To my loving family and to my fiancé, Garrett, with whom I will always serve in medical ministry

## ACKNOWLEDGEMENTS

First of all, I would like to thank my professor and project mentor, Professor Susan Day, for her guidance in this endeavor. Her experience and expertise in Community Health nursing greatly shaped the direction of this project. I would also like to thank Professor Tawni Buente for monitoring my progress and for attending my final presentations.

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## ABSTRACT

Kankakee County has a wide array of socioeconomic levels, including 14% of residents living in poverty. This percentage increases to 30.1% when considering those exclusively living in the city of Kankakee. In this same county, 28.2% of residents report themselves as being obese, and a community board called Partnership for a Healthy Community has deemed obesity to be one of the top three priority problems of the county. In light of these statistics regarding Kankakee County and current research suggesting trends of higher obesity rates among impoverished individuals in developed nations, this project sought to fulfill an educational deficit regarding healthy lifestyle behaviors among those living in poverty. The study also sought to determine the effectiveness of two different health curricula and if one curriculum was more effective among this audience than the other.

There is also additional research supporting early education of children regarding healthy behaviors; therefore, this study was implemented with the Headstart Preschool at Proegler School of the Kankakee School District #111 in Kankakee, Illinois, and its participants were parents of enrolled preschool children. The utilized curricula were “5-2-1-0 Let’s Go!” and “MyPlate”. The hypothesis was “The ‘5-2-1-0 Let’s Go!’ program is more effective than “MyPlate” in educating parents of low socioeconomic status about nutritional diet and exercise for their children.”

Participants were not told which curricula they would be receiving when they committed to attending a session. The “5-2-1-0 Let’s Go!” group had six participants (N=6), and the “MyPlate” group had five (N=5). Each group received the same pre-surveys and post-surveys. In addition, each group’s presentation was approximately 20 minutes long, and it was modeled on its corresponding curriculum. Surveys were analyzed to determine any significant



increases in health knowledge or perception of knowledge, as well as the participants' own opinions regarding the effectiveness of the presentation.

No statistically significant findings were gleaned from the survey analysis. The project goal of providing two educational sessions to parents of preschoolers was ultimately met. There are various presented suggestions for future research in this area.

Keywords: Obesity, poverty, socioeconomic, health curricula, MyPlate, 5-2-1-0 Let's Go!, community health, exercise, lifestyle

## INTRODUCTION

Kankakee County, Illinois, is home to a high obesity rate of 28.2%, as well as a poverty rate of 14%. The city of Kankakee is the home to a poverty rate of 30.1%, the highest poverty rate of any city in the county. There is a definite issue of obesity in Kankakee County, as evidenced by the statistics. In addition, current research supports the trend of increasing obesity rates among general and low socioeconomic populations. Lastly, there is evidence that it is beneficial to educate children at young ages about healthy lifestyle choices; an important component of their education is the education of their parents.

With these statistics and concepts as a basis, the goal of this project was to have two education sessions, one for each of two different groups of preschool-aged children's parents in a low socioeconomic area. Headstart Preschool in Proegler School of the Kankakee School District #111 in Kankakee, Illinois, was selected as the location for these health presentations. Headstart Preschool was an appropriate audience due to its income-based stipulations for enrollment. Each group received a different program curriculum, either 5-2-1-0 Let's Go! or MyPlate. The format of each presentation was modeled after its corresponding curriculum, since each curriculum put emphasis on different things.

Pre-surveys and post-surveys were administered and analyzed in order to support or disprove the over-arching hypothesis, The '5-2-1-0 Let's Go!' program is more effective than "MyPlate" in educating parents of low socioeconomic status about nutritional diet and exercise for their children. The survey results were then compiled and analyzed using SPSS to determine if there were any significant findings.

## LITERATURE REVIEW

**Poverty, Food Insecurity, and Obesity**

Contrary to the concept that obesity follows affluence, there is a growing trend of obesity among poverty (Levine, 2011, p. 2667). In the past, it was generally thought that in areas of poverty, obesity was less prevalent, and that greater income correlated with more food and a subsequent greater incidence of obesity (Haslam, 2007). Though this remains the common case in developing countries, this trend is becoming less common in developed countries, such as the United States. According to Hruschka (2012), "...in numerous wealthy countries the trend frequently reverses with poorer and less educated women more likely to be overweight than their wealthier compatriots" (p. 277). In essence, it is now become increasingly common to see more individuals from low socioeconomic backgrounds exhibit obesity.

The mechanism for this trend is unclear, and, surprisingly, there is conflicting research regarding the trend as a whole. However, the general consensus agrees that this trend is taking place and is increasing. There may be multiple possibilities regarding its cause. First of all, foods that have high energy density and are highly processed are often cheaper sources of calories than items that are less energy dense and are more nutritious (Hruschka, 2012). For example, foods such as ramen noodles and chips are much less costly than items like fresh fruits, vegetables, and dairy products, and they have a much longer shelf-life. According to Drewnowski (2009), "The energy cost of fresh produce was 10 times as much as that of vegetable oils and sugars [in a study done in Seattle]" (p. S37). In essence, those foods with lower calorie content cost significantly more overall than those with higher calorie content.

