An Overall Look at the Health and Wellness of WELS Elementary School Students

by

Andrew C. Olson

Thesis

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Date:

This thesis paper has been examined and approved.

Review Committee:

_____
Dr. Cynthia Whaley, Chair

_____
Dr. John Meyer

_____
Dr. Jason Lowery

Approved:

_____
John Meyer
Director of Graduate Studies

Abstract

The primary purpose of this study is to determine the overall picture of student health in WELS elementary schools. This thesis discusses how much physical activity and health and nutrition education these students are regularly receiving. Data for this study was collected through a questionnaire, which was sent to all K-8 WELS teachers.

In the first part of the thesis, research on current health practices and guidelines related to elementary students is presented. The thesis then highlights the methods used to collect the data as well as the limitations of the study. The last two sections of the thesis examine the results of the questionnaire and offer recommendations to elementary school teachers.

The results show that WELS elementary teachers are providing their students with adequate time for physical activity. However, nutrition and health instruction is happening much less frequently than the experts in the field suggest.

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I would like to thank all of the many people that have helped me along the way to completing this final project as well as the entire graduate studies experience. Thank you to all the professors at Martin Luther College who helped me throughout the last few years and have given me these opportunities to grow in knowledge and have given me resources to enhance my daily teaching. Thank you specifically to Dr. Meyer, Dr. Lowery, and Dr. Whaley, my committee who has helped me complete this final project. Thank you to Sarah Krause for helping to send out the survey and gather various statistics for me. Thank you to all who participated in the survey. Without your assistance, this all would truly not be possible!

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Chapter I: Introduction

Problem Statement

Obesity is an issue affecting millions of Americans and billions of individuals worldwide (Mado, 2021). One group of individuals that is affected by the issue of obesity is American children. In fact, about one out of every five (20%) of American children are categorized as obese (Elrick, 2018). American children (Grades K-8) spend much of their time in classrooms, between 10,000 and 12,000 hours (This is assuming that elementary school students are in school for seven hours each day, for approximately 180 school days, and that they are in elementary school for nine years from kindergarten through eighth grade)! This allows for a great opportunity for grade school teachers and schools. Schools have an opportunity to work with children and prevent childhood obesity in the early stages of education, as well as to help those suffering with obesity to find ways to help them on a healthier path.

Purpose of the Study

There is not a great deal of research done on how childhood obesity is not only recognized, but also being addressed in the American elementary classrooms; even less research has been done in Wisconsin Evangelical Lutheran Synod (WELS) elementary schools. There are, however, examples of research done on the prevalence of childhood obesity, as well as research done on physical education deficiencies in grade schools.

There are statistics on the prevalence of obesity in school age children and studies showing that the numbers of obese children are still growing. Obesity levels in children (ages 2-19) have tripled since the 1970s. Now nearly 20% of children have obesity

(Larery, 2019 & Warren, 2020). 2016 data showed the amount of children ages 5-19 who are obese to be 340 million (Jacob, et. al., 2021).

Data suggests that many children are not getting the suggested amounts of physical activity as suggested by both the World Health Organization and the Centers for Disease Control and Prevention. According to the World Health Organization, less than half of children are getting the 60 minutes of daily physical activity as is recommended (2017). A study in Nova Scotia found that only 39% of children are meeting the recommended 12,000 daily steps (Graham-DeMello, et. al., 2021). In 2009, a study of fourth and fifth grade students found that only 18.4% met the daily physical activity recommendation (McGee, et. al., 2013). A United States elementary school study found that only 61-62% of elementary-age students meet healthy fitness zone standards for aerobic capacity (Cheung, et. al., 2019).

There is a gap in the research on understanding how much is or should be taught on the topic of health and nutrition in the school setting to combat health issues including childhood obesity. Additional research must be conducted to determine what teachers can and should do in their allotted classroom time to help students be healthier, more knowledgeable, and more active individuals. The purpose of the study is to gather information from WELS teachers around the country to see a better picture of how the WELS as a synod is doing to teach students in the areas of physical activity and diet and nutrition.

Research Questions

1. How much physical activity do children in Wisconsin Evangelical Lutheran Synod elementary schools (K-8) receive?

2. Are Wisconsin Evangelical Lutheran elementary schools (K-8) involved in teaching nutrition education to their students? If so, how often and in what ways?

Definition of Terms

Obesity. A term used if a person is at or above the 95th percentile for BMI (Body Mass Index) for their age and gender.

Healthy Eating. Maintaining a diet that involves all five food groups: dairy, grain, fruit, vegetable, and protein.

Nutrition Education. The intentional effort by teachers to use instruction time either in a pre-existing subject area, or independently, to help students understand the effects that their food choices make on their overall health.

Physical Activity. Movement performed with the intention of exercising, playing a sport, or working to improve overall health.

WELS. Wisconsin Evangelical Lutheran Synod

Assumptions and Limitations of the Study

Emails were sent to all K-8 WELS teachers in the United States. While this is over 1,800 individuals, the response rate of 25% may not give a full picture of all WELS schools in the nation. The unreported data from the remaining WELS teachers may have changed the outlook on the health of all WELS elementary students.

Individuals completing the questionnaire were asked to answer several questions by selecting a range, such as 61-120 minutes, and may not give exact, or the most accurate data on the information being collected.

Overview

The next chapter of this study is the literature review. This review looks at recent statistics and opinions on the health of elementary school children. It also looks at any recommendations from various health organizations on how much and what type of exercise these students should be getting on a weekly basis. Chapter three explains the research that was conducted and those that were involved in the process. Chapter four discusses the results of the study that was conducted. Finally, chapter five is the summary of the study as well as future recommendations that may assist WELS teachers as they look to better their instruction.

Chapter II: Literature Review

Current Health Levels in Elementary Age Students

Physical Activity

Childhood obesity can be attributed to a number of factors. One major factor is the amount of physical activity that the children get regularly. There are several statistics about the amount of physical activity that children are getting. Not only is the amount of exercise important, but just as important is that the children are aware of the benefits gained through being physically active. A study in Pakistan discovered that 53% of students were unaware of the benefits of physical activity (Jacob, et. al., 2015).

So just how much activity are students getting daily? A study of children in Nova Scotia noted that only 39% of students were getting the recommended 12,000 steps each day (Graham-Demello, et. al., 2021). Another study found that merely 7% of girls and 30% of boys ages 13-14 regularly get 60 minutes of exercise daily (Almas, et. al., 2020). The Centers for Disease Control and Prevention, or CDC, also reported that about one in four (25%) adolescents do not engage in an hour of physical activity on any days of the week.

The issue of lacking physical activity can not fall directly on the child, as if she were 100% responsible for her health. As schools play such a large part in a child's life, it is also critical for schools and their teachers to work time into their daily schedules for students to be physically active.

It was reported that only 4% of elementary schools and 8% of middle schools offered daily physical education in 2006 (School Obesity Prevention Recommendations: Complete List, n.d.). 8% of elementary schools and 6% of middle schools meet the

recommendations set by the National Association for Sport and Physical Education. Only 50% of schools require physical education in grades 1-5 and 25% require it in grade 8. In 2000, 29% of elementary schools scheduled no recess in grades K-5. At the state level, 38% of states do not require content taught in the area of physical activity and fitness (Story, et. al., 2006).

In 2018, a United States survey asked several questions to individual states regarding the time their teachers were setting aside for students to participate in physical activity. For the "comprehensiveness of physical activity policies", two states said their policies were comprehensive, 32 states claimed to be moderately comprehensive, and 16 states rated themselves as low. For the question, "Does the state have laws that address providing physical activity through recess?", only six states reported that their laws require daily recess for children (Warren, et. al., 2020).

Nutrition/Health Instruction

Another issue that may lead to childhood obesity is lack of a nutritional diet or lack of teaching about healthy eating. Students must learn how to better understand and control what they eat daily. A study in Pakistan found that 73% of the students *wanted* to learn more about nutrition (Jacob, et. al., 2021). And teachers want to teach their students about nutrition. Of all the health concerns that teachers have for their students, nutrition is the second highest (Gahagan, 2018). Another study found that 97% of teachers feel that nutrition education is very to somewhat important (Perera, et. al., 2015). However, students are not getting the health education that is needed. Students only receive between 4.5 and 13 hours each *year* on food and nutrition education (Koch, et. al., 2020). Thushanthi Perera reports that hours of teaching nutrition and dietary behavior in schools

decreased from 5 hours to 3.4 hours from 2000 to 2006. These students need 50 hours or more each year to result in long-term changes in attitudes and behaviors. Another issue is that nutrition and dietary behavior is one of 15 competing topics related to health (2015).

