Childhood Nutrition and Lifestyle in Owensboro, Kentucky

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Dr. Leslie Scott, Advisor
Final DNP Project Report
Childhood Nutrition and Lifestyle in Owensboro, Kentucky
Mckenzie Jo Mattingly, BSN, RN

University of Kentucky
College of Nursing
December 18, 2015

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Dedication

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Capstone Introduction and Overview

According to the CDC, childhood obesity is now one of the leading health problems in the United States. Thirty-five percent of adults in the United States are obese. Kentucky is the 12th most obese state for adults and the 7th most obese state for children. *The State of Obesity: Better Policies for a Healthier America*, states that Kentucky’s adult obesity rate is currently 31.6 percent. This is up from 21.7 percent in 2000 and 12.7 percent in 1990. Primary care providers must work to help prevent these numbers from continuing to climb. Since our population of children who are overweight or obese is growing, healthcare providers are starting to see co-morbidities like diabetes, hypertension, and psychological issues that used to only be seen in the adult population. To improve the cases and co-morbidities of obesity in the pediatric population, specifically in Owensboro, Kentucky, a survey was developed that was given out to parents at a local pediatric office. This survey was created to collect data that would help providers see patterns in patient populations that may help them identify at risk children and families.
Manuscript 1

School Nutrition and the Impact on Childhood Obesity

An Integrative Review

Mckenzie Mattingly, BSN, RN
Abstract

Purpose: Childhood obesity is now the most common nutritional disorder seen among young children, making it a serious public health concern. Although children may consume fast food, sodas, and other nutrient-poor foods while with their families, as much as two of the meals they consume daily come from their school. In this integrative review, several articles were reviewed to evaluate the role schools can have on childhood obesity; and if the school system can play a role in fostering better health behaviors in their students.

Methods: An integrative literature search of studies published between 2008-2013. A search was conducted using the Cumulative Index to Nursing and Allied Health Literature (CINAHL), Elton Bryson Stephens Company (EBSCO) and PubMed search engines. Only studies that included students ages K-12 were looked at. Private schools and homeschooled students were not included. Keywords used to search included: childhood obesity, obesity, pediatric health, pediatric nutrition, health promotion, food assessment, pediatric student population, nutrition, school nutrition, scholastic nutrition programs, and education.

Results: Schools do play a major role in either preventing or aiding in the development of childhood obesity. Federally funded school lunch programs may play the greatest role in prevention in the future.

Conclusions and Implications: School lunch programs along with competitive foods in schools need to be carefully reviewed to make sure that students are having prime
opportunities to gain access to healthier food choices. More research needs to be conducted to show what role physical activities, food presentation, and cost play in the development of childhood obesity.

**Focus of the Problem**

In 2011, the Surgeon General identified obesity in children ages 5-18 as one of the nation’s most problematic health concerns. Many factors can play a role in preventing childhood obesity. Parental influence, teacher example, activity level, caloric intake, fast food consumption, and food choice are just a few (Steele, Wu, Jensen, Pankey, Davis, & Aylward, 2011). One of the key locations where children can consume high calorie foods is at school (Krukowski, Perez, Bursac, Goodell, Raczynski, West, & Phillips, 2011).

In 2008, the National School Lunch Program (NSLP) and School Breakfast Program (SBP) served approximately 31 million lunches and 10 million breakfasts per day. This accounted for 35% of the daily caloric intake for a student who participated in the NSLP, and 16% for those who participated in the SBP. If students participated in both breakfast and lunch programs, this accounted for 51% or more then half of their daily caloric intake. With the increasing rates of childhood obesity, and the amount of calories provided in students’ diet coming from the school, nutrition in the scholastic world needs to be evaluated and improved (Krukowski, et al., 2011).

Any child in a participating school may purchase a meal through the federally funded school lunch programs. Children from homes with incomes at or below 130% income are considered to be at poverty level and are eligible to receive free lunches and
breakfasts. Students between 1305 and 185% income can receive reduced cost lunches, and those at 185% incomes or higher must pay full price for their meals (Congressional Digest, 2010).

**Purpose of the Review**

The purpose of this integrative review is to review current research regarding school nutrition, and evaluate its’ meanings and roles in the future improvement of school nutrition. This analysis includes: a comprehensive summary of relative literature, search criteria, gaps in the literature, common themes, implications, and ideas for future research.

**Systematic Approach**

To determine the role schools play regarding food offerings, physical activity, and other strategies to address obesity rates among children in grades K-12, a cross-sectional, systematic approach was used. This included a review process of the literature collected on the current state of school lunch offerings with inclusion and exclusion criteria used to narrow down the literature on topic. The population criteria included students who were in grades K-12 and attended a public tax funded school. The studies used were written between or during the years 2008-2013 to keep the results current. CINAHL, EBSCO and PubMed were the sites used for searching the literature. Search keywords included: childhood obesity, obesity, pediatric health, pediatric nutrition, health promotion, food assessment, pediatric student population, nutrition, school nutrition, scholastic nutrition programs, and education. Most
of the studies were either randomized control trials, cross-sectional, or cohort studies. The exclusion criteria included students who were college or pre-school aged, as well as home and private school students. Also excluded in this integrative review were studies that were conducted before 2008.

**Comprehensive Summary of Relevant Literature**

The first literature study reviewed, discussed the development of an assessment tool designed to measure food offerings in Arkansas schools. The grant allowed funding to create a School Cafeteria Nutrition Assessment tool that evaluated what was offered for lunch in multiple school cafeterias across the state of Arkansas. It included the ability to measure healthy foods like fruits, vegetables, and whole grains. This numerical assessment tool was created to provide a unified way to measure the food types due to the variability of menus and food layout of the Arkansas School System. This study looked at cafeterias across Arkansas, providing food to children age K-12. This program was able to measure the food offerings and choices at different schools rapidly. Results of this assessment tool and this comparative study, have the possibility to lead to the evaluation of cafeteria offerings everywhere, and impact policy changes regarding school offerings. This article demonstrates that schools can actively play a part in preventing childhood obesity, through monitoring and assessing food offerings (Krukowski, 2011).