A second reason that many areas with a greater degree of poverty sometimes exhibit higher obesity rates is that they often lack grocery stores and health resources (Levine, 2011, p.

2667). Therefore, the residents may have decreased food security. A published conceptual framework regarding the relationship between poverty, obesity, and food insecurity stated, "Food insecurity...is identified in our framework as the context for the cycle of mutual influence that may promote excess weight gain and poor health outcomes" (Finney Rutten, Yaroch, Colon-Ramos, Johnson-Askew, & Story, 2010, p. 406). There is not a basis for a causal relationship between the factors; however, there is a fair degree of correlation. Ultimately, it is highly likely that communities with less health resources and food sources will exhibit higher rates of obesity.

Finney Rutten et al. (2010) also proposed the idea that individuals with low food security may have fluctuating eating behaviors, such as periods of food deprivation alternating with periods of overconsumption. This may be seen among families or individuals who utilize the Supplemental Nutrition Assistance Program (SNAP), formerly known as food stamps, and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Such individuals may have periods of hunger until their benefits are available, at which time, they may attempt to compensate by overeating or eating more energy-dense food items. Obesity among children, specifically, who fall under this low-income category has also been observed. The Wisconsin Department of Health Services (2010) reported that 10.3% of children served by a central Milwaukee WIC center were overweight (as cited by Kharofa, Meurer, & Nelson, 2014). A separate study complemented this research by finding that SNAP participants consumed fewer whole grains, more fruit juice, more potatoes, more red meat, and, in women, more sugar-sweetened beverages than income-eligible non-participants. Among both low-income participants and non-participants, they found that few adults consumed the recommended amounts of whole grains, fruit, vegetables, fish, nuts, seeds, and legumes (Leung et al., 2012).

Therefore, even supplemental programs intended to aid individuals and enhance nutrition can indirectly support poor eating habits.

### **The Need for Parental Education**

It is important to establish good nutritional habits early on in life. Bish, Regis, and Gottesman (2005) state, "By the time children enter kindergarten, their food preferences and the social context they associate with food intake are established" (p. 55). One way to encourage these positive nutritional habits in children is by parental education regarding such habits.

Though some cause for obesity may be linked to genetics (Early Growth Genetics Consortium, 2012), there is a very strong environmental and social basis for the condition as well. One of these environments is the home, in which the parents are often the mediators. Within the first few years of a child's life, their food intake is not closely related to the amount of food presented to them. However, as children get older, they do not maintain the ability to regulate their energy needs and are more driven by environmental cues. Therefore, parents of young children can benefit from learning about healthy portion sizes and how they can incorporate the portion sizes to create balanced diets (Bish, Regis, & Gottesman, 2005). By doing so, they will not only present their children with better meals, but may also influence the personal food and snack choices that the children make on their own and later in life.

There are many programs and tools that exist to educate the public about healthy eating. Two such programs, which will be the focus of this review and my future project, are the United States Department of Agriculture's "MyPlate" program and "5-2-1-0 Let's Go!" The latter curriculum is a program of the Kids Co-op at The Barbara Bush Children's Hospital in Maine.

### 5-2-1-0 Let's Go!

"5-2-1-0 Let's Go!" is fairly recent and innovative program that partners with various organizations in Maine. However, several resources are available for use in any state and in various capacities, including school, families, and more. Each number in the logo (Figure 1) stands for another part of the core curriculum. The number "5" recommends that individuals consume five fruits and vegetables a day. The number "2" recommends that recreational screen time be limited to two hours or less a day. The number "1" stands for the need to exercising one hour or more each day. Finally, the number "0" represents the choice to drink zero sugary beverages and to replace them with water and low-fat milk.

There are various website resources available that correspond to each concept represented in the program title, which can be utilized as teaching tools for the purpose of this project. The resources are free as long as they are not altered. This project utilized one to two resources for each teaching point in order to adequately explain them and give practical tips for their execution ("5-2-1-0 Let's Go!," 2012).

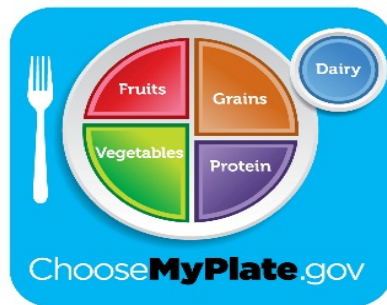


**Figure 1:** The "5-2-1-0 Let's Go!" logo ("5-2-1-0 Let's Go!, 2012).

### MyPlate

Created by the U.S. Department of Agriculture's Center for Nutrition Policy and Promotion, the "MyPlate" program has essentially replaced the formerly used food pyramid. In regard to nutrition, the "MyPlate" symbol can become a useful image to aid individuals in

planning meals. Some of the nutrition recommendations are to make half of your plate fruits and vegetables, make at least half of your grains whole grains, and choose low-fat or skim milk. The “MyPlate” symbol (Figure 2) suggests that approximately 20% of the plate should be fruits, 30% should be veggies, 20% should be protein, and 30% should be grains. In addition to nutrition, the [choosemyplate.com](http://choosemyplate.com) website provides tips regarding physical activity. One such suggestion is that young children should play actively several times a day.