In a 2018 national survey, when rating the "comprehensiveness of school nutrition policies", one state reported themselves as comprehensive, 13 states as moderately comprehensive, 33 states as low, and four states as having no coverage on the topic (Warren, et. al., 2020). Although students may not be receiving enough direct instruction on how to create good, healthy food habits, 70% of states do require health curriculums to include instruction on nutrition and dietary behavior (Story, et. al., 2006).

The problem is not only how much students are taught, but what those students are eating as part of their daily diet. School-age children eat 19-50% of their daily food while they are at school (Story, et. al., 2006). And the food being offered to these students as part of a hot lunch program or in vending machines is not always the most nutritious. In 2000, 43% of elementary schools and 74% of middle schools had vending machines or school snack bars. Only 18% of the foods found in those vending machines were fruits or vegetables. Additionally, 58% of elementary schools and 84% of middle schools sold soft drinks, sport drinks, or fruit drinks (Story, et. al., 2006).

In a 2015 national survey, the HEI (Healthy Eating Index) score for American children was 54 out of 100, which was a slightly better score compared to ten years earlier, when American children scored a 50 (Warren, et. al., 2020). Not only are the foods children eat often not healthy and nutritious, these foods are also often eaten in excess. In a report to President Barack Obama by the White House Task Force on Childhood Obesity, it was reported that one in five school-age children has up to six

snacks per day. Americans are now eating 31% more calories than 40 years ago, including 56% more fats and oils and 14% more sugars and sweeteners. The average American now eats 15 more pounds of sugar per year when compared to 1970 (White House Task Force on Childhood Obesity, 2010).

Obesity

Obesity affects millions of American children. Those categorized as obese are at or above the 95th percentile for BMI (Body Mass Index), and those categorized as overweight are those who are between the 85th and 95th percentiles for their BMI. Obesity is an issue in so many American children, and with obesity comes the risk of further health concerns, such as diabetes, cardiovascular disease, chronic obstructive lung disease, and cancer (Jacob, et. al., 2021). Childhood obesity has also been linked to premature death in more than one million American citizens (Gahagan, 2018). Overall, approximately one in five children aged 6-19 are obese (Elrick, 2018). A world health agency found the total number of obese children to be 340 million, and that 83% of those children were in developing countries (Mado, et. al., 2021). This statistic, however, may be much higher due to children who may not get regular medical screenings.

Childhood obesity levels can also vary based on age, gender, ethnicity, or economic status. A 2016 National Health and Nutrition Examination Survey found the levels of childhood obesity to be 14% for children ages 2-5, 18% for ages 6-11, and 21% for ages 12 to 19 (Warren, et. al., 2020). Also, children who were overweight at age five were four times more likely to be obese between the ages of five and 14 than children of a normal weight at that age (Larery, 2019).

While both boys and girls have an almost equal prevalence of childhood obesity, boys were found to have slightly higher obesity levels, 19% compared to 18% for girls (Warren, et. al., 2020).

Recently, greater rates of obesity have been found among children aged 5-9 and also in the Hispanic and Black populations (Remaly, 2021). The 2016 NHANES survey looked at obesity prevalence based on ethnicity, and found the percentage for Asian children to be 11%, Black was 22%, Latino was 26%, and White was 14% (Warren, et. al., 2020).

Another factor in the rate of childhood obesity is economic status. A 2019 study found that racial inequality in income, unemployment, and homeownership, were associated with obesity. The study also found the odds of having obesity or being overweight increase to 60% if the individual lives in a neighborhood that is unsafe or does not have public access to things like sidewalks and parks (Warren, et. al., 2020).

Obesity is not new, but has been, is currently, and will continue to be an issue until measures are taken to prevent and resolve it. America as a nation, and our world as a whole, are seeing the numbers of obese children increasing significantly. A study in China found an increase in childhood obesity from 6.6% to 16 % from 2002 to 2012. Worldwide, the percent of obese children has tripled since the 1970s (Elrick, 2018; Larery, 2019; Story, et. al., 2006; & Warren, et. al., 2020). Due to the COVID-19 pandemic, the rate of childhood obesity has risen significantly over the past year, with an increase of 2% in that short time (Remaly, 2021). The statistics make it clear that childhood obesity is a major problem and the number of individuals who are obese and overweight has risen over the past few decades.

Issues for Elementary School Teachers

There are several factors that hinder teachers from being able to help children effectively deal with the issue of childhood obesity. Teachers must find the time to educate students about health and give them opportunities during the school day to exercise. One issue is the lack of available space to teach and exercise (Almas, et. al., 2020). This issue would mostly apply to areas to have recess or a physical education class.

Another issue for teachers is that they may not receive the proper training to effectively teach a health or nutrition class (Cotton, et. al., 2020 & Koch, et. al., 2020). Teachers may also be affected because those suffering from childhood obesity may also present learning or behavior challenges. According to Mary Story et. al., "Severely overweight children are four times more likely to report impaired school functioning and twice as likely to be in special education and remedial classes" (2006). Those children who are overweight or obese may also deal with issues such as being teased or bullied, feelings of loneliness, and low self-esteem (Story, et. al., 2006).

Two other issues for teachers are inconsistent policies and uninvolved parents. Each state in America controls its own education policies and curriculum choices (Graham-Demello, et. al., 2021). This could lead to the problem of teachers not knowing what the policies are, especially those teachers who may move to different states with differing policies. Another problem could be a lack of policies in place for teachers to teach the content. In a study in Nova Scotia, it was reported that of all the educational policies, only 0.3% of them dealt with physical activity, and only 1% of the policies dealt with healthy eating and nutrition (Graham-Demello, et. al., 2021). Another aspect related

to policies is that teachers are dealing with a lack of time. Time is often spent on core subjects and preparing students for state achievement tests, and as a result, nutrition and physical education are often not given the time needed (Cotton, et. al., 2020; Koch, et. al.; & Story, et. al., 2006).

Teachers also need the appropriate resources, not only to be able to effectively teach the students at school, but also teachers need resources that can provide assistance to parents at home (Cotton, et. al. & Gahagan, 2018). Oftentimes, instead, there is a lack of resources provided to teachers and parents, and there becomes a disconnect between what may be taught at school and what is done at home (Perera, et. al., 2015).

National Recommendations for Healthy Living

There are many different organizations in America that offer guidelines on how much exercise and health instruction children need. A health and nutrition education curriculum was created in Spain to give students 30-40 hours of intervention each year (Santos-Beneit, et. al., 2019). In America, the recommendation is much the same. It is recommended that students get 30-50 hours of food and nutrition education each year (Koch, et. al., 2020). This nutrition class would be taught in addition to an already in place physical education class.

Let's Move! was a health initiative that was launched by First Lady Michelle Obama in 2010. This was also the same year that the White House established the Taskforce on Childhood Obesity. There were many goals of this initiative, but the major one that received the most attention was aimed to get children 60 minutes of physical activity daily. The initiative also looked to the future and established the goal to reduce

childhood obesity to just 5% by the year 2030 (White House Task Force on Childhood Obesity, 2010).

SHAPE America, or the Society of Health and Physical Educators, was created way back in 1885. The program includes national physical education and health education standards. SHAPE America and the National Association for Sport and Physical Education recommend that elementary students get 150 minutes of Physical education per week, and that middle school students get at least 225 minutes each week (Elrick, 2018).

Physical education guidelines for Americans, according to Human Health Services, are that children ages 6-17 should get 60 minutes each day of moderate to vigorous-intensity physical activity, vigorous activity at least three days each week, muscle-strengthening at least three days each week, and bone-strengthening activities at least three day each week (Centers for Disease Control and Prevention, n.d).