The second article, looked at 12 randomly selected elementary schools from the Los Angeles Unified School District. A school based nutrition program was developed and offered to the students. In this program, numerous surveys were conducted assessing
student fruit and vegetable consumption and attitude towards fruit and vegetable consumption. Students were also assessed for how they perceived parent, peer, and teachers’ attitudes, (Prelip, Slusser, Thai, Kinsler, and Erausquin, 2011).

There were 9 intervention schools, and 3 control schools studied. Data was collected at the beginning of the school year, and then again at the end, and linear mixed models and cross-sectional data were used to assess the impact of the intervention, being an education program about fruits and vegetables, and the opportunity to be exposed to them. The results showed that the education program resulted in a significant change in teacher influence on students’ attitudes towards fruits and vegetables. This intervention demonstrated that if students have the opportunity to try fruits, vegetables, and healthier foods at school, they may be more likely too choose them if they have the opportunity (Prelip, et al., 2011).

The third article, evaluated school lunch programs in Connecticut and their response to legislation for NSLP. The legislation offered incentives for schools to voluntarily eliminate non-healthy foods from their cafeterias. Foods offered outside of the NSLP called competitive foods, have consistently been linked to unhealthy diets and in some cases, childhood obesity. As a result, policy changes have been implemented in some areas, attempting to eliminate sugary, non-nutritious foods, and soft drinks from the competitive food market and vending machines in schools. Despite some state and local efforts, policies have failed nationally thus far to improve the negative impact of these competitive foods (Long, Luedicke, Dorsey, & Fiore, 2013).
In response to the meals offered in school lunch programs and competitive food offerings in schools, Congress passed the Healthy, Hunger-Free Kids Act of 2010. This Act required the US Department of Agriculture (USDA) to update the standards for the NSLP and School Breakfast Program, while providing performance-based reimbursement rates for lunches. The bill also finally allowed the USDA to have some regulation over the competitive foods being served in school cafeterias. With this new regulation, schools, educators, and congressmen worried that by making the NSLP more healthy, students would begin to drop out of the NSLP program and pursue more of the competitive foods, (Long, et al., 2013).

This study explored the impact of putting higher standards on competitive food, in order to encourage student participation in the school lunch programs. After studying 904 schools within the 154 Connecticut school districts from 2004-2005, and then comparing them to the 2009-2010 school year, findings showed that indeed the state statute, limiting competitive food offerings, was associated with increased student lunch program participation. This demonstrates that legislation does play a part in the influence on how children choose to eat. By not offering as many choices, and by getting children to be a part of a unified nutrition program, the state can possibly influence the number of pediatric obesity cases (Long, et al., 2013).

The fourth study evaluated discussion about the national average of fruit and vegetable consumption among school-age children. Currently, national data indicates that despite efforts to improve fruit and vegetable consumption, it is still too low among low-
income children, and participants in school lunch programs. Recommendations were made suggesting schools have the opportunity to improve fruit and vegetable consumption, by adding more fruits and vegetables to their school breakfast and lunch programs (Robinson-O’Brien, Burgess-Champoux, Haines, Hannon, & Neumark-Sztainer, 2010).

In the study, 103 fourth to sixth grade boys and girls from low-income urban areas assessed as to whether or not they participated in the school lunch programs. The amount of fruit and vegetables each of the 103 students consumed over a 24 hour period was collected. Results showed that students who participated in the school lunch program consumed significantly fewer fruits and vegetables daily (3.6 servings) compared with those who did not participate in the school lunch programs (>5.0 servings). This data, demonstrates that school lunch programs are not providing the fruits and vegetables needed, thus providing less fruits and vegetables for their low-income participants then students who can afford not to participate in the program (Robinson-O’Brien, et al., 2010).

The last study considered in this integrative review, explored barriers to students who were eligible to participate in the NSLP, and what could assist with participation. In this trial, three schools’ (two high schools and one middle school), programs were adapted to provide more diversity in the NSLP offerings, and less a la carte options outside of the program. Other changes included food handling and storage, training of food service personnel, and engagement of students in taste testing surveys. To gage
results of this program, average daily participation was measured. Results showed that when these changes were implemented more students did participate in the lunch programs (Bahatia, Jones, and Reicker, 2011).

**Like Findings and Gaps in the Literature**

From these five articles, many common themes can be seen. Participation in school lunch programs is a huge part of students’ nutritional intake across the nation. Various strategies have been implemented to improve student participation in school lunch programs. When schools have the ability to adjust what is offered in the breakfast and lunch programs and decide to make the options healthier for students, they are actively improving the health of those children and adolescents that attend their schools. Also, by lowering the options competitive food vendors are authorized to sell, and keeping the pricing the same, students are more likely to choose to participate in a healthier, cheaper school lunch program.

Gaps found in the literature include food presentation. If the competitive food is displayed on a table and looks appetizing, it may be more of a temptation for students, versus a brown bag lunch provided by the school that is typically healthier. Another gap found was parental support of school lunches. Knowing parents attitudes toward school lunches may impact their support of their child’s participation in such a program.

**Strategy to Solve the Problem**

The problem of childhood obesity is not easily solved, but from this integrative review, it is important to understand that schools play a role and have an impact on what
children eat. Schools can adapt calorie and fat intake for breakfast and lunch to meet the needs of their students. More research needs to be conducted exploring parental attitudes towards food offerings, access to healthy food options, and participation in the school lunch programs, along with the layout and presentation of food buffet lines.
Manuscript 2

Policy Analysis/Strategy Paper on Bill 2342

Mckenzie Mattingly BSN, RN
Statement of the Problem/Issue

In the United States, the rate of obesity in children is higher now than it has ever been. Research has been conducted to identify current risk factors associated with the development of obesity in the pediatric population. According to the World Health Organization, “obesity has more than doubled since 1980 and approximately 65% of the world’s population live in countries where overweight and obesity kills more people than underweight.” Traditionally, obesity has been an adult disease, however within the last 10 years it has become increasingly more prevalent in the pediatric population. In 1995, there were 18 million children worldwide under the age of 5 classified as overweight, in comparison to the year 2010 when rates were nearly 43 million (Rabbitt & Coyne, 2012).