**Figure 2:** “MyPlate” logo (“Choose My Plate,” 2011)

The audience that received “MyPlate” as its educational basis focused on its primary nutritional recommendations. Also, since “5-2-1-0 Let’s Go!” includes recommendations for exercise time and recreational screen time in its core curriculum, those elements were added to the “MyPlate” teaching so that its group would not be receiving less key elements. Though exercise and recreational screen time are not incorporated into the icon of “MyPlate,” the website does include recommendations for such. The recommendation for exercise in 2-5 year olds is that they play actively several times each day, which can be in short bursts and should include variety. Children and adolescents ages 6-17 should do 60 minutes of exercise every day. Finally, adults ages 18 and older should have 2 hours and 30 minutes of moderate intensity exercise each week spread out over at least three days. In regard to recreational screen time, “MyPlate” suggests that individuals limit it to two hours a day (“Choose My Plate,” 2011).

**Relevant Statistics from Kankakee County, Illinois**

According to the Kankakee County Health Status Assessment (2011), the population of Kankakee County in 2010 was 113,449. Approximately, 77.6% of the population is white, 15.1% is African-American, and 9.0% is Hispanic. In Kankakee City, specifically, the African-American population is approximately 40%, and the Hispanic population is approximately 20%. Statistics also indicate that the Hispanic population rose drastically in the ten years prior to 2010, both in Kankakee County and Kankakee City. About 93.1% of Kankakee County individuals speak English in the home, while 5.6% speak Spanish. It is likely that, based upon the larger Spanish proportion in Kankakee City, the percentage of Spanish speakers is also larger; however, this assumption is not backed by statistics.

The Kankakee County Health Status Assessment (2011) also has a great deal of information related to income and poverty. The median income for Kankakee County was \$44,784 in 2010. The median income for African-Americans was significantly lower than that of Hispanics and Caucasians. The overall poverty rate is 14%. The greatest proportions of individuals under the poverty line are found among the African-American and Hispanic populations, with rates of 27% and 26% respectively. When considering Bourbonnais Village and Kankakee City, the two largest townships in Kankakee County, the poverty rate in Kankakee City is more than double that of Bourbonnais (30.1% compared with 11.2%).

In regard to obesity, the focus of this project, there is a great need seen in Kankakee County. In 2008, 28.2% of residents reported themselves as being obese (Kankakee County Health Status Assessment, 2011). The Partnership for a Healthy Community board published another document, titled "Kankakee County Community Health Needs: Assessment and Community Health Plan" (2012), in response to the health status assessment, in which they



identified the top three priorities that need addressed in Kankakee County. One of these priorities is “reduce the risk factors for chronic disease--obesity” (p. 2). This committee recognizes the growing prevalence of obesity and the need to make the issue a priority. In addition, it was stated, “One of the main risk factors for obesity, related to chronic disease, is unhealthy eating habits. Direct contributing factors related to unhealthy eating stem from limited knowledge of nutrition, depression and stress, and limited resources to obtaining healthy foods” (Kankakee County Community Health Needs, 2012, p. 35). It is within the scope of this project to address the issue of limited knowledge of nutrition.

## METHODS

### **Participants**

The two educational sessions were presented to parents of preschool children attending HeadStart Preschool at Proegler School in Kankakee School District #111. Though several parents signed up in advance for the session, the number of individuals who showed up was limited. A total of six individuals (N=6) attended the session employing “5-2-1-0 Let’s Go!” as the curriculum and completed the pre- and post-surveys. A total of five individuals (N=5) attended the session using the “MyPlate” curriculum and completed the pre- and post-surveys.

### **Instrument**

At the beginning of each education session, the participants were given a pre-survey. The majority of the survey was designed based upon the model designed by Henry, Smith, and Ahmad (2013). This survey contained questions that were answered using a Likert scale ranging from (1) strongly disagree to (6) strongly agree. The questions contained content regarding health knowledge, perception of knowledge, attitudes, and health behaviors. There were also questions regarding the participant’s demographics, including gender, race, age range, and income level range. The pre-surveys were the same for both sample groups.

After the completion of each session, the participants were given a post-survey. This survey included the same questions regarding health knowledge and perception of knowledge. However, it excluded questions about attitudes, health behaviors, and demographics. There were six additional questions about their opinions and sentiments regarding the presentation itself. The post-surveys were the same for both sample groups.

**Procedure**

First of all, approval was obtained from the Institutional Review Board (IRB) of Olivet Nazarene University. Two educational sessions were developed surrounding the topics of healthy eating habits, exercise, and screen time. One session was based upon information and the model presented by “5-2-1-0 Let’s Go!” and the other was based upon the model of “MyPlate.” The information was compiled and organized into PowerPoint presentations.

