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Implementing Nutrition Education During Advisory Periods to Decrease Obesity and Increase Students' Social Emotional Well-Being

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Implementing Nutrition Education During Advisory Periods to Decrease Obesity and Increase
Students' Social Emotional Well-Being

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Northwestern College

A School Improvement Project Presented
in Partial Fulfillment of the Requirements
For the Degree of Master of Education

Abstract

Childhood obesity rates are at an all time high, and mental health issues are rising every day. Recently, Carl Sandburg High School has seen a steady increase of the number of students' with high Body Mass Index (BMI) and mental health struggles. This school improvement plan addresses the impact and role the school environment can have in decreasing students' BMI and increasing students' quality of life. The plan contains information on developing a nutrition education intervention program, as well as making changes to the school breakfast and lunch program and the food choices it provides students.

Keywords: nutrition education intervention, mental health, school food choices, healthy eating, school breakfast program

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Implementing Nutrition Education During Advisory Periods to Decrease Obesity and Increase Students' Social Emotional Well-Being

Weight loss interventions offer the potential to improve mental health- overall quality of life, depression, and perceived stress (Payne et al., 2019). Obesity and mental health are two of the most prevalent concerns facing adolescents today. Based on a study completed by Mendoza-Munoz, et al., (2020), more girls than boys are inactive and more adolescents than children live sedentary lifestyles. The number of adolescents with sedentary lifestyles has grown in recent years due to new technology. A study completed by Payne et al., (2019) found that participants' quality of life improved after only three months of a nutrition education intervention. With the rising numbers of adolescents struggling with mental health and obesity, a nutrition education program has the potential to improve their quality of life, decrease stress levels and decrease their BMI (body mass index).

The problem is that obesity in adolescents is causing social problems, poor self-esteem, depression, negative mood states, eating disorders, attention deficit hyperactivity disorder, and internet addiction (Reinehr, 2018). Many districts in Illinois do not currently have any nutrition education outside of the student health classes. While many high schools do have fitness and nutrition classes, the classes are often not a requirement and are only offered at the junior and senior level. Nutrition intervention and information must begin sooner. As a society, there has been a significant increase in the number of student hospitalizations due to mental health concerns. While districts provide students with monthly social-emotional lessons, there needs to be a greater emphasis on how nutrition and exercise impact mental health and wellbeing and how students can improve their quality of life through their nutrition and physical fitness. Literature is lacking in the area of how additional, intentional nutrition education can impact adolescents and set them up

for success as adults. A gap in the literature exists due to the lack of focus on high school students and the impact healthy eating and exercise habits have on their mental health and weight.

The purpose of this school improvement plan is to decrease student obesity and increase social-emotional wellbeing by implementing a nutrition education program during advisory periods. The knowledge from this study will help communities contribute to students' positive mental health, nutrition education, and decreased obesity. "Weight loss interventions have also been shown to lower stress levels and lessen depression" (Payne et al., 2019, p. 2). Throughout this plan, the purpose is for Carl Sandburg High School to create a plan to create change in their students BMI and mental health by implementing an expanded breakfast program, providing healthy food choices, and implementing a nutrition education program. By providing more information and data, there can be more support for the effectiveness of nutrition education. Research for this Capstone was found in DeWitt Library. The types of research found were peer-reviewed journals that were written in the past ten years. A review of literature was conducted to gain information regarding nutrition education and mental health.

Review of the Literature

School Nutrition

Nutrition in schools is an area that impacts students daily. With the implementation of healthier food choices, comes a price tag that is typically higher. In the study by Shanafelt et. al, (2019), 10 high schools expanded their breakfast program by moving breakfast outside of the cafeteria, providing a grab and go option, offering a second chance breakfast (after the first period,) and having student-led marketing campaigns. The cost of expanding the breakfast program was also taken into consideration and quantitative data was taken. The results revealed that growing the school breakfast program can be cost effective and students can reap the academic and health benefits of the expanded breakfast program (Shanafelt et al., 2019, p. 417). This study proves that providing healthier food options and expanding breakfast programs do not always mean a higher price tag and can be implemented and successfully stay within the school's budget.

Cluss et al., (2014) researched nutrition improvements during lunch in school cafeterias. In this study, data were collected at seven school cafeterias in Pennsylvania to determine if serving healthier lunches impacts the number of students who buy the school lunch. Based on quantitative data collected for one week every year for seven years, Cluss et al., (2014) found that healthier school lunches were purchased when healthier menu items were offered and when less healthy foods were eliminated from the menu and the number of students who purchased lunch remained the same regardless of food options. Cluss et al., (2014) and Shanafelt et al., (2019) similarly produced results that prove that providing healthier food options at both breakfast and lunchtime do not decrease sales and can remain within budget. In other words,

providing healthier food options does not impact the school budget or the number of students who buy breakfast and lunch food during the school day.