One major factor playing a role in childhood obesity that is often not considered is child exposure to food advertisement. Numerous food advertisement exposures exist on a daily basis for children and teens in the U.S. Exposures occur in children’s home environment as well as while the child is at school. Unfortunately, while at school, many children are exposed to advertisements and buying options from vending machines filled with snacks and soft drinks that are often of low nutritional value and high in sugar.

While hurrying to get to school in the mornings, this same teenager runs through the kitchen and grabs one of the easiest breakfast items to consume on the go (as advertised on tv), a pop-tart. While at school, this same teen has the option of buying food from a vending machine filled with snacks and soft drinks high in sugar, that are often portrayed on television and in movies being consumed by actors and actresses. If an adolescent has
the option to go off campus for lunch, the nearest restaurants to school are often those who serve fast food options. These are the places that offer the “best bang for your buck” when it comes to portion size and food quantity in relation to cost. Additional nutrient-poor food offerings and propaganda exist at school through fundraisers with candy campaigns. These numerous exposures to advertisements and food offerings may lead to excessive calorie intake (Willette, 2007).

Recent books such as *Fast Food Nation* have discussed the dangers of fast foods and how they target children in the USA today. Many potential risk factors are concurrent with childhood obesity. Low-income families, and children who have parents who are less educated are more likely to be at risk for childhood obesity. African American and Hispanic American children are also at a greater risk for becoming obese. Other risk factors include: genetics, diet, inactivity, psychological factors, and family. There can be hormonal and genetic causes of obesity, but excessive weight that causes children to fall into the category of “obese,” is essentially due to eating too many calories and lack of exercise or low energy expenditure (Willette, 2007).

Watching television and playing video games also put children as risk for being obese. Studies have shown that children under eight years of age spend up to 2.5 hours watching television or playing video games daily. Children who are older than eight years of age spend 4.5 hours doing the same. Additional studies have found that children who spend more than four hours watching television daily, are more likely to be overweight
than those who spend less than two hours a day in front of the television (Willette, 2007).

Today many food-related products are advertised on television during the hours that are prime times for children to be watching their favorite shows. In 2002, it was estimated that annual sales of food and beverages to consumers who were adolescents and younger, reached $27 billion. Collectively, food and beverage advertisers spend $10 billion and $20 billion annually targeting children and youth. More than $1 billion of that is spent on direct media advertising to children (Willette, 2007). Senator Richard Blumenthal from Connecticut has recognized this problem, and has proposed Bill S. 2342 to try and curb this issue.

**Background and Significance of the Issue**

Bill S. 2342 states, “childhood obesity has more than doubled in children and tripled in adolescents in the last 30 years. Currently more then 1/3 of children and adolescents are overweight or obese.” According to the Centers of Disease Control in 2013, one in every eight preschool child is obese (CDC.gov, 2013). This is only one age group that is seeing a rise in obesity rates (CDC.gov, 2013). Sixteen percent of US children ages 6 to 19 years of age are overweight and 19 percent are obese (Innovations.ahrq.gov, 2013).

These numbers are significant because children who are overweight have many more physical, mental, and emotional health disparities then their non-overweight peers (Steele, Wu, Jensen, Pankey, Davis & Aylward, 2011). These effects can be seen in adulthood, and eventually affect quality of life and lifespan (Steele et al., 2011). This Bill
recognizes that one of the possible preventable factors affecting childhood obesity is the advertisement of unhealthy foods during children’s television viewing times (Udell & Mehta, 2008). This has been viewed as a source of the problem of childhood obesity not only in the U.S., but in other countries as well (Udell & Mehta, 2008). The majority of negative, food advertisement directed at children during viewing hours, have been found to be for high-energy, low-nutrient foods that undermine what parents, health instructors, and health care providers try to teach children about eating healthy (Udell & Mehta, 2008). This increase in media targeted at children also includes specialized cable networks, video games, and computer activities (Willette, 2007). Bill S. 2342 states, “since most health habits are developed early in life, it is scary to think that budgets for food marketing directed at children have spiked into billions of dollars, and aren’t usually aimed toward helping children eat healthy.”

The effects of advertising are difficult to examine directly. Trials in life-like situations are nearly impossible and observational data is hard to believe without taking into account concurrent factors. Since these studies are often difficult to perform, one group of researchers created a mathematical simulation model for the relationship between exposure to food advertising on TV and the prevalence of childhood obesity. The article then discussed the potential effects of a total ban on TV food advertising to 6-12 year old children in the United States (Veerman, Van Beck, & Mackenback, 2009). This model compared two groups of children. One group remained unchanged. An intervention group underwent changes in exposure to food advertising and translated into
corresponding changes in consumption, body mass, and the prevalence of being overweight. A Delphi model was used, and researchers found that by reducing exposure to TV food advertising targeted at U.S. children from 80.5 min/week to zero, total consumption of unhealthy foods was decreased by 4.5%. If every 10% reduction in consumption corresponds to a 4.5% lower body weight, children would weight about 2.1% less than they do if they were never exposed to food marketing. This translates to a reduction in mean BMI of 0.38 m\(^2\), and a decrease in the prevalence of obesity by 2.7% for boys and 2.4% for girls. Overall, this Delphi study showed that one in three obese children would not be obese in the absence of food advertising on TV (Veerman, et al., 2009).

**Conceptual Framework or Theory Used to Analyze the Situation**

Kingdon’s Streams Theory can be used to analyze the effects of food advertisement on child health. The three key policy processes that Kingdon calls “streams” are: problems, policies, and politics. Kingdon says, “problems are recognized and defined according to processes that are different from the ways policies are developed or political events unfold. Policy proposals are developed according to their own incentives and selection criteria, whether or not they are solutions to problems or responsive to political considerations. Political events flow along on their own schedule and according to their own rules, whether or not they are related to problems or proposals,” (Kingdon, 2011).