A meeting was set with Mrs. Becky McBroom and Mrs. Kennilynn Hickory from HeadStart preschool to confirm the details of the presentations. An advertisement form was then drafted that included a tear-off slip to sign-up for attendance, and one was sent home with each student in the building. There were two dates (two consecutive evenings) provided as options, and the parents were not informed of which curriculum was being used on which evening. The parents were also informed that free childcare would be provided. The childcare workers were student volunteers from Olivet Nazarene University, overseen by Mrs. Kennilynn Hickory.

The presentations were held in the gymnasium of the Proegler School of Kankakee School District #111. This was a comfortable and convenient location for all participants. The information was presented by PowerPoint presentation to allow for optimal viewing by all attendees. The sessions were originally scheduled to be presented one per evening on two consecutive evenings. However, in spite of the pledged attendance, no parents showed up the first evening. Mrs. Kennilynn Hickory suggested that the schedule be adjusted to having two consecutive sessions on the same evening the following day. She made phone calls to the pledged parents reminding them to attend.

Though numerous attendance slips had been received, the number of individuals who showed up was small. Upon arrival to the presentation, participants were encouraged to partake in a wide selection of healthy snacks, including various fruits and vegetables, and bottled water. They were then provided with a pre-survey and an informed consent sheet. This form was modeled after the consent form drafted by the World Health Organization Research Ethics Committee (2015). A thorough explanation was provided to the parents regarding the survey, informed consent, and the purpose of each, and questions from the participants were answered. After allowing ample time to complete the forms, the presentation was presented and lasted about 20 minutes. There was then time allowed for questions and answers. Finally, the participants were provided with the post-survey. After completing the post-surveys, the participants were also given packets to take home with them. (If participants were also Spanish-speaking, the same materials were available in Spanish for them to take home.) The packets contained information from their respective session. As incentive for attendance, two participant names were drawn to be awarded \$25 Walmart gift cards.

Participants were asked to paper clip together their pre-survey, post-survey, and consent form. Upon analysis of the results, the consent forms were checked for the proper signatures before being separated from the surveys to allow for full confidentiality. Each survey was numbered in the corner to ensure accurate pairing of pre- and post-surveys. The results of the surveys were analyzed by using Statistical Package for the Social Sciences (SPSS). The results were then viewed in light of the previously stated hypothesis.

## RESULTS

The first presentation given was “5-2-1-0 Let’s Go!” The results of the pre-surveys and the post-surveys were analyzed using SPSS. There were six survey participants total. Results from the surveys indicated that five of the participants were female, and one survey did not specify a gender. In regard to race, three of the participants indicated they were “African-American/African,” two were “Caucasian,” and one was “Hispanic/Latino.” When questioned about age, one participant reported being age “20-29”, three were “30-39”, one reported age “40+”, and one participant did not answer. Lastly, participants were asked about their income level. Three participants reported a yearly income level of “\$0-\$10,000”, two participants reported “\$20,001-\$30,000”, and one selected “Prefer not to answer.”

Attention was given to the questions categorized as “attitudes” and “behaviors” to determine the participants’ current health opinions, worries, and participation in their children’s health (Table 1). These questions were only asked on the pre-survey, and were not re-asked on the post-survey. Descriptive statistics were generated, and the mean score was analyzed for each question. All four “attitude” questions returned low mean scores, exhibiting a low level of personal worry regarding various components of health. Attitude question #3, the statement “I worry about a lack of low-cost and safe places for my child to be active”, yielded the highest mean score of 2.50. It is also interesting to note that Attitude questions #3 and #4 had standard deviations of nearly 2, indicating a wider variety of responses.

When analyzing the answers for the questions categorized as “knowledge” and “perception of knowledge”, there were limited differences between the pre-survey and post-survey (Table 2). Once again, descriptive statistics were generated for each question, and the mean scores of each question on the pre-survey and post-survey were analyzed. Many

responses, such as those for Knowledge question #1, were identical in both surveys (Figure 3). Strangely, there were two questions, knowledge questions #2 and #3, that had post-survey mean scores that were slightly lower than the pre-survey mean scores. The biggest increase from pre-survey to post-survey mean score was for Knowledge question #7 “I think that [cutting down on screen time] matter[s] for my family’s good health”, modeling an increase from 4.83 to 5.33. This indicates that a total of three additional points were awarded in the post-surveys than the pre-surveys. All other answers modeled a lesser increase in post-survey scores.