In the study by Gosliner (2014), 7th and 9th grade students from 31 schools in California were given a longer lunch period, better fruit quality, salad bar option and were involved in food decisions in order to increase the students' fruit and vegetable consumption. Although the cost of implementation was not assessed, one can assume based on findings from Cluss et al., (2014) and Shanafelt et al., (2019), these changes will not impact the number of student participants and will allow schools to remain within their budget.

Similar findings were discovered by Hakim & Meissen (2013) in regard to consumption of fruits and vegetables and the number of fruits and vegetables that were wasted during school lunch periods. Hakim & Meissen (2013) created a "choice" cafeteria in a school serving students kindergarten through 8th grade. During the study (Hakim & Meissen, 2013), the consumption of fruits and vegetables were compared between a choice lunch period and no choice lunch period. The results show that the "choices cafeteria intervention produced an average daily increase of 15% of fruits and 15.6% of vegetables" (Hakim & Meissen, 2013, p.153). Similarly, to Shanafelt et. al., (2019), and Cluss et al., (2014), students increased their consumption of fruits and vegetables when given choices. In other words, when given a choice of fruits and vegetables, students are more likely to choose fruits and vegetables they enjoy and will consume them instead of wasting.

Similar findings by Cvjetan et al., (2014), regarding the association between school nutrition climate and students' eating behaviors and BMI were also found. Cvjetan et al., (2014) gave a qualitative and quantitative questionnaire to 9,107 students, grades 9-12 in New Zealand

between March-October 2007. The questionnaire addressed the students' junk food consumption and their current BMI. Cvjetal et al., (2014) found that there was a positive association between the school's nutrition climate and the students' consumption of fruit and vegetables. However, Cvejetal et al., (2014) found no association between school nutrition climate and students' junk food consumption and BMI. These findings show that the students' widespread access to junk food outside the school setting directly impacts their BMI and junk food consumption.

Unfortunately, schools cannot control what happens once the students' leave the school environment; however it is imperative that while in school, the students are provided with several healthy food choices to decrease BMI and decrease the amount of junk food consumed during school hours.

Nutrition Education & Interventions

Implementing a nutrition education intervention is easier said than done. Porter, Koch & Contento (2018) interviewed New York public school teachers to find out their perceptions and their implementation of their nutrition education programs. The results of the qualitative and quantitative interview found that "when creating and implementing a nutrition education program, it requires the four domains- building motivation, choosing programs, developing capacity and legitimizing nutrition education" (Porter, Koch & Contento, 2018). By including the four domains, it can create an environment that is successful for a nutrition education program.

When implementing a nutrition education program, some might forget that the teachers are the foundation of that program. Hall & Albrecht (2016) completed a study regarding Nebraska teachers' experience with nutrition education. Findings from Hall & Albrecht (2016) show that teachers believe "their roles in combination with the interactive nutrition curriculum

positively influence students” (p. 139). Educators feel that their role in nutrition education is to be educators, coaches and role models. Like many teachers, some of the interviewees felt that it was a struggle to prioritize core subject areas instruction and nutrition instruction. While nutrition education is important, it is necessary that we provide teachers with proper training and ensure there is time to teach all subject areas necessary.

An example of an effective nutrition education intervention is an intuitive eating program. Healy et al., (2015) completed a study of 48 high school students from the Midwest that completed an intuitive eating program for 50 minutes a day for 10 school days. After completing the intuitive eating program, students showed improvement in their overall healthy eating attitudes (Healy et al., 2015). While this study showed that the intuitive eating intervention provided students with healthier eating attitudes, more studies must be completed to determine if the improvement is sustained and impacts the students later in life.

Melnyk et al., (2015) completed a study measuring the efficacy of the COPE Program (cognitive-behavioral skills building) with adolescents from 11 high schools in the Southwest United States. Quantitative research was used, as the adolescents were given a self-reported depressive symptoms scale (Beck Youth Inventory II) and a stadiometer (height) and Tanita scale (weight). The COPE Program consisted of 15 sessions, once a week for 15 weeks and were then provided a follow up after 12 months. The Program provided students with a positive impact on physical activity, body mass index (BMI), psychosocial outcomes and academic grade performance. Overall, based on the findings of Melnyk et al., (2015), the COPE program is an effective intervention and positively impacts students in decreasing feelings of depression and improving students’ BMI.

Another intervention that was found to be successful, targeted vegetable consumption among children. Wall et al., (2012) completed a quantitative study among 4th graders at 200 different elementary schools. The intervention focused on the students' intake of vegetables and their attitudes surrounding vegetables (Wall et al., 2012). Students were given food preference, attitude, knowledge and self-efficacy surveys and participated in a four lesson vegetable focused intervention over the course of four months (Wall et al., 2012). Wall et al., (2012) found that "classroom interventions that include exposure to new vegetables, and new ways to eat familiar vegetables, could positively impact students' preferences and thereby increase vegetable variety for family meals" (p.43). This is another example of an intervention that positively impacted students and improved their nutrition and their eating habits surrounding healthy foods.