There are times when these three processes can become intertwined. For
example, when a new policy initiative is created, advocates take advantage of politics to spread awareness and get their policy “out there.” The policy may also be described as the solution to a problem. In this way the three “streams” meet and converge into one (Kingdon, 2011).

The problem stream in this particular situation is that childhood obesity has nearly doubled in children and tripled in adolescents within the last 30 years (Kingdon, 2011). One reason for this particular problem is media advertisement targeting children. Again, the Delphi study discussed above, found that one in three children would not be obese, had they not been targeted by the media in their unhealthy food advertisements (Veerman, et al., 2009). Another reason this issue is of concern is due to cost. Billions of dollars in obesity-related health care costs are paid by the government annually, and those numbers continue to rise. Although many factors play a part in this epidemic, by reducing the number of advertisements for unhealthy food-products in child-targeted media, improvements may begin to be seen (Hingle & Kunkel, 2012).

The second stream is policy (Kingdon, 2011). A policy needs to be put in place that deters the media from creating advertisements for unhealthy foods that target children. This would be beneficial because given the amount of time children spend watching television, they are inevitably bombarded with many commercials for food products. Televised food advertising is mostly made up of high-density, low-nutrient products that the public labels as “junk food.” Exposure to food
products on the Internet, billboards, and other forms of communication are also possibilities. By creating a policy that reduces this type of media, many children may have a reduced risk for becoming obese (Hingle, and Kunkel, 2012). The creation of Bill S. 2342 entitled, “Stop Subsidizing Childhood Obesity Act,” targets advertising and marketing at children and denies tax deduction for any business expenses for these advertisements, (GovTrack.us, 2014).

The third stream is politics (Kindon, 2011). Democratic Senator Richard Blumenthal from Connecticut is the representative who proposed Bill S. 2342. He is the bill’s sponsor. Senator Blumenthal introduced this public bill in the Senate on May 15, 2014 (GovTrack.us, 2014). The bill was read twice, and since has been referred to the Committee on Finance (Congress.gov, 2014). So that Bill 2342 does not die in Committee, it is important that support for this bill be made known. Expert input will be sought, and “mark up” sessions will be held to make any changes or updates deemed important. If it is necessary, the bill will be sent to subcommittee for further analysis through hearings and research. Whenever the Committee finally gets satisfied with the content of the Bill, if they deem it important, they will send it back to the House for debate (Congress.gov, 2014).

Analysis of the Issue

This bill was created to amend the Internal Revenue Code of 1986, which originally had no restrictions on businesses to count advertisements in the media as tax write offs (Congress.gov, 2014). The new proposed bill states that it will amend the
Internal Revenue Code to deny a tax deduction for any business expenses that meet either of the following criteria. Advertising or marketing primarily directed at children (defined as individuals under the age of 14) to promote the consumption of food, with poor nutritional quality or promotion of a brand primarily associated with food of poor nutritional quality that is primarily directed at children; For related expenses, including travel, goods or services constituting entertainment, amusement, or recreation, gifts, or other promotion expenses.” The bill also, “directs the Secretary of the Treasury to enter into a contract with the Institute of Medicine to develop procedures to evaluate and identify food with poor nutritional quality and brands that are primarily associated with such foods. It will also authorize additional funding to carry out the Fresh Fruit and Vegetable Program under the Richard B. Russell National School Lunch Act,” (Congress.gov, 2014).

The Institute of Medicine after reviewing scientific literature in 2006, found that there was strong evidence that television advertising affects the food and beverage requests and consumption in children ages two to eleven years of age. It recommended the food industry develop and strictly adhere to advertising guidelines aimed at minimizing the risk advertising contributes to childhood obesity. The Institute of Medicine’s report drew on a 2004 synthesis of relevant studies by the Henry J. Kaiser Family Foundation and the 2004 report by the American Psychological Association. The American Psychological Association voiced concern about children’s eating habits
because researchers found that these habits are formed in childhood and tend to persist throughout the person’s life cycle. The American Psychological Association also noted that many experts “have linked the dramatic increase in the prevalence of childhood obesity to the emergence of the advertising of unhealthy foods to children,” (Mello, 2010).

The American Psychological Association also reviewed literature from their field and found that children under the age of four or five years cannot distinguish advertisements from television programs, and that children under eight years of age lack the ability to understand the bias and persuasive intent used in advertising. These findings were echoed in a policy statement released by the American Academy of Pediatrics in 2006. In this statement, several studies were highlighted that linked young children’s television advertisement exposure to their requests to parents for junk food. This study characterized children as “psychologically defenseless against advertising because of their limited cognitive development,” (Mello, 2010).

The strongest evidence found to support childhood obesity and advertisements was found in the Institute of Medicine’s subsequent report on food marketing in 2006. A correlation was found between television advertising influences on food preferences and purchase requests of children two to eleven years of age as well as their short-term food consumption. The evidence for long-term effects on dietary intake is stronger in young children aged two to five years of age but weaker for children ages six to eleven years of age. It was also found that after children watch food advertisements, they are more likely
to request food of poor nutritional value, and often parents give in to their requests. There is strong evidence that television viewing is associated with obesity in children and adolescents. This association persists even after taking into account lowered physical activity (Mello, 2010).

The Institute of Medicine, the American Psychological Association, and the American Academy of Pediatrics are all expert interest groups that support the idea behind this bill. By these expert reports alone, there is a strong evidentiary basis that curtailing food marketing towards children could reduce childhood obesity. Also, this data argues that in the case of young children, these types of advertisements targeting children are unfair because of children’s lack of cognitive skills. The Institute of Medicine states that children are targeted for marketing because they are a “primary target,” meaning that they can spend money by themselves. They are an “influence market” because they influence their parents’ decisions on what foods are purchased, and they are a “future market,” because they represent future adult customers. All of these reasons make children primary targets for the influence of media advertisements (Mello, 2010).