**Descriptive Statistics - “5-2-1-0 Let’s Go!” Attitudes, Behaviors**

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Attitudes1	6	2.33	.422	1.033
Attitudes2	6	1.50	.342	.837
Attitudes3	6	2.50	.806	1.975
Attitudes4	6	2.33	.803	1.966
Behaviors1	6	4.83	.477	1.169
Behaviors2	6	5.33	.333	.816
Behaviors3	6	4.33	.333	.816
Behaviors4	6	4.00	.516	1.265
Behaviors5	6	4.00	.516	1.265
Behaviors6	6	4.67	.422	1.033
Behaviors7	6	4.83	.401	.983
Behaviors8	6	5.17	.307	.753
Behaviors9	6	2.50	.619	1.517
Behaviors10	6	4.33	.422	1.033
Behaviors11	6	5.67	.211	.516
Behaviors12	6	4.33	.667	1.633
Behaviors13	6	4.50	.563	1.378
Behaviors14	6	4.33	.558	1.366
Behaviors15	6	4.83	.477	1.169
Valid N (listwise)	6			

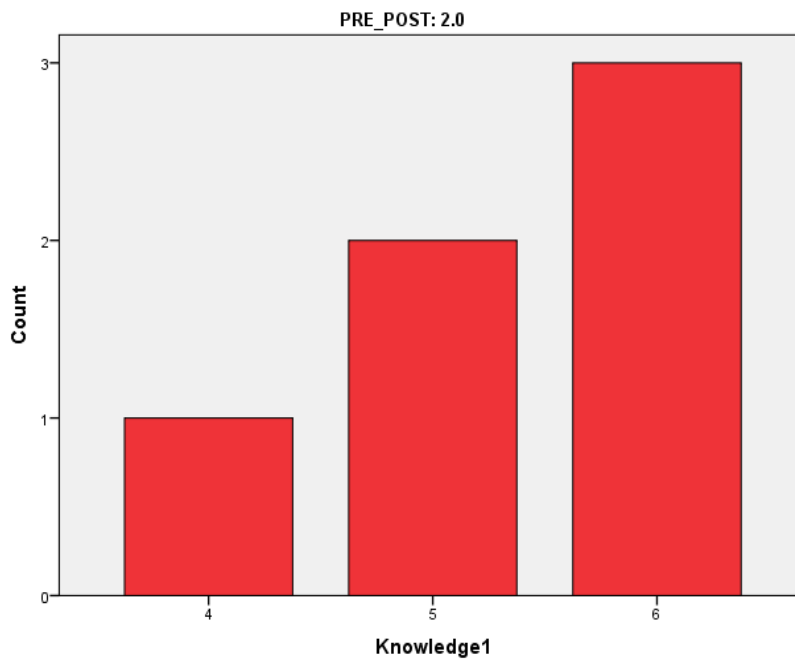
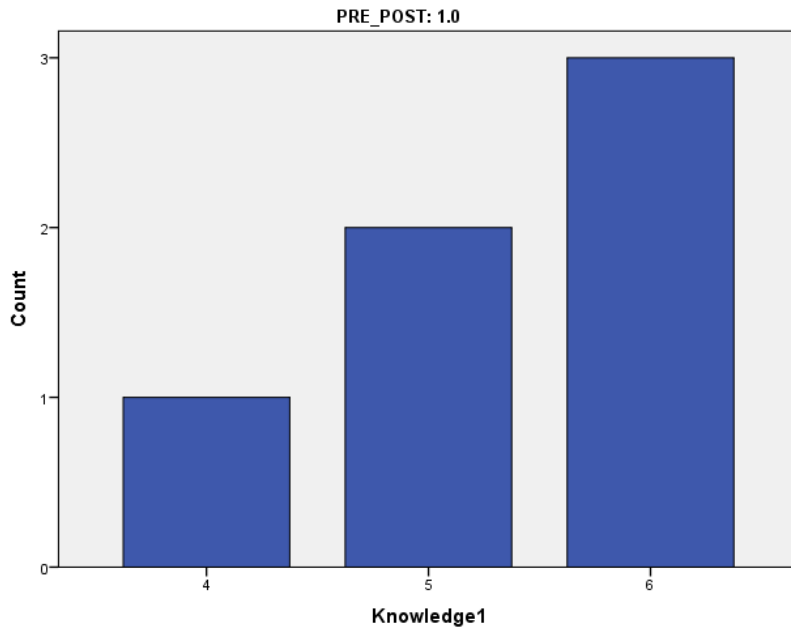
**Table 1. 5-2-1-0 Let’s Go! “Attitudes” and “Behaviors”**  
 This table exemplifies the number of responses (N) for each question, as well as the mean value of the responses.

**Table 2.** 5-2-1-0 Let's Go! "Knowledge" and "Perception of knowledge" This table exemplifies the number of responses (N) for each question, as well as the mean value of the responses. 1.0 represents pre-survey data; 2.0 represents post-survey data.

**Group Statistics – "5-2-1-0 Let's Go!" Pre- vs. Post-survey Knowledge, Perception**

	PRE_POST	N	Mean	Std. Deviation	Std. Error Mean
Knowledge1	1.0	6	5.33	.816	.333
	2.0	6	5.33	.816	.333
Knowledge2	1.0	6	5.17	.983	.401
	2.0	6	4.83	1.602	.654
Knowledge3	1.0	6	5.83	.408	.167
	2.0	6	5.67	.516	.211
Knowledge4	1.0	6	5.17	1.169	.477
	2.0	6	5.50	.837	.342
Knowledge5	1.0	6	5.50	.837	.342
	2.0	6	5.67	.516	.211
Knowledge6	1.0	6	5.33	.516	.211
	2.0	6	5.33	.516	.211
Knowledge7	1.0	6	4.83	.983	.401
	2.0	6	5.33	.816	.333
Perception1	1.0	6	4.83	.753	.307
	2.0	6	5.17	.753	.307
Perception2	1.0	6	5.17	.753	.307
	2.0	6	5.33	.516	.211
Perception3	1.0	6	4.83	.753	.307
	2.0	6	5.17	.983	.401

**Figure 3.** Bar chart 1.0 (blue) represents the pre-survey results from Knowledge question 1, and bar chart 2.0 (red) represents the post-survey results. As evidenced by the charts, the responses were identical. This was a common trend among survey results.