The World Health Organization (WHO) also recommends 60 minutes of moderate to vigorous-intensity physical activity. The U.S. National Library of Medicine- National Institutes of Health recommends 60 minutes of physical activity each day and 30 minutes of vigorous activity at least three days each week (Elrick, 2018). The National Association for Sport and Physical education recommends that all students through Grade 6 receive daily recess and that recess should not be "taken away" for any reason (Story, et. al., 2006). Centers for Disease Control and Prevention recommends that at least 50% of every physical education class be MVPA, or moderate to vigorous physical activity.

The CDC created a program called Whole School, Whole Community, Whole Child, which was established to allow and encourage those in health and education

sectors to work together to help children be as healthy as possible. The CDC also created Active People, Healthy Nation which aims to help 27 million Americans become more physically active by 2027 and for 2 million young people to meet the aerobic physical activity guidelines for youth (Warren, et. al., 2020).

UNICEF, or the United Nations Children's Emergency Fund, recommends that children get at least 12,000 daily steps. This may be difficult to track, especially for children, although there are many fitness trackers available today, including some made for children.

The Healthy, Hunger-Free Kids Act was created in 2010 to improve child nutrition. The program looks to help ensure that schools are offering their students healthy meals (Koch, et. al., 2020). A final recommendation comes from the Institution of Medicine, which endorses BMI reporting, and recommends that schools measure BMI of students and make the information available to parents (Story, et. al., 2006).

The Role Elementary Schools Play on Children's Health

The responsibility of helping children to be healthier and develop positive lifelong habits falls in part on schools and their teachers. On school days, children spend roughly half of the time they are awake at school. And children in traditional schools are in school for nine out of the 12 months of the year. This creates a responsibility and an opportunity for teachers to help make a difference in their students' health.

Wayne Cotton, et. al. states, "Schools are ideal settings for preventative nutrition education efforts targeting children due to their reach, structure, and cost effectiveness" (2020). The school setting provides the platform to deliver interventions for those overweight and obese (Jacob, et. al., 2021).

Schools are social institutions that have the ability to work and communicate with different groups of people (Hussain, et. al., 2015). Teachers care for their students and want what is best for them, including good health. Schools are a place that teachers can instruct students on habits that they can carry with them to their homes and throughout their lives (Jacob, et. al.; Santos-Beneit, et. al.; & Story, et. al., 2006). It is in schools where teachers have the blessing to be able to portray themselves as positive role models for their students to follow (Elrick, 2018). Elementary schools are able to reach children during their behavior learning period, and work to instill positive behaviors in their lives (Santos-Beneit, et. al., 2019). Haiquan Xu, et. al, in a study in China, found that health interventions were more effective when done in schools compared to interventions in other settings (2020).

Ideas and Encouragements for Teachers

There are many steps, some big and some small, that teachers and schools can take to help their students be healthier while in school, and also to carry some of those healthy habits into their homes. One improvement is simply to work towards better communication and collaboration. Teachers can send material home that will reinforce the lessons taught during the school day. Teachers can also collaborate with other teachers in the same school or district so that the best possible ideas can be used throughout the school. Fighting against big issues like childhood obesity can only be successful if multiple groups of people are working together towards a common goal. In this case, parents, teachers, and students should be working together and in constant communication. Teachers are to educate their students on health and nutrition just as they do with any other subjects. Schools can and should consider adopting a set curriculum so

that all teachers can spend an allotted time on this important subject. However, teachers are not to put any unnecessary pressure on students or parents (Elrick, 2018). Having the parents and family involved in the process is critical. After all, students spend the majority of their day and year still at home. Parents must know what material is being taught on the subject at school and be encouraged to work on the same habits at home. All parties involved must recognize the importance of spending time learning about health both in school and outside of school. “Family involvement is critical for reinforcing learning outcomes in classroom nutrition education” (Lytle, 1995, as cited in Perera, 2015). “The most effective way of preventing and controlling overweight and obesity is through family empowerment” (Mado, et. al., 2021). Schools must place a greater emphasis on life-style changes as opposed to scientific knowledge or memorization on the topic (Xu, et. al., 2020).

Another step in the right direction is helping students to learn about and practice eating nutritious food. Teachers are to teach their students the skills that will enable them to select and prepare foods, especially snacks, for themselves (Kelder, et. al., 2005). This will take time out of the already busy school day, but teachers must understand the implications if students are not taught and trained on healthy habits from an early age. Another idea, more applicable to schools with large budgets, is to hire culinary experts, which will ensure that students are truly getting the proper nutrition, as well as creating an atmosphere that is more youth-friendly (Story, et. al, 2006). Schools with smaller budgets can use a nutrition curriculum. Some materials are even available free, such as those found at myplate.gov. Teachers can create health newsletters that can be sent home monthly, or even weekly. Schools can put together healthy food tastings, either for the

students, or even better, as a family event. Nutritious food can be added or substituted in a cafeteria and schools can work to eliminate advertising of unhealthy foods (School Obesity Prevention Recommendations, n.d.). Schools can work to eliminate sugar drinks from campus, and even ban or highly discourage students from bringing them to school. School gardens can be started to add both education and fun to students as they are studying health and nutrition. Teachers can work health and nutrition education material into other subject areas. Effective teachers are able to integrate (Elrick, 2018; Santos-Beneit, et. al.; & Story, et. al., 2006)! Finally, it is important to remember that *both* nutrition education and physical activity are needed for an effective intervention against childhood obesity (School Obesity Prevention Recommendations, n.d., & Xu, et. al., 2020).

Teachers should also work to make sure students are staying physically active while at school and encourage them to do the same at home. Schools should work to make sure that students who are participating in physical education class or recess are staying physically active (School Obesity Prevention Recommendations, n.d.). Too often, valuable time is spent instead idly standing or even sitting at a desk as part of direct instruction. Physical activity assessment tools such as Fitness Gram could be used to ensure that a school's physical education curriculum is held to the highest standards (Cheung, et. al., 2019). Physical activity should not only be offered during school hours, but also before and after school (Kelder, et. al., 2005 & School Obesity Prevention Recommendations).

Health services should be provided at schools to address obesity and provide health screenings, especially to lower-income families that may not get screened

regularly (Story, et. al, 2006). Schools should work to make sure their teachers are properly trained to instruct their students on topics related to nutrition and physical activity. Television and video-viewing can be discouraged, as these only add to the likelihood of childhood obesity (Story, et. al., 2006). Wellness programs should also be made available to faculty and staff (Childhood Obesity Prevention Recommendations, n.d.). Teachers will be more effective in teaching students to be healthy if they themselves can lead by example.

There are many free resources available to teachers as a starting point to address the issues related to childhood obesity, and teachers should take full advantage of them. Teachers are encouraged to speak up and advocate on behalf of their students. They ought to recognize those who may be at risk or suffering from health issues and let them and parents know how you can help (Elrick, 2018). Finally, whatever the intervention is, consistency is key. The longer the intervention, the greater likelihood of success.

Summary

There are many different recommendations in regards to what children should be doing for daily or weekly exercise as well as what children should and should not eat as part of a healthy and complete diet. Obesity is even beyond a national issue, it is a global issue affecting many millions. Elementary teachers can make a difference in the health of their students. When time during the school day is utilized to keep students physically active, teachers are playing their part. When students are taught about the food they eat and given tips on how to make healthier choices, teachers are doing their part.

So, how are WELS teachers doing in creating healthier, happier, and more successful students? Are WELS schools following the recommendations put together by

health experts? Are they exceeding the expectations or may there be room for improvement and additional time in the school day to work on student health?

Chapter III: Methodology

Introduction

This research study was done to help gain a clearer picture on WELS elementary school children and any health concerns that currently exist, as well as to find ideas of ways for teachers to implement more regular health instruction and physical activity throughout the school day. The health of students should be a responsibility and concern not only of the parents but also of the classroom teacher. This study looks at WELS K-8 schools all over the United States to see how they are doing in being instrumental in children's health. The study will look to answer the following questions:

1. How much physical activity do children in Wisconsin Evangelical Lutheran elementary schools receive?
2. Are Wisconsin Evangelical Lutheran elementary schools (K-8) involved in teaching nutrition education to their students? If so, how often and in what ways?