In 2006 the Council of Better Business Bureaus (CBBB) and the National Advertising Review Council launched the Children’s Food and Beverage Advertising Initiative. This initiative committed a number of major food and beverage companies to pledge not to advertise to children under the age of twelve at all, and another eleven adopted minimal nutrition standards for the types of foods that they would advertise to
children under twelve years of age. In addition, all of these companies pledged to limit products that were depicted in interactive games to children under twelve years of age. These pledging companies which included Cadbury Adams, Hershey, Coca-Cola, and Mars accounted for more than two-thirds of television food ads that targeted children in 2004. This is a good start, but even as these companies have made commitments in the past, not all major companies have pledged to adhere to these standards.

With changes in each presidential administration, there are new opportunities for change and support of new priorities on the agenda. Michelle Obama was quoted to say at a press conference, "when the average child is now spending nearly eight hours a day in front of some kind of screen, many of their opinions and preferences are being shaped by the marketing campaigns you all create. And that's where the problem comes in. ... And I'm here today with one simple request—and that is to do even more and move even faster to market responsibly to our kids," (letsmove.org, 2014). Michelle Obama’s “Let’s Move” program, created to help solve the epidemic of childhood obesity, prevention of childhood obesity has been at the forefront of media attention then ever before (letsmove.org, 2014). With the recent attention on Michelle Obama’s program “Let’s Move,” and groups like the Institute of Medicine, the American Psychological Association, the Federal Trade Commission, and the American Academy of Pediatrics, a lot of support could be brought to the attention of the Committee of Finance members in honor of this bill.
Based on Scientific Evidence and Intended Outcomes/Policy Options

The Children’s Advertising Unit already listed practices by media that should be avoided in the past. These practices included reducing sales pressure that created a sense of urgency (encouraging children to pressure parents into buying the product), implying that the product will gain peer acceptance, popularity, intelligence, or any other positive qualities that might be presented in the advertisement. Specifically in regards to food advertising, the guidelines specify that portions shown in media advertisement should not exceed an unreasonable amount, and snack foods should not be portrayed as a substitute for a meal (Mello, 2010).

Regulating child-oriented food advertisements as a class, rather than on an individual basis, offers the advantage of being fair across the board. With this in mind, the idea of a public bill that affects all media outlets and all media aimed at the sales of food to children, can be seen as a fair solution. In relation to consumer injury, by grouping all media sources in one class of responsibility, and putting up equal roadblocks when it comes to advertisements targeting children, media sources will have to weigh their options before choosing to target this more impressionable group (Mello, 2010).

Based on all of the evidence listed above by interest groups and experts in their field, this change needs to be made publically so as to hold all media to a standard of accountability. By placing stricter regulations on media sources when it comes to advertising to children, those companies will consider the effects of what they’re advertising. If Bill S. 2342 is passed, corporate businesses using media to sell their
products will have to consider if it is worth paying taxes on their advertisements, and if
the benefit of creating the advertisement, outweighs the new costs. If corporate
businesses choose to proceed with their advertisements targeted at children despite the
lack of return on taxes, they may be more mindful of the way they present their product.

Conclusion

By contacting groups that have shown interest in this topic in the past such as the
American Association of Pediatrics, the Institute of Medicine, the Children’s Advertising
Review Unit, the Federal Trade Commission, and the American Psychological
Association, and by having representatives like Richard Blumenthal speak up about this
topic, the bill will be more likely to make it through the Committee of Finance and back
to the Senate. By making it more difficult for advertisements to target children, it stands
to reason that the number of advertisements will be decreased.

One major positive point in the way the bill is already written is the clause about
directing the Secretary of the Treasury to enter into a contract with the Institute of
Medicine to develop procedures to evaluate and identify food of poor nutritional quality
and brands that are primarily associated with such food. This alliance could lead to
further measures that will help prevent the epidemic of childhood obesity in more ways
then just by making it harder on food corporations. This could be a bill that opens the
doors for more bills to come about in the area of prevention of childhood obesity.

Description of Strategies Moving Forward

As a nurse, it is my duty to help this bill move forward in any way I can. By
contacting KBN and the American Association of Nurse Practitioners, and writing letters to my legislators, I can also help get this bill moving through Committee. Through my clinical rotation, I have already begun to raise awareness by discussing the bill with parents of children, and encouraging them if they feel passionate about the issue of childhood obesity, to write a letter to their congressman about supporting the bill.

Another way to impact the bill is by meeting with representatives about the importance of standing behind this bill. By giving legislators a “bedside” view of how obesity affects children, and informing them about patients we have taken care of, we are allowing them to see first hand why this issue is more then just a bill to many people. This bill could change how healthy children are for the rest of their lives.

Again, it will be crucial to get the support of larger groups like those discussed above. Without their expertise and advice to the Committee of Finance, the bill will die in Committee because there will be no evidence to back up why this bill is so important. These expert groups can provide support through data and recommendations. Awareness has to be made about the seriousness of this bill, and why it could be a door that could lead to the creation and passing of other bills that could prevent childhood obesity.

Celebrity support is also a possibility. Michelle Obama has already used stars like Beyonce to support or “Let’s Move” campaign through commercials and positive reinforcement in the school physical education classes with dances and songs about fitness and health. If more positive media like this is presented to the public, and this bill
is passed, media will become a positive source that helps prevent childhood obesity rather than a negative cause. Nurses are large in number. So as a group if we would bond together to support bills like S. 2342, we could better the health of our community and world.

**Potential Unintended Consequences of Recommended Policy**

As discussed above, the consequence of passing this bill could be an open door to future bills that can help prevent childhood obesity in other ways. Michelle Obama has already brought the idea of children’s health to the forefront of the media. This idea needs to continue to be built upon even after Obama is out of the office of President and Michelle Obama is no longer the first lady. All of the hard work that has been accomplished already should not be stopped but continued.