The second presentation given was “MyPlate” There were five survey responses total, and, once again, the results of the pre-surveys and the post-surveys were analyzed using SPSS. This session resulted a couple of surveys that were, unfortunately, missing some of their answers and were only partially completed. Results from the surveys indicated that two of the participants were female, one was male, and two surveys did not specify a gender. In regard to race, all five indicated that they were “Hispanic/Latino.” When questioned about age, four participants reported being age “30-39”, and one participant was “40+”. Regarding income level, one participant reported a yearly income level of “\$0-\$10,000”, two participants reported “\$10,001-\$20,000”, one reported “\$20,001-\$30,000”, and one participant did not answer.

As with the first presentation, attention was given to the questions categorized as “attitudes” and “behaviors” (Table 3). Descriptive statistics were run and analyzed. Questions #2-4 of the “attitude” question category returned low mean scores. Interestingly, question #1 “I worry about my child eating too much when I’m not around” yielded the highest mean score of 3.67; however, this score only accounted for three participants, while the other two were unanswered. It also exhibited a higher standard deviation of 2.309.

There were limited differences between the pre-survey and post-survey for “knowledge” and “perception of knowledge” questions (Table 4). A large majority of the questions yielded identical pre-survey and post-survey answers, creating comparison bar charts modeling that in Figure 3. All of these questions had low standard deviations. All three “perception of knowledge” questions had post-survey mean scores that were lower than the pre-survey mean scores. These questions were only completed on three of the pre-surveys, but were completed on all five of the post-surveys.

**Table 3.** MyPlate “Attitudes” and “Behaviors” This table exemplifies the number of responses (N) for each question, as well as the mean value of the responses.

Descriptive Statistics				
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
PARTICIPANT	10	3.000	.4714	1.4907
Attitudes1	3	3.67	1.333	2.309
Attitudes2	3	1.33	.333	.577
Attitudes3	3	1.67	.333	.577
Attitudes4	3	1.67	.333	.577
Behaviors1	3	3.67	1.202	2.082
Behaviors2	3	3.67	1.202	2.082
Behaviors3	3	4.33	.667	1.155
Behaviors4	4	3.50	1.041	2.082
Behaviors5	4	2.25	.479	.957
Behaviors6	4	4.00	.913	1.826
Behaviors7	4	3.75	.854	1.708
Behaviors8	4	5.25	.750	1.500
Behaviors9	3	3.33	1.453	2.517
Behaviors10	4	4.50	.866	1.732
Behaviors11	4	5.25	.750	1.500
Behaviors12	4	5.25	.750	1.500
Behaviors13	4	5.25	.750	1.500
Behaviors14	4	5.50	.500	1.000
Behaviors15	4	5.25	.750	1.500
Valid N (listwise)	3			

**Table 4.** MyPlate “Knowledge” and “Perception of knowledge” This table exemplifies the number of responses (N) for each question, as well as the mean value of the responses. 1.0 represents pre-survey data; 2.0 represents post-survey data.

**Group Statistics - “5-2-1-0 Let’s Go!” Pre- vs. Post-survey Knowledge, Perception**

	PRE_POST	N	Mean	Std. Deviation	Std. Error Mean
Knowledge1	1.0	5	5.60	.548	.245
	2.0	5	5.60	.548	.245
Knowledge2	1.0	5	5.60	.548	.245
	2.0	5	5.60	.548	.245
Knowledge3	1.0	5	5.60	.548	.245
	2.0	5	5.60	.548	.245
Knowledge4	1.0	5	5.80	.447	.200
	2.0	5	5.60	.548	.245
Knowledge5	1.0	5	5.60	.548	.245
	2.0	5	5.80	.447	.200
Knowledge6	1.0	5	5.60	.548	.245
	2.0	5	5.60	.548	.245
Knowledge7	1.0	5	5.60	.548	.245
	2.0	5	5.60	.548	.245
Perception1	1.0	3	6.00	.000	.000
	2.0	5	5.60	.548	.245
Perception2	1.0	3	6.00	.000	.000
	2.0	5	5.40	.548	.245
Perception3	1.0	3	6.00	.000	.000
	2.0	5	5.20	.447	.200

The ultimate purpose of data analysis was to prove or disprove the hypothesis “The ‘5-2-1-0 Let’s Go!’ program is more effective than “MyPlate” in educating parents of low socioeconomic status about nutritional diet and exercise for their children.” Therefore, statistics were run on the post-survey “Presentation” questions in order to determine participant comprehension, presentation helpfulness, and ability to implement the information (Table 5, 6). With both curricula, there was overwhelming agreement (mean score of 5.50 or greater) that the presentation was helpful and informative, that the information was understood, and that the participant could implement the information at home. At the same time, there was an overall disagreement (mean of 2.40 or below) that the presentation was overwhelming or confusing. There were minimal differences between each group’s mean scores for each question. These statistics were analyzed and compiled into a double bar chart for easy visual comparison and explanation.