Research Design and Procedures

A Google Form was used for the study and was created to receive both quantitative and qualitative data. The form itself was very simplistic in nature, only consisting of ten questions. These questions could then fit into two categories: questions on weekly exercise and questions regarding nutrition and healthy eating.

There were four questions on the survey related to student exercise. Generally, the main component of exercise in schools happens during recess. The teachers who received the survey were first questioned about the actual amount of recess their students received on a weekly basis. Weekly statistics were tracked as opposed to daily statistics to account for the fact that teachers may have different daily schedules and different days off,

possibly affecting their daily numbers. Teachers were asked to quantify their recess as minutes per week.

As the study was looking for how much exercise students get during the school day, the next question was asked of how many students are truly active during their recess periods. This particular question was more subjective in nature. There is an understanding that not every teacher will have the same viewpoint on what "physically active" may look like.

Another key component to student exercise is the physical education class. Teachers were once again asked to report on minutes per week that physical education was taught to their students. Finally, teachers were asked another subjective question about how they felt their school, and they themselves, were doing to help students be healthy.

In addition to these questions, teachers were asked three questions about nutrition and healthy eating. First, they were asked if their school had a set curriculum in place for teaching nutrition. Second, teachers were asked in what subject area the topic of healthy eating would be addressed. Finally, a quantitative question was asked in regards to how many lessons involving nutrition and healthy eating were taught by a given teacher in a given year.

Population and Sample

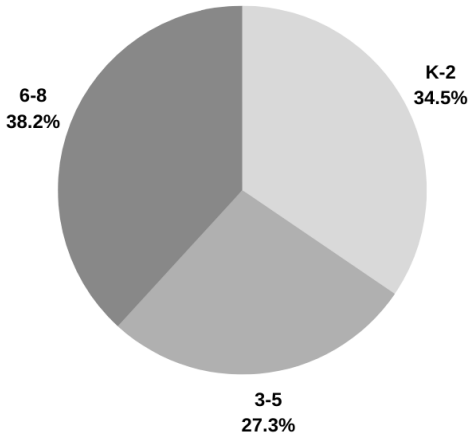
Surveys were sent to all active K-8 teachers in the Wisconsin Evangelical Synod. A total of 1,818 teachers were emailed with the survey. The original deadline was one week after the surveys were sent. However, based on the response rate, teachers were

given an additional week to complete the survey. In total, 452 teachers completed the survey, for a response rate of 24.9%.

Teachers receiving the survey were asked to also indicate which grade band they taught in, and the results indicated surveys were completed fairly evenly across teachers from all grade levels. See figure 1 for a complete summary of this question.

Figure 1

Grades Taught by Teachers Surveyed

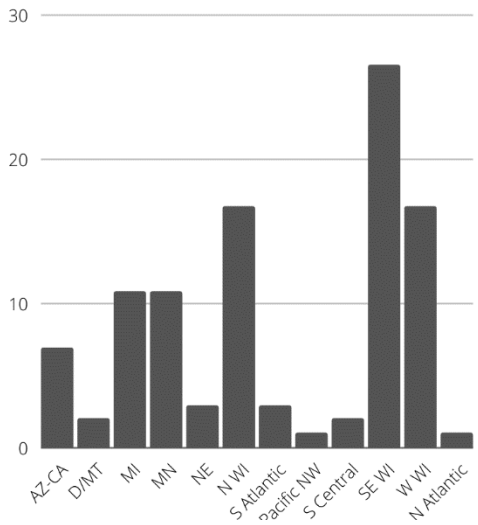


The goal of the survey was to get a picture of the entire WELS synod and all regions of the United States. Survey participants were also asked to select the name of the school where they teach to better see where the results are coming from. Surveys were received from a total of 215 different schools.

Participants were also asked to select the district they teach in. Surveys were received from every WELS district. The highest survey completion came from the three districts of Wisconsin, 17% from Northern Wisconsin District, 27% from Southeast Wisconsin District, and 17% from Western Wisconsin District. Of all completed surveys, 61% came from the state of Wisconsin. See figure 2 for a complete breakdown of surveys received from each WELS district. Table 1 further shows the participation percentages by

district, showing that each district had between 10% and 40% of its teachers complete the survey.

Figure 2
Percentage of Surveys Received by WELS District



*Note: State abbreviations were used for this chart.

Table 1
Survey Completion Percentage by District

District Name	Number of Elementary Schools	Number of Elementary Teachers	Number of Teachers Completing the Survey	**Percent of Teachers Completing the Survey**
Arizona-California	18	113	30	**27%**
Dakota-Montana	5	33	7	**21%**
Michigan	34	141	48	**34%**
Minnesota	31	186	48	**26%**
Nebraska	15	63	13	**21%**
North Atlantic	2	8	3	**38%**
Northern Wisconsin	44	321	77	**24%**
Pacific Northwest	7	40	5	**13%**
South Atlantic	17	132	15	**11%**
South Central	6	46	8	**17%**
Southeastern Wisconsin	57	546	118	**22%**
Western Wisconsin	46	301	74	**25%**

Instrumentation and Data Analysis

An electronic survey was used to gather the data and to summarize the data findings. The survey had a total of 10 questions, all of which were multiple choice. The first seven questions on the survey had between two and six choices. Teachers were only able to select one choice for each question. Four of the questions were on the topic of exercise, three on the topic of healthy eating and nutrition, and the last three gathered data on the name of the school, the WELS district of that school, and the grade level taught by the teacher taking the survey.

Descriptive statistics were used to analyze the data. Through Google Forms and Microsoft Excel, the findings were sorted, graphed, and analyzed.

Questions one through four on the survey will help to answer the first research question. Questions five through seven will help to answer the second question. Finally, the last three demographic questions will show where the data is coming from, to make sure the WELS synod is being accurately represented.

Limitations

One limitation may be the relatively small response rate. Only one fourth of the teachers responded and completed the survey. However, although this may be a limitation, the responses that have been submitted are representative of grades K-8 and all WELS districts.

Another limitation is that the surveys were only sent to K-8 elementary teachers. WELS early childhood ministries and high schools will not be represented in the findings.

A limitation of this study is that data will show the time that teachers are putting in to make sure their students are as healthy as possible but does not track to see if what teachers are doing is making a difference on health challenges, specifically, childhood obesity.

While the majority of the questions posed in the survey were objective, there were two questions which were subjective by nature. One question asks teachers to judge how "active" students are at recess. The other question asks teachers to report how they feel they, or their school, are doing in providing adequate activity and exercise for their students. Both of these questions may be more difficult to answer.

Finally, there is the limitation of not exploring what WELS schools might be doing to help students become healthier through after school activities and sports. The questions asked on the survey only cover exercise as it happens during the typical school day, exercise in both recess periods and physical education classes.

Summary

Responses were gathered from teachers across the WELS, of all grades K-8 and from all 12 WELS districts. Data was gathered to see how WELS K-8 schools are doing in giving students opportunities during the school day to live an active, healthy life, The final goal would be providing ample physical activity and nutrition education during the school day and encouraging healthy habits outside the parameters of the school day and the school's campus.

Chapter IV: Results

Introduction

The purpose of this research study is to see how WELS K-8 schools are doing in taking an active role to promote and encourage student health through exercise and education. Are WELS schools following the guidelines and recommendations of the health experts? Are the students getting the exercise they need to avoid or combat serious health issues such as obesity? Can our schools do more? Should they?

Teachers have the time necessary to make changes in the lives of their students in many ways. Teachers certainly have an opportunity to make an impact on student health. American children (Grades K-8) spend between 10,000 and 12,000 hours in the classroom! This is assuming that grade school students are in school for seven hours each day, for approximately 180 school days, and that they are in grade school for nine years from kindergarten through eighth grade.

A survey was created and sent to all K-8 WELS teachers. These survey questions will answer the big research questions of the study. These questions are:

1. How much physical activity do children in Wisconsin Evangelical Lutheran Synod elementary schools (K-8) receive?
2. Are Wisconsin Evangelical Lutheran elementary schools (K-8) involved in teaching nutrition education to their students? If so, how often and in what ways?