The consequences to corporate businesses if this bill is passed will be that they will now be taxed on their advertisements geared toward children. Since this will be the case, the food businesses using media advertisement may try to come up with other ways to push their products that may have negative effects. The changes in the targeted audience could cause health disparities in other populations. Since children can no longer be targeted, media groups may choose to target the child’s parents or schools. It is important that as healthcare providers, we are aware of this to make sure that no other consequences result from the passing of the bill.

**Implementation/Enforcement Issues**

We can expect that opposition will occur from the advertising industry. Since the
Institute of Medicine will be working with these media groups, this will possibly make the transition easier. There could be ways for these companies to make their products healthier, and the experts at the Institute of Medicine might be able to help them with that task. This bill also mentioned allotting more money for the Fruit and Vegetable Act, which will help low income families purchase fruits and vegetables instead of often cheaper, unhealthy foods. This would allow healthier alternatives to the un-healthy foods that will no longer be advertised, and will help make it easier for all parents and families to have access to fruits and vegetables.

As mentioned above, it is important to have lots of support from the American Academy of Pediatrics the Institute of Medicine, the Children’s Advertising Review Unit, the Federal Trade Commission, and the American Psychological Association. These groups will not only assist with implementation of the bill, but they can also help to ensure a smooth transition to healthier alternatives. These groups can help educate not only legislators, but the media groups who will implement these practices. It is important that stakeholders understand why changes are coming about, even if they are not happy in support of the changes.
Manuscript 3

Childhood Nutrition and Lifestyle in Owensboro, Kentucky

Mckenzie Mattingly BSN, RN
**Background**

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health, (Rabbitt & Coyne, 2012). In the past, obesity has strictly been an adult disorder. However, in the last 10 years it has become increasingly prevalent in the pediatric population. In the United States, it is now the most common health issue effecting children.

To adequately address childhood obesity, the entire family must be involved. In pediatrics, the family is just as much the patient, as is the child. The family can include all those living in the house and not just the mom, dad, and child. Different families have different needs. Some families may support certain dietary or physical activity practices that are not supported by another family. Healthcare providers have to adjust for these differences, and keep them in mind when trying to better the health of their patient or give advice. (Rabbitt & Coyne 2012).

To seek behavioral changes in children, it is important to not only consider the child, but to consider his or her environment. This is the only way that any treatment or intervention will be successful. For example, if the child needs to start eating healthier, most success will be achieved if the family will start eating healthier as well. It is the healthcare providers role to help these families realize how they can make necessary changes in a way that will best work with their lifestyle.

There are many co-morbidities that are consequential to obesity
Some of these include diabetes, cancer, hypertension, and poor self-esteem. Whereas these co-morbidities used to be solely in the adult population, they are now infiltrating the pediatric population as well. Health care providers must keep this in mind when dealing with pediatric patients who are overweight or obese. In order for healthcare providers to successfully treat the population they serve, they must first understand the community in which they practice. Having an understanding of their community will help providers to best meet the healthcare needs of their community. This study will focus on the population of Owensboro, Kentucky. The goal of this study is to find patterns and risk factors associated with the pediatric population in Owensboro. These patterns could alert providers, that the child might be at risk for being overweight or obese.

**Study Demographics and Setting**

Owensboro Pediatrics is located in Owensboro, Kentucky. It is a privately owned office with eight physicians, two pediatric nurse practitioners, and two physician’s assistants. This office accepts both private and public insurance for payment of services rendered. Each primary care provider sees between 30-40 patients per day. Children in this practice range from birth to 18 years of age.

According to CDC guidelines on height and weight, 5% of children ages 10-17 years in Kentucky are considered underweight annually, 59.3% are considered a healthy weight, and 35.75 are obese (healthiergeneration.org). Kentucky is now the 7th most obese state in the nation for children, and the 12th most obese state for
adults. Staggering statistics are predicted for the co-morbidities associated with obesity by the year 2030. There are 1,278,342 projected cases of heart disease, 748,558 cases of arthritis, and 176,260 cases of obesity related cancer, 594,058 cases of diabetes, and 1,075,750 cases of hypertension. With this prediction only being 15 years in our nation’s future, health care providers need to initiate the implementation of preventive interventions to improve these statistics and future outcomes.

**Study Approval**

Prior to implementation of the study, approval was obtained from the Institutional Review Board through the University of Kentucky. Permission was also obtained from Owensboro Pediatrics Board of Trustees. The study took place during the months of October and November 2015.

**Sample**

Convenience sampling was used to recruit 38 parents of children who were at Owensboro Pediatrics for a well child examination. Inclusion criteria included being seen for well child checks and being between 5-17 years of age. The person completing the survey had to be able to recall the child’s height and weight as well as the child’s type of insurance. The guardian had to feel comfortable reading and writing in the English language. All races were included in the study. Along with questions about demographics for the parent and child, the survey included an area where parents could write ideas for other programs that could be created in
Owensboro, Kentucky, to help with childhood activity and nutrition.

Exclusion criteria included: children under the age of five years, parents with a child older than 17 years being seen for well child check, emancipated minors, and parents/guardians who could not read or write in English. Those who were excluded included foster children, and children who had been in the primary guardian’s care for less than 6 months.

**Subject Recruitment and Study Procedures**

The objectives, process, and implementation of this study were explained to all staff in Owensboro Pediatrics. Parents of children ages 5-17 who were at Owensboro Pediatrics for a well child examination were given a packet. This packet contained an informational flyer explaining the research and why the guardian and child were invited to participate. Also included, was a cover letter that explained in detail to the participant who the primary investigator (PI) was, risks from taking part in the research, benefits, and contact information should they have questions while participating.

Once the guardian chose to take part in the survey, it was filled out while the guardian and patient waited to be seen by a provider. When the patient was ready to be taken to their room for their examination, they were to bring the packet with them. While their child was weighed and measured, the guardian was told in the survey to write down the child’s height and weight for the visit. The guardians were to record the height and weight so that the BMI (Body Mass Index) could be
calculated by the primary investigator later. The completed survey was then to be collected by the PI.