**Table 5.** 5-2-1-0 Let’s Go! “Presentation” questions This table exemplifies the number of responses (N) for each question, as well as the mean value of the responses.

**Descriptive Statistics – “5-2-1-0 Let’s Go!” Presentation Opinion Results**

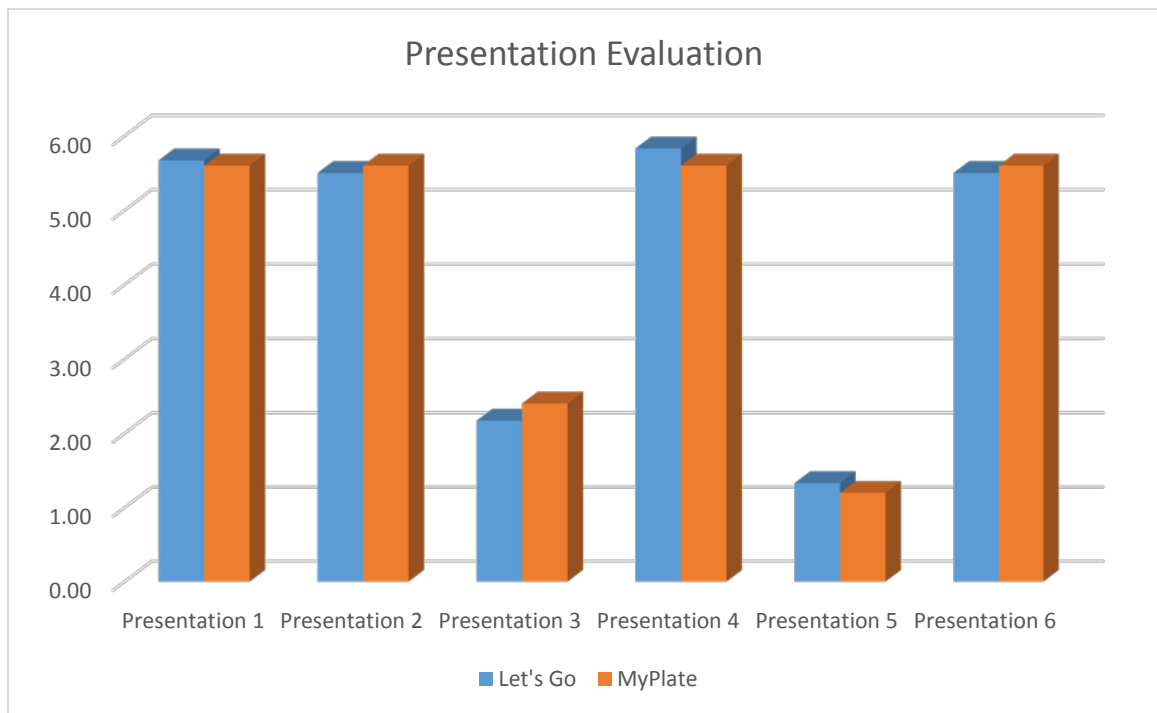
	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Presentation1	6	5.67	.211	.516
Presentation2	6	5.50	.224	.548
Presentation3	6	2.17	.601	1.472
Presentation4	6	5.83	.167	.408
Presentation5	6	1.33	.211	.516
Presentation6	6	5.50	.224	.548
Valid N (listwise)	6			

**Table 6.** MyPlate “Presentation” questions This table exemplifies the number of responses (N) for each question, as well as the mean value of the responses.

**Descriptive Statistics – “MyPlate” Presentation Opinion Results**

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
Presentation1	5	5.60	.245	.548
Presentation2	5	5.60	.245	.548
Presentation3	5	2.40	.678	1.517
Presentation4	5	5.60	.245	.548
Presentation5	5	1.20	.200	.447
Presentation6	5	5.60	.245	.548
Valid N (listwise)	5			

**Figure 4.** This combined bar chart provides a visual explanation of the similarity of each program’s post-survey “Presentation” results. There are no statistically significant differences.



## DISCUSSION

The purpose of this research project was to analyze the effectiveness of two different health education curricula: “MyPlate” and “5-2-1-0 Let’s Go!” The goal was to implement two educational sessions regarding healthy behaviors with audiences comprised of the parents of school-aged children in a low socioeconomic area. This goal was achieved. The project was completed in order to prove or disprove the hypothesis, The ‘5-2-1-0 Let’s Go!’ program is more effective than “MyPlate” in educating parents of low socioeconomic status about nutritional diet and exercise for their children.