Data Analysis

1. How much physical activity do children in Wisconsin Evangelical Lutheran Synod elementary schools (K-8) receive?

The survey asked participants four different questions on the topic of student physical activity. The first of the questions, and the one which revealed the most data, was the one which asked how many minutes of recess students got on a weekly basis. This data helped to see how much physical activity students receive in WELS elementary schools compared to what is suggested in the national guidelines. Participants were asked to select from six choices, with a range from zero recess minutes all the way up to 300 or more minutes weekly.

The largest percentage (28%) of participants selected that their students receive 120-179 minutes of recess weekly, or about 30 minutes daily. This is half of the daily physical activity minutes suggested by the World Health Organization. Total recess minutes were also analyzed by grade band. The findings are that the majority of K-2 teachers give students between 180-239 minutes of recess, while 3-5 teachers as well as 6-8 teachers give students 120-179 minutes. The lowest percentage (9%) of participants responded that their students only receive 0-59 minutes of recess, or approximately 10 or less minutes daily. See figures 3-5 for the full results of this survey question.

Figure 3
Weekly Recess Minutes for Elementary Students

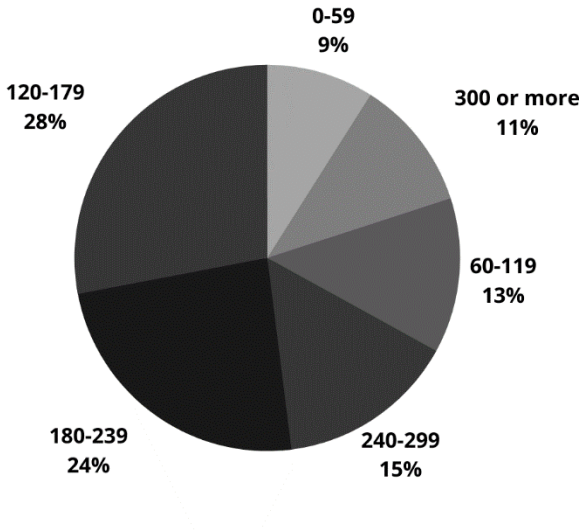


Figure 4
Recess Minutes By Grade Level

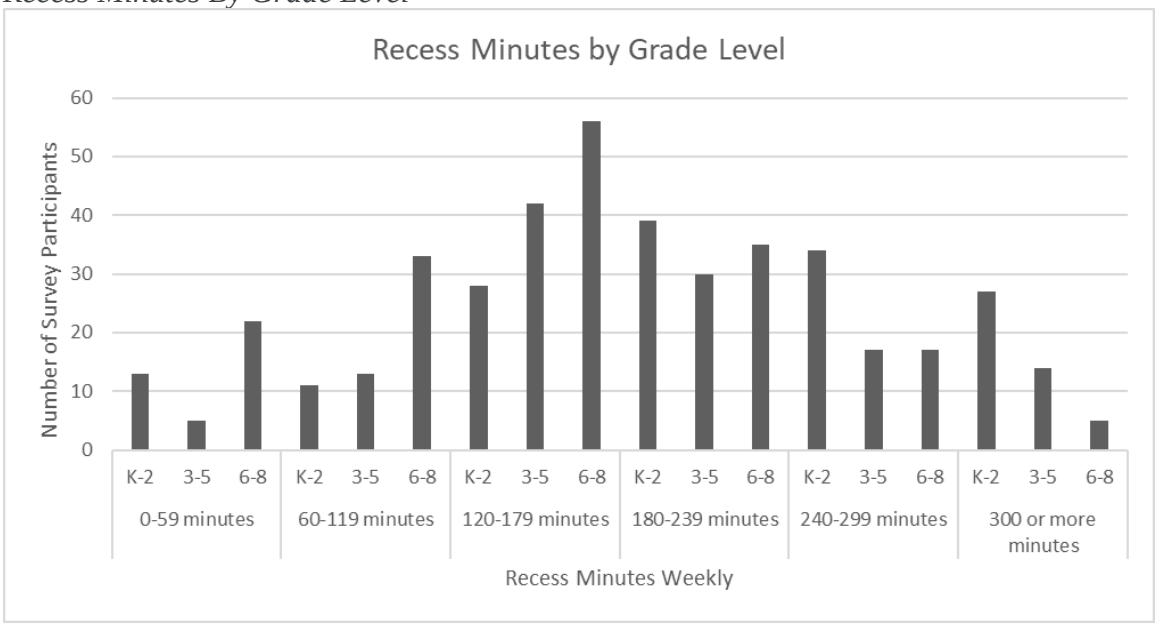
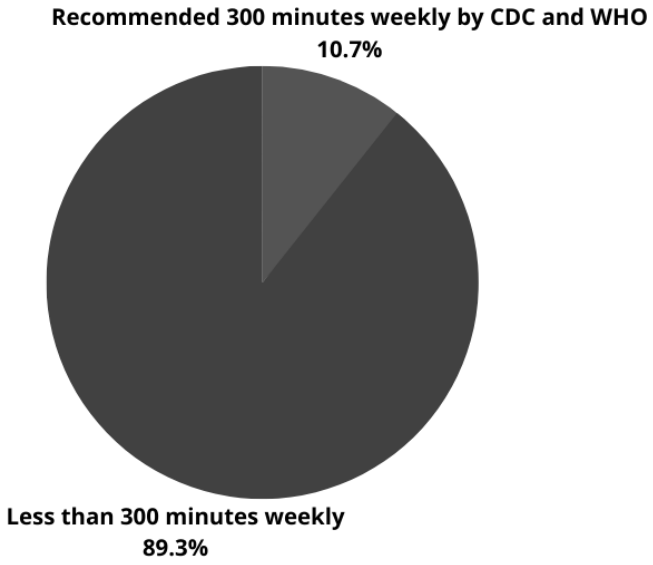
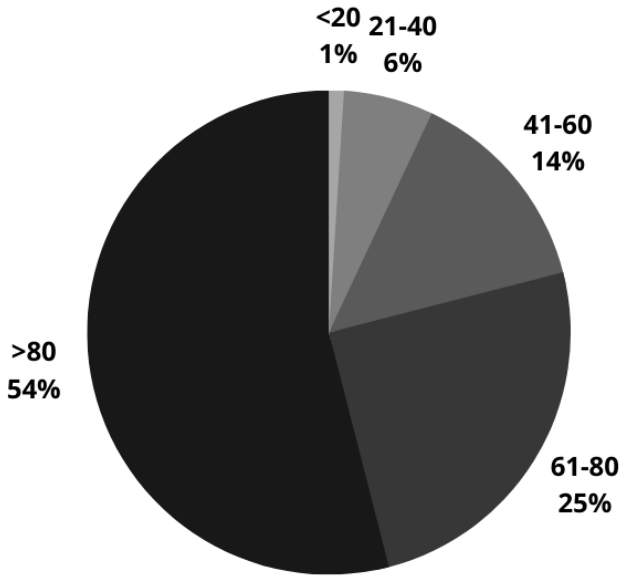


Figure 5:
Minutes of Weekly Recess Given Compared to Daily Physical Recommendations by the WHO and CDC



The next question that participants were asked was subjective as each teacher may hold a different viewpoint on what "active" recess might look like. Teachers were asked to choose a percentage of their students that they felt were regularly "active" at recess. The majority (54%) of teachers responded that they felt more than 80% of their students were regularly active at recess. See figure 6 for a complete summary of these responses. There is also the understanding that students may have additional time in the school day beyond recess minutes in which they are invited, encouraged, or told to do something physically active.

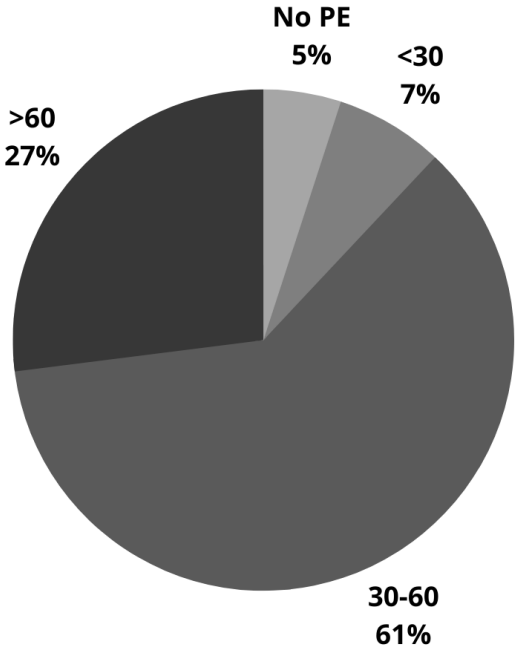
Figure 6
Percentage of Students Regularly Active at Recess



Note: The top numbers refer to the percentages of students that teachers surveyed said were physically active. The bottom number is the percentages of the participants who responded to the different answer choices on the survey.