**Results**

Thirty-eight surveys meeting the criteria for participation in the study were collected. Of these thirty-eight, twenty of the children brought by their guardian were male and eighteen were female. Of these total thirty-eight, eight of the children were obese, nine were overweight, nineteen were a healthy weight, and two were underweight. The race of the study was homogenous with 100 percent being Caucasian. The average age of the guardian was between 30-49 years.

Out of the total number of children, 50% were a healthy weight, 24% were overweight, 21% were obese, and 5% were underweight. 73% of the children came from two guardian homes, 18% came from single guardian homes, and 9% of the homes had three or more guardians. Of the single parent homes, two homes out of the nine stated that they had another adult over the age of eighteen living in the household. Of the other seven homes that reported that they were the only guardian and the only adult in the home, 100% of the children were obese or overweight.

When comparing single parent homes to two or more parent homes, there is a significant difference in the number of obese children in the single parent homes versus those who come from a two or more parent household (see Graphic A and Graphic B). Of the guardians who had private insurance, 55% of the children were a healthy weight, 24% were overweight, 17% were obese, and 4% were underweight.
Of those families who had state/public insurance, 33% were a healthy weight, 22% were overweight, 33% were obese, and 12% were underweight.

As far as education, the majority of the guardians had either had some college or had graduated college with both at 32%. Twenty percent had finished high school only, and 16% had post-graduate education. As far as a healthy weight, 50% of the children belonging to parents who had only finished high school had a healthy weight. 21% of children whose parents had some college or were post-graduates were a healthy weight. Twenty-six percent of children with a healthy weight belonged to undergraduates. Thirty-two percent of children whose guardians had some college or had finished an undergraduate degree were obese. Sixteen percent of parents who had a post graduate degree had a child who was obese, and 20% of high school graduates’ children were obese.

When considering hours worked by guardians, it was found that 18% of parents were unemployed, 10% worked <29 hours a week, 59% worked 30-49 hours, and 13% worked 50+ hours. Children who’s parents worked 30-49 hours a week had the greatest number who were healthy, as well as the greatest number who were obese. Those who were unemployed had the second largest percentage of obese children.

Fruit and vegetable consumption was also explored. The recommended number of fruits and vegetables a day is 5 cups or more, (American Heart
Association). Only about 3% of children in this study reported eating at least 4 cups of fruits a day. The majority of the children ate 2-3 cups of fruit a day (excluding juices). Twenty-four percent of these children were at a healthy weight. Thirty-two percent of healthy children ate 2-3 cups of vegetables a day.

Beverages types and amounts were assessed. The majority of children consumed water and milk. Children with a healthy weight drank more water than those who were obese (see Graphic C and D). Activity was also examined. There were several children who did not participate in any athletic activities and who did not get any exercise based on what their guardian reported. Eleven percent of these children were underweight, 34% were healthy weight, 44% were overweight, and 11% were obese. Lastly, electronic device use compared to BMI was reviewed using a cluster chart. The majority of the guardian’s reported that their children used between 3 and 8 hours of screen time a day. However, this was not broken down into entertainment or homework hours (see Graphic E).

Discussion

Overall and through most of the questions, the data was evenly spread. The two main pieces of data that stood out were the data from single adult homes versus two or more adult homes, and insurance types. Nine guardians out of the thirty-eight reported that they were a single parent. Out of those nine, when asked how many adults over the age of 18 lived in the house, two of the nine stated that there
was another adult over the age of 18 in the home with them. Both of these families that had a single parent with a second adult in the home had children who were a healthy weight.

The other seven guardians who reported that they were the only adult living in the home, each had children who were either overweight or obese. From that finding alone, providers can see that it is important to keep in mind that children of single adult homes could be more at risk for being overweight or obese. This also leaves room for future studies targeting single adult homes. It was also interesting that guardians of children who had private insurance, had children who had a much lower rate of obesity than those with public insurance. This causes one to wonder about whether children with public insurance have access to healthy foods, if their parents are able to cook at home, or how their home life is. This is also a topic that could be researched further in the future.

**Conclusion and Recommendations**

Some of the open-ended questions at the end of the survey, showed that many guardians weren’t aware of programs in the community that would help their children stay active and healthy. There are other opportunities and programs in Owensboro outside of the school system, that can help children stay active and learn about nutrition. Owensboro Parks and Recreation offer lessons in several different sports, they host camps, and activities throughout the year. The Family YMCA also offers classes and camps for children, as well as the Owensboro Health Park that is
owned by Owensboro Health Regional Hospital. It would be great to create a program that is easy for providers to implement in practice. This program could incorporate extracurricular activities and classes that target childhood health. The program could also include contact information, and ways to get help with payment and transportation.

Although everyone in this study stated that they did have private transportation, from clinical experiences, it is known that many offices did have patients who are homeless, or have to walk to their appointments because they have no access to a vehicle. With this in mind, programs in Owensboro that help with activity and nutrition, could offer bus passes or other means of transportation for parents and children.

One parent who filled out the survey recommended that Owensboro start a children’s Zumba class. It is important that providers listen to the guardians of patients because they can come up with great ideas that the community can take hold of that will better childhood health. They know what their children need.

**Limitations**

There are limitations in this study. This study was limited to one pediatric office in Owensboro instead of both. This could have skewed the data based on patient population. Also, there are many children in Owensboro who do not see a pediatric provider for primary care. This study does not have any data from any of those families at either the other office, or who do not have a primary care provider.
The data was only collected during a 2.5 week period. Prolonging the data collection period could have allowed a much larger sample and additional data to be collected. Since conducting the survey, there are ways that questions could have been re-worded, excluded, or added.