Another intervention that targeted fruit and vegetable intake was completed by Gold et al., (2017) in North Dakota with 3rd grade students across 26 different schools. Gold et al., (2017) created a control group and an intervention group to establish the effectiveness of the Go Wild With Fruits and Veggies! Extension curriculum that focused on the fruit and vegetable intake of students. This intervention took place over seven weeks and included seven lessons about taste testing, classroom nutrition activities, movement activities, take home challenges and parent newsletters. Students were also given pre and post surveys to complete. Gold et al., (2017) found that when a nutrition education program is combined with taste testing of healthy foods (ie. fruits and vegetables), students are more likely to consume more fruits and vegetables than those who do not taste test healthy foods. This provides another example of the benefits of nutrition education programs and how taste testing can positively impact the students' healthy eating.

Sugar sweetened beverages have been a major contributing factor to childhood obesity in the United States (Isoldi & Dolar, 2015). Isoldi & Dolar (2015) investigated how to reduce the intake of sugar sweetened beverages in children in order to decrease their risk of obesity. During the study completed by Isoldi & Dolar (2015), children (ages 5-14) attending a summer boys and girls club program attended a two hour workshop that addressed the sugar content and health risks of sugar sweetened beverages and provided them with hands on experiences surrounding those beverages, as well as alternative drink choices. Isoldi & Dolar (2015) found that based on a survey about the amount of sugar sweetened beverages consumed daily, children displayed an increase in knowledge regarding the amount of sugar in beverages. Additional research should be completed to assess whether or not information was retained and the healthy choices were sustained long term. However, Isoldi & Dolar (2015) proved that educating students about sugar sweetened beverages can be beneficial and impactful.

Another way that was studied is in regards to sports nutrition education. Patton-Lopez et al., (2018), completed a study that targeted the impact of a sports nutrition education and life-skills intervention that targeted sport nutrition knowledge, student attitudes and beliefs and dietary behaviors relevant to sport nutrition. High school soccer players (ages 14-19) in Oregon participated in the WAVE program (research, education, and extension)- a obesity prevention intervention. The students were given three pre and post health assessments, in person sport nutrition lessons, team-building workshops and experiential learning opportunities. Patton-Lopez et al., (2018), found that athletes in high school are motivated to learn and improve their diet and overall benefited from team-based nutrition education. Although, future research regarding the messages being reinforced with support at home, school and in the athletic setting would be beneficial as well. Similar to previous nutrition interventions, Patton-Lopez et al., (2018) found

their intervention to be successful. In other words, targeting student athletes and providing direct instruction in sport nutrition can both motivate students and increase their healthy eating habits.

Wingert et al., (2014) completed a study that targeted how student nutrition education is affected by experiences designed to integrate student learning across disciplines. College students in Asheville, North Carolina completed Food for Thought Cluster classes and another group of college students were in control groups. All of the students that participated were a variety of different majors. Wingert et al., (2014) used rubrics to determine the students' understanding of food and food systems and their ability to make informed decisions about food choices. The results of the research found that students that were exposed to the Food for Thought program performed better on their rubrics, which shows that students learned and retained information regarding nutrition education and were motivated to perform well.

Adolescent Eating Behaviors and Mental Health

In the study completed by Rossa-Roccor et al., (2021), 339 university undergraduate students at the University of British Columbia in Canada were assessed to find the association between diet and mental health wellbeing. Qualitative and quantitative research was completed to determine the students' mental health (anxiety, depression, quality of life) and dietary intake. The students at the University of British Columbia self-reported their depression, anxiety and quality of life; as well as completed a dietary screener and reported on their own personal dietary preferences. Rossa-Roccor et al., (2021) found that “the junk food component score was positively associated with depression and anxiety” (p. 19). In other words, depression and anxiety are more prevalent when an unhealthy diet is present.

Heo et al.,(2016) completed a study that involved males and females from 14 different high schools in New York City (grades 9-12) to determine the effectiveness of the HealthCorps

School Wellness Program and the effect it has on nutrition, mental health and physical activity knowledge and behavior. The specific curriculum (HealthCorps) included lessons about physical fitness, developing and maintaining healthy eating habits and mental resilience. In addition, HealthCorps provided students with demonstration events (ex. festivals, health fairs, etc.). Each student involved in the study attended a nutrition intervention and completed a survey about their nutrition knowledge. According to the findings, the HealthCorps curriculum increased the students' mental health, physical activity and nutrition knowledge. Similar to Rossa-Roccor et al., (2021), there is a positive correlation between direct instruction in the