Next, participants were asked another key question to discover how much physical activity students get regularly. Teachers were asked to respond with how many minutes of physical education class were taught to their students in a given week. 61% of teachers responded that students receive between 30 and 60 minutes of the class weekly. Only 5% responded that they do not teach physical education, leaving the other 95% of teachers who hold at least one physical education class weekly. Since 67% percent of teachers responded that students receive less than 60 minutes of physical education weekly, it is likely that a majority of these teachers have only one physical education class weekly. 27% of teachers have more than 60 minutes each week dedicated to physical education, or most likely two or more days each week. Results to the survey question are shown in figure 7.

Figure 7
Minutes of Physical Education Taught Weekly



The recommendation from SHAPE America and the National Association for Sport and Physical Education is for elementary students to receive 150 minutes of physical education class and for middle school students to receive 225 minutes each week. Figure 8 shows how many minutes of physical education WELS teachers are giving compared to these recommendations.

Figure 8 shows the breakdown of how many minutes of physical education class are taught in WELS schools by grade level. The results show that the majority of teachers teach physical education 30-60 minutes each week. However, figure 9 shows that teachers of grades 6-8 are split evenly in teaching physical education class 30-60 minutes and teaching for more than 60 minutes weekly. K-2 teachers are very widespread in how many minutes of physical education class, with teachers represented in all categories from zero minutes to more than 60 minutes weekly.

Figure 8

Minutes of Physical Education Taught Compared to National Recommendations

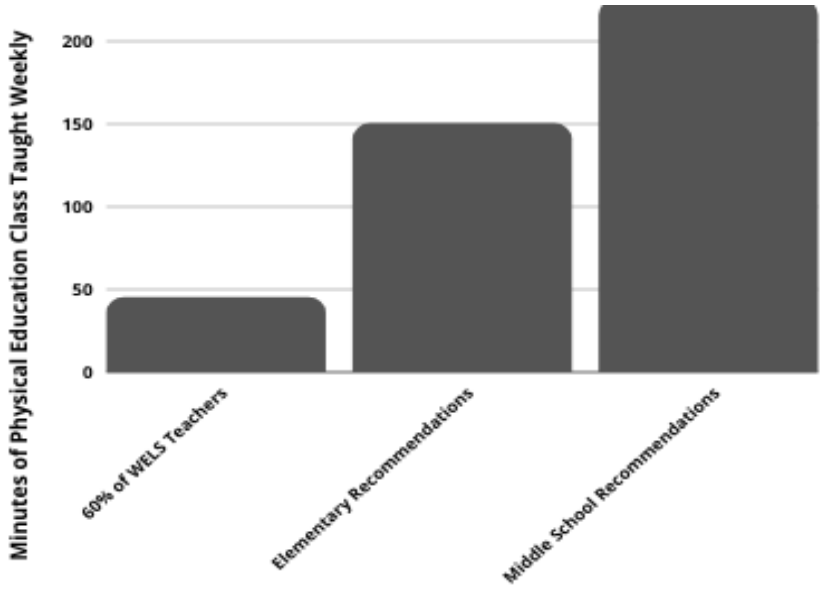
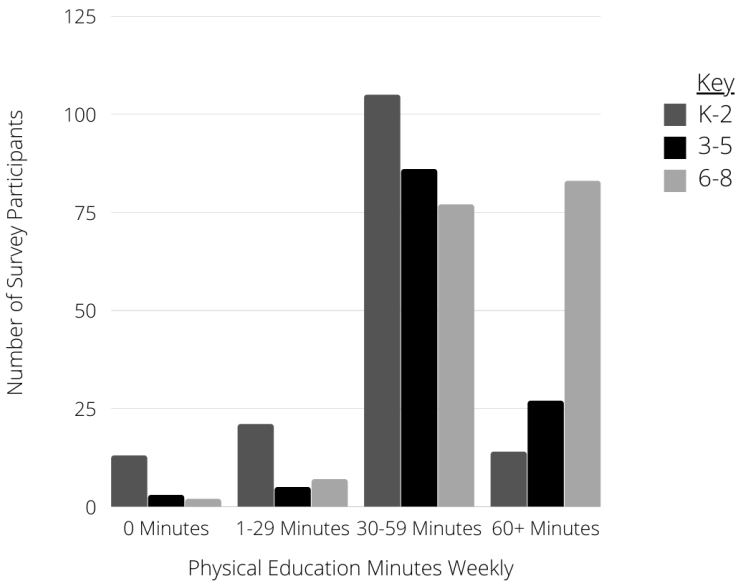


Figure 9

Minutes of Physical Education Taught by Grade Level

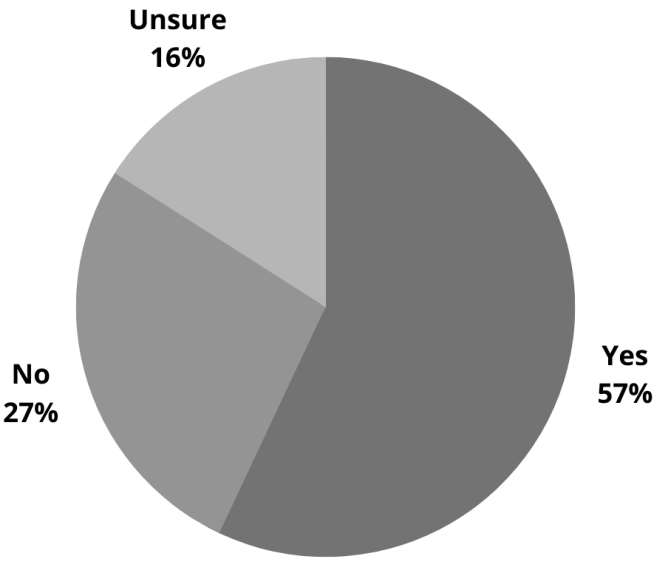


Finally, teachers were asked their personal feelings on how they felt about their own students and the amount of activity those students receive on a regular basis. While the majority of teachers (57%) did feel that students receive adequate time for physical

activity, 27% did not, and 16% of teachers were “unsure” how to respond. Data from this survey question was gathered to see if what WELS teachers feel is adequate physical activity matches with what the national guidelines suggest for student activity. Results are in figure 10.

Figure 10

Percentage of Teachers Who Feel Their Students Get an Adequate Amount of Daily Physical Activity



2. To what level are Wisconsin Evangelical Lutheran elementary teachers (K-8) involved in teaching nutrition education to their students?

Three of the questions on the survey were asked to get a clearer picture of just how much about nutrition and healthy eating habits is taught in WELS elementary schools as part of the normal school day. In order for students to develop healthy lifestyles, it is important for them to be physically active. However, it is just as important for students to understand what it takes in their daily eating habits to remain healthy.

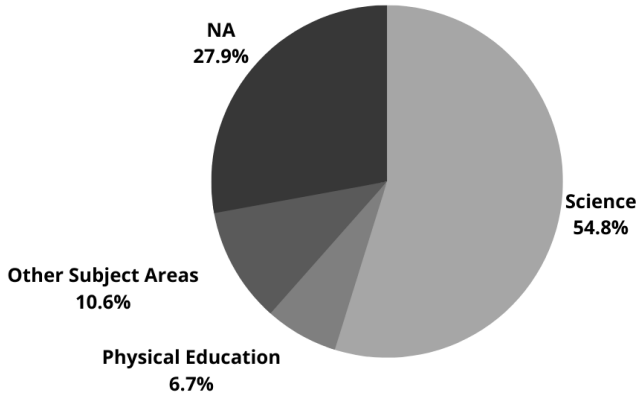
The first of these three survey questions asked teachers to respond if they do or do not have a curriculum at their school to assist in teaching health and nutrition. In response

to this question, 80% responded that they do have a curriculum to use to teach health and nutrition. While this high percentage is encouraging, it does not guarantee that teachers who have this curriculum use it regularly or the way it was intended.

Participants were then asked in what subject area they were addressing the topic of health and nutrition, whether in science, physical education, or in another subject area. This question was asked to gain an idea of when and how often this type of educational content would be taught. The topic of health and nutrition could be directly tied to either science or physical education or in both of these subject areas. The results of this survey question are shown in figure 11.

Figure 11

How Health and Nutrition is Incorporated into the School Day



The last question on the topic of health and nutrition asked participants to respond with how many individual lessons on health and nutrition were taught throughout the entirety of the school year. This question was worded differently than the others, as it was meant to look at a full year of teaching as opposed to a day or week. The reason for this change was in assumption that the topic of nutrition may be covered at any given time during the school year, but most likely is not taught regularly for the entirety of the year.

National recommendations are for elementary students to receive 30-50 hours of nutrition instruction each year, and 50 or more hours to result in long-term life changes. While 80% of teachers in an earlier survey question responded that they do have a nutrition and health curriculum, 59% of WELS teachers responded that they only teach 1-5 individual lessons on health and nutrition during the course of the entire school year. The majority of teachers in all grade levels indicated that they teach one to five lessons on nutrition each year. This is at least 25 lessons short of the recommendation, and that is with the assumption that the classes indicated on the survey are approximately an hour each. See figures 12 and 13 for the full results.

Figure 12

Number of Lessons on Healthy Eating Habits and Nutrition Taught Per Year

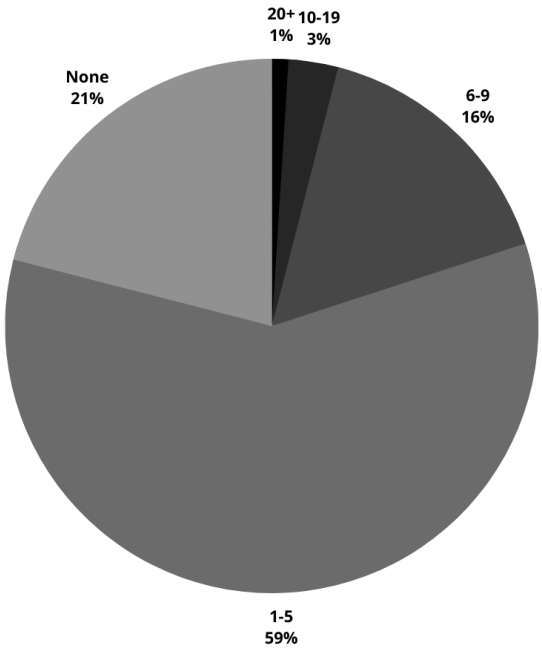
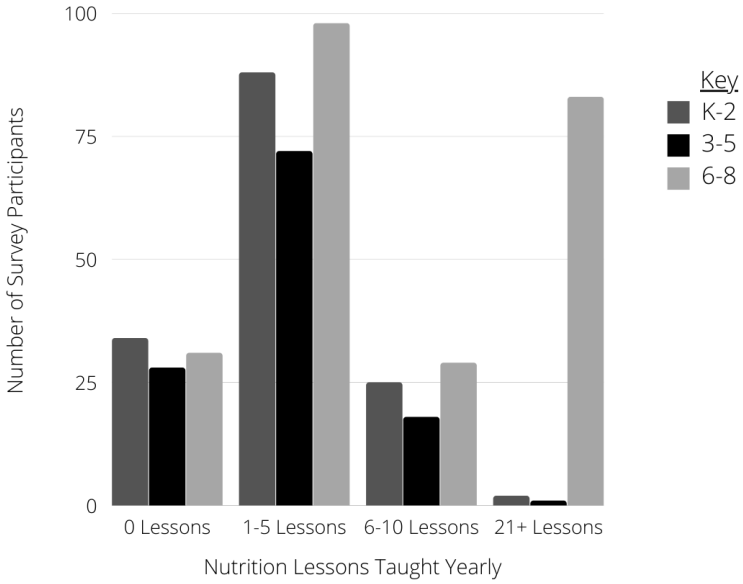


Figure 13
Yearly Nutrition Lessons Taught By Grade Level



The final questions asked the participants to select the school in which they teach, the WELS district their school is in, and the grade level(s) they teach. Figure 1 displays the breakdown of participating teachers in each grade level. The results show a good balance of participants from all grade levels. Figure 2 displays the percentages of teachers responding from each of the WELS districts. All districts had at least one representative complete the survey. Most of the surveys came from the Midwest region of the United States. The reason for this is the vast difference in number of WELS schools in the Midwest compared to other regions in the United States. 215 of the 282 different WELS schools had at least one teacher participate and submit the survey.

Summary

The results from the survey show that there are many WELS teachers who are dedicated to helping their students be physically active and educated on the benefits of nutrition and of living a healthy, active lifestyle. When looking at the data from the

survey, it can be seen that while WELS schools are providing their students with significant amounts of time to be physically active, both through recess time and physical education class, the schools fall well short of the recommendations for teaching lessons on health and nutrition.

Chapter V: Summary, Conclusions, and Recommendations

Introduction

The health of elementary students should be a high priority for all elementary teachers. WELS elementary students are certainly not exempt from experiencing health challenges along with other children across the United States. Health experts can provide suggestions as to how much physical activity and how much health education elementary students should receive to keep them growing and developing healthy lifestyles. Teachers have a role to play. With students being under the care and instruction of their teachers for much of the day and much of the calendar year, teachers have an opportunity and privilege to get involved in matters related to student health.

Summary of the Results

The results show that teachers across the WELS are taking time out of the busy school day to instruct and encourage their students to be healthy and physically active. However, in a few cases, WELS teachers fall short of the national guidelines put in place to promote student health.

The first set of data shows the amount of time WELS teachers spend giving their students recess and instructing them through physical education class. Teachers were asked how many minutes of recess their students receive weekly, and the results were very wide-spread, with the majority of teachers giving their students 120-239 minutes of recess weekly, or between two and four hours. For the teacher that gives her students 180 minutes of recess each week, students are receiving approximately 36 minutes each day. However, there were also 9% of teachers surveyed who said their students get less than an hour of recess each week and 11% who said their students received more than five

hours of recess each week! A 2000 study reported that 29% of K-5 schools in the United States reported having no scheduled recess time (Story, et. al., 2006)

The minutes of recess given from teacher to teacher varied greatly. However, it is also important to understand that not every student is being physically active during any given recess period. 54% of the WELS teachers surveyed said that they felt that more than 80% of their students were physically active during recess.

The World Health Organization suggests that children should be physically active for 60 minutes each day. Even if students receive less than the full 60 minutes for recess each day, there are other times and opportunities for students to be physically active. These times would include physical education class, after-school sports, and activities done at home.

Physical education class offers students additional opportunities to be physically active during the school day. Surveys showed the majority (61%) of WELS elementary teachers teach physical education for 30-60 minutes each week. Only 5% of teachers responded that they do not teach Physical Education class at all. A 2000 study reported only 50% of schools require physical education in Grades 1-5, and only 25% in Grade 8 (Story, et, al., 2006). Although many WELS K-8 teachers teach physical education class, they fall short when compared to the national guidelines. SHAPE America and the National Association for Sport and Physical Education recommend that elementary students should receive 150 minutes of Physical Education weekly, and that middle school students should receive 225 minutes (Elrick, 2018).

Another key component in helping students be as healthy as possible is to teach them about the foods that they eat and what changes they can make to eliminate some of

the unhealthy food choices. 80% of WELS teachers surveyed said they have a curriculum for teaching health and nutrition. However, in a follow up question, teachers reported that they do not spend a significant amount of time on teaching health and nutrition. In fact, 59% of teachers surveyed responded that they only teach one-five lessons on the topic each year! This is much lower that the recommendations. One report suggested that students need 50 or more hours of health instruction to result in any long-term changes (Perera, et. al., 2015). Another report said that students should get 30-50 hours of food and nutrition education each year. However, on average, teachers are spending merely 4.5-13 hours on the topic each year (Koch, et. al., 2020). WELS school teachers may be spending even less time than this, with the majority of teachers indicating that they teach nutrition and health between one and five lessons each year.

It is clear that WELS elementary teachers could dedicate more time to instructing their students about food and nutrition. Teaching the topic can be implemented into a pre-existing class, such as physical education or science. When surveyed, 53% of teachers said they teach on the topic of healthy eating as part of science class. 7% of teachers said they teach healthy eating as part of physical education.

Even if teachers are not spending nearly enough instruction time on the subject of healthy eating and nutrition, a study found that 97% of teachers feel that nutrition education is very to somewhat important (Perera, et. al., 2015). However, finding the time in the school day for teachers to address the topic can be a huge challenge.

Conclusions

The topic of the literature review was the health of elementary students. The goal of the review was twofold: to see how much elementary teachers across the United States

are currently doing in assisting their students to become healthier and to see how that compares to the national guidelines and recommendations.

1. How much physical activity do children in Wisconsin Evangelical Lutheran Synod elementary schools (K-8) receive?

Elementary teachers differ greatly in how much recess and physical education they build into their daily or weekly schedules. There are many recommendations on how much physical activity children should get, but many say that the goal should be for students to get 60 minutes of at least moderate exercise each day. Having 60 minutes for recess daily also does not guarantee that all children involved are physically active for the entirety of their recess. The same is true for physical education class. It can be challenging, especially for teachers with large class sizes, to ensure that all students are physically active at any point in time during a physical education class.

The surveys show that WELS teachers offer a range of recess amounts and dedicate different amounts of minutes to physical education class. 52% of those surveyed schedule 120-239 minutes of recess weekly. The midpoint of this range is 180 minutes, which averaged over a five-day school week, would be 36 minutes. While this number falls short of the recommended 60 minutes, this does not account for physical education minutes, after school sports, or other forms of daily exercise. Physical education minutes are also more difficult to average, as most schools may have only one or two days each week scheduled for physical education instruction. Overall, 57% of the WELS teachers surveyed said they felt their students received an adequate amount of physical activity during the school day to help them lead a healthy lifestyle.

2. Are Wisconsin Evangelical Lutheran elementary schools (K-8) involved in teaching nutrition education to their students? If so, how often and in what ways?

Elementary students must find opportunities for exercise to maintain good health and avoid the many challenges that come with inactivity, one of the most common being obesity. However, just as important is for students to understand food and nutrition and what will lead to good health and what may cause poor health. While science and physical education are classes common to nearly every elementary school, the topic of nutrition is one that is rarely scheduled as its own subject area, and as a result, does not receive the education time that is needed. The teachers surveyed were asked when the topic of food and nutrition is taught, and 53% of participants said the instruction would come as part of science class.

It is suggested that elementary students should be receiving between 30-50 hours of food and nutrition education each year to result in long-term changes (Perera, et. al., 2015). This could be accomplished by teachers teaching one hour-long class each week and the recommendations could be exceeded by those teachers adding a second-hour long class each week. However, a recent study found that elementary students are only getting 4.5-13 hours of nutrition education each year. WELS teachers also fall well short of the recommendations. 59% of the teachers surveyed said they only teach 1-5 lessons on healthy eating habits and nutrition each year. 21% said they do not teach a single lesson on the topic.

WELS elementary teachers are giving their students adequate time and opportunities to be physically active, through recess, physical education classes, and

after-school sports. While 79% of WELS teachers do, in some amount, instruct their students on healthy eating habits and nutrition, the time dedicated appears minimal. Other subject areas are taking time and priority.

Recommendations

There are a few recommendations along the topic of student health that would be beneficial to involve further and deeper study. The first recommendation is to gather more concrete data on how much physical activity American children get on a daily basis. This would then include recess, physical education class, and all other forms of exercise which may not show up in recent studies on the topic. If the guidelines are for children to make sure they get at least 60 minutes of physical activity daily, it would be nice to have a number that is comprehensive in involving all forms of physical activity done throughout the day.

Along the same line of thought, research could be done to find out how many children get their 60 minutes of physical activity during the school day and how many are supplementing the activity at school with other forms of exercise outside of school.

A longitudinal study would be beneficial to conduct for those schools and teachers out there who regularly teach about healthy eating and nutrition. Much research has been done to show the negative health effects of not eating healthy, nutritious food. Extensive research has also been done to see the negative health effects on children who live a sedentary lifestyle. However, it would really help to be able to also see the positive effects of teachers putting in the time to keep students physically active and teaching them the value of healthy eating habits. Would teaching 30-50 hours on nutrition each year lead to healthier children? How long might these healthy habits last?

There are also some recommendations for elementary teachers across the country. First, teachers should take a deeper look at their daily schedules and determine if it would be feasible to add any extra time to dedicate towards matters of student health. This may be something to look at before a new school year, as others including a school principal may need to be involved. Teaching students the core subjects will always be a priority, but why not make student health a priority too? Is it possible to add either more physical education or more health and nutrition classes?

Secondly, teachers should look to see what is available. There are many resources available to help teachers as they look for ways to improve student health. There are free resources available that can be found through spending minimal time searching on the internet. If the issue in not spending the time on the topic of student health is related to lack of resources, surely this issue is easily fixed.

Thirdly, involve the parents. To assure greater success, provide the information and communication necessary that parents can also valuably assist in creating healthier, happier children. This can be done in several ways, including creating newsletters, hosting events at school, or sending activities home for families to work through together.

Finally, teachers can continually remind their students that they care about them, through the kind words they use to the dedicated, planned out daily instruction. See the students not only as students, but as children of God. And as children of God, we are a close-knit family. God be with you and bless you as you teach God’s children!

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Appendix A: A Letter to WELS Called Workers

Dear fellow called workers for Christ,

Are your students matching the fitness level trends of children in the U.S? I'm conducting a study to determine how Lutheran schools are encouraging healthy habits in their students. The results of the study can inform policy and practice in Lutheran schools. As a teacher myself, I am reminded and motivated through the words of Paul in 1 Corinthians 6:19-20, “Do you not know that your bodies are temples of the Holy Spirit, who is in you, whom you have received from God? You are not your own; you were bought at a price. Therefore honor God with your bodies.”

Please consider taking the attached survey and assisting me as I look to better assist our students and God’s children. The survey will take no more than 5 minutes! Please complete the survey by **Monday, February 21**. Thank you so much!

Here is a link to the survey

God’s blessings on the remainder of your school year!

In Christ,
Andrew Olson

Appendix B: Google Form Survey

1. How much recess, in minutes, does your class get weekly?
    a. 0-59 minutes
    b. 60-119 minutes
    c. 120-179 minutes
    d. 180-239 minutes
    e. 240-299 minutes
    f. 300 or more minutes

2. What percentage of your students would you say are regularly active at recess? (Students sitting or standing around and talking would not be considered as active.)
    a. Less than 20%
    b. 21-40%
    c. 41-60%
    d. 61-80%
    e. More than 80%

3. How much physical education class, in minutes, does your class get weekly?
    a. 0-No physical education class
    b. Less than 30 minutes
    c. 30-60 minutes
    d. More than 60 minutes

4. Do you feel like the time that students spend being physically active during the school day is adequate to help students lead a healthy lifestyle?
    a. Yes
    b. No
    c. Unsure

5. Does your school have a curriculum for teaching health and nutrition?
    a. Yes
    b. No

6. Is the topic of nutrition and healthy eating habits addressed in a core subject area at all during the school year?
    a. Yes, in science
    b. Yes, in physical education
    c. Yes, in another subject area
    d. No

7. How many lessons or class periods do you spend on healthy eating habits and nutrition each year?
    a. None
    b. 1-5
    c. 6-10
    d. 10-20
    e. 20 or more

8. What grade level do you teach? If you teach a single grade, select the grouping your students are in. if you teach in multiple categories, choose the category you spend the majority of you time teaching.
    a. K-2
    b. 3-5
    c. 6-8

9. What is the name of your school?*

*Note: All WELS K-8 schools were listed alphabetically by name and then by city.
*Note: The survey was retyped in Microsoft Word, as it was originally created and sent using Google Forms.