Overall, the survey received a great response, and it does give providers a better insight into the overall health of the children in Owensboro, Kentucky. This survey points out problem areas in the community, as well as at risk populations to monitor closely.
Graphics

Single Parent Home

Graphic A
Healthy Weight

- Sweet tea
- Water
- Milk
- Unsweet tea
- Diet Soft Drink
- Regular Soft Drink
- Coffee
- Fruit Juice
- Kool-Aid
- Gatorade
- Energy Drink

Graphic C
Obese

Graphic D
Electronic Device Use

Graphic E

- underweight
- healthy weight
- overweight
- obese
Appendix A: Survey

Survey about Pediatric Nutrition and Lifestyle in Owensboro, Kentucky

*Please answer the following questions as it relates to the child that you have brought today for a well child examination.

1. What is your (the guardian/parent) age? (Please circle the answer that best applies to you.)

   18-29 years old
   30-49 years old
   50-69 years old
   70+

2. What is your (guardian/parent) gender? (Please circle which best describes you).

   Male
   Female

3. What is the highest level of education completed (guardian/parent)?

   Elementary School
   Middle School
Some high school
High school
Some College
College Graduate
Post-Graduate (Masters, Doctorate)

4. Are you a single guardian/parent? (Circle which one best applies to you).
   Yes   No

5. Do you have personal transportation? (Circle which best applies to you).
   Yes
   No, public transportation
   No, walking
   No, family or friend brought us

6. How many adult caregivers live in your household? __________

7. How many children <18 years live in your household?
   __________

8. Are you employed outside the home?    Yes   No
9. How many hours do you (guardian/parent) work in a typical week. __________

10. Do you work days, evenings, or nights? ______________

12. Does your child have private (i.e. Humana, Anthem PPO, etc) or public insurance (i.e. Medicaid, Coventry Care, Wellcare, Tricare, Passport, etc).

Private ______

Public ______

13. What is the age of the child that you have brought with you that will be seen today? ______

14. Is the child you have brought with you today male or female? ______

15. How many times a week (on average) do you feel that your family is able to sit down and eat breakfast together?

Zero ______

1-2 times a week _____

3-4 times a week _____

5-6 times a week _____

More than 6 times a week ______
16. How many times a week (on average) do you feel that your family is able to sit down and eat lunch together?

Zero___________

1-2 times a week _____

3-4 times a week _____

5-6 times a week _____

More than 6 times a week_______

17. On average, how many times a week does your family sit down and eat dinner/supper/evening meal together?

Zero___________

1-2 times a week _____

3-4 times a week _____

5-6 times a week _____

More than 6 times a week_______

18. On average, how many hours a week does your child view/use the following electronic devices: Ipad, computer, television, cell phone, ipod, electronic gaming systems or any other electronic entertainment system not already listed?

Zero hours a day ____________

48
<1 hour ______
1-2 hours ______
2-3 hours ______
3-4 hours ______
4-6 hours ______
7-8 hours ______
More than 8 hours ______

19. On average, how many hours per week does your child participate in one of the following sports or activity (please write the number of hours next to the sporting activity):

Archery ______
Track ______
Swimming ______
Dance ______
Cheerleading and/or gymnastics ______
Running ______
Basketball ______
Baseball/t-ball ______
Soccer ______
Football _________

Tennis _______

Ice skating or ice hockey _________

Other activity ____________

Please list other activity or activities:

____________________________________________

____________________________________________

20. On average, how many servings (one serving is ½ a cup) of fruits does this child eat per day, NOT including juice?

0-1 servings _______

2-3 servings _______

4-5 servings _______

6-8 servings _______

More than 8 servings _______

21. How many servings of vegetables (one serving is ½ cup) does this child eat per day?

0-1 servings _______

2-3 servings _______

4-5 servings _______
6-8 servings ______
More than 8 servings ______

22. **Please write how many cups (8 ounces) of each of the following your child drinks when they are at home (excluding school time):**

- Water ______
- Milk (white, chocolate, or other) __________
- Sweet tea ______
- Unsweet tea ______
- Soft drinks-diet ______
- Soft drinks-regular ______
- Coffee products ______
- Fruit Juices ______
- Kool-Aid ______
- Gatorade or other athletic beverage_______
- Energy drink (i.e. Red Bull or Monster)___________
- Other (please name) _______________

23. **Are you aware of any programs in Owensboro, Kentucky (outside of the school system or school related activities) that support children and families of children by helping them with**
weight loss, better nutrition, or activity? Yes_____ No _______

24. Have you signed your child up to participate in any activity in the community that helps children with weight loss?

Yes _______ No __________

25. Have you signed your child up to participate in any activity in the community that helps children with nutrition?

Yes _______ No __________

26. Have you signed your child up to participate in any activity in the community that helps with activity?

Yes ___________ No _______________

27. If you answered yes to question number 24, 25, or 26, please list the name or names of the organizations or programs your child has participated in:

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

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28. Would you be interested in learning about more health related programs for your child in Owensboro, Kentucky in the future?
Yes __________ No __________

29. Do you have any ideas or suggestions about programs that you would like to see in the Owensboro area?
___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________
___________________________________________________________________________________

30. Please list your child’s height from today’s visit:
___________________________________________________________________________________
___________________________________________________________________________________

31. Please list your child’s weight from today’s visit:
___________________________________________________________________________________
DNP Capstone Conclusion

Childhood obesity is a serious public health concern for pediatric nurse practitioners and other primary care providers. Children who are overweight or obese face greater stressors, co-morbidities, and have shorter lifespans than children who are a healthy weight. If obesity can be stopped in the pediatric population, these children are more likely to be healthy adults who live healthy lifestyles. By teaching them to be active, eat nutritious foods, and drink healthy beverages, they will lead healthier lives.

It is important that healthcare providers understand the patient population they serve in their area and target the population’s weak points. By taking time in well child examinations, and talking to parents and children, providers can better assess where a child is and what they need. Identifying patterns in families, and sometimes understanding the situation the family is in, can help the provider assess how to best help the child live as healthy a lifestyle as he or she can.
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