No statistics were specified in the hypothesis as qualifiers for its validation. Therefore, the “Presentation” questions were analyzed as a basis for determining the effectiveness of each health education session. As evidenced in the presented results (Table 5, 6), the results of both sessions were nearly identical in mean and standard deviation. The double bar chart (Figure 4) exemplifies the lack of variation between the two sets of results. There were no significant differences. Therefore, the hypothesis was not supported by these data.

Throughout the entirety of the gathered data, there were no significant findings. However, some interesting observations were made. In the pre-surveys of both the 5-2-1-0 Let’s Go! session and the MyPlate session, participants reported a high level of health knowledge (“Knowledge”) and capability of implementing the health knowledge (“Perception of Knowledge”). This requires one to question, Do the participants have this level of knowledge and ability to implement it, or do they have a false sense of their knowledge and abilities? One must also consider the idea that the participants’ background, culture, demographics, and/or personality may influence how they answer, perhaps causing them to answer how they perceive the presenter expects and/or desires them to answer regardless of how closely their answers

reflect their actual knowledge and abilities. It is interesting to note that in the MyPlate pre-survey results, the mean score of all three “Perception” questions was 6.00 (M=6.00, SD=0.00). This means that all participants reported before the educational session took place that they “strongly agree” that they “can prepare nutritious meals and snacks for [their] family”, “can encourage [their] children to be physically active each day”, and “can manage how much ‘screen time’ [their] children participate in each day”. Though only three of the five total participants answered the question, it is interesting to note that all of the participants were of “Hispanic/Latino” ethnicity. This raises interesting questions about ethnicity’s influence on the answers. Overall, though this data has no significant findings, it does raise a few interesting trends and perhaps presents promising leads for future research.

### **Strengths and Limitations**

Strengths of this project include that the presentations were based off of two renowned and well-established curricula. In addition, the presenter was well-prepared and able to explain the content competently. The presentation was also given in a location that was well-known and comfortable to the audience. Lastly, the surveys were based off of a published evidence-based article about relevant content.

There are various suggestions for future research, including a significantly larger sample size. These sample sizes were far too small to present any significant data to support or disprove the hypothesis. A strategy needs to be developed and implemented to attract and retain more participants in future educational sessions.

In addition, there seemed to be a language barrier for a few of the participants of Hispanic/Latino ethnicity. Since there was no way to judge English competency, there was neither a way to determine the participants’ health literacy nor if the participants had full

comprehension of the material and surveys. It is possible that a couple of the participants were influenced by the answers of the participants seated next to them. This could obviously skew the credibility of the data. The study would benefit from a method of determining English competency.

Further, the study may benefit from adjustments made to the survey. The questions categorized as “knowledge” in these surveys do not question the participants regarding actual health facts; rather, they request that the individuals specify to what degree they agree or disagree that various actions or entities have an effect on health. This may, perhaps, be a much too ambiguous method of testing one’s health knowledge. For example, whether due to previous education, ads in the media, or opinions of those around them, someone may truly “agree” that food portion sizes matter for his or her family’s health; however, he or she may not understand *why* or *how* portion sizes affect health. The latter information would provide much greater insight to people’s knowledge and its probable effect on their health.

Lastly, this study would benefit from being performed in various other locations among populations that are also of low socioeconomic status. Various geographic areas may be affected by poverty differently and may have more or less supermarkets available in the area. In addition, there may or may not be educational groups, programs, and health services in place that influence the habits and knowledge of the individuals.

### **Conclusion**

This research presented no significant findings. However, it does provide a foundation for future research that may show more influential findings if some changes are made to its implementation, such as larger sample size. The findings also presented some interesting ideas regarding race and culture and their effect on one’s perception of his or her own knowledge and



abilities, as well as their overall effect on how one processes and answers survey questions in general.

Ultimately, though the hypothesis of the study was neither proven nor disproven, the goal of the study was achieved. Parents of school-aged children in a low socioeconomic area received education about ways they can implement healthy eating and exercise habits in their families. What they do with that information and how they implement it is ultimately out of the control of the presentation and study; however, such proactive health promotion is an imperative component of effective health care.

## REFLECTION

It is easy for people to envision impoverished individuals as thin, bony, and frail. However, that is often not the case, especially in developed nations such as the United States of America. Often, it is quite the opposite. Though malnourished just the same, many of the individuals consume energy dense, processed foods with limited intake of fresh fruits and vegetables. This requires a very different approach to health promotion and maintenance.

Americans cannot merely assume that government programs such as SNAP provide individuals with adequate means to obtain proper foods and, therefore, nutrition. Impoverished individuals often need to consider the shelf life of foods, the food yield versus the food costs, and more. As with individuals of greater means, people living in poverty need proper education regarding food choices and exercise, as well as their impact on health.

If people, especially health care professionals, turn a blind eye to the measures that can be taken in the community to promote healthier lifestyles, they will continue to be faced with the increasing cases of obesity, hypertension, diabetes mellitus type 2, coronary artery disease, and many more comorbidities. Is not health care, without proactive patient education, merely sick care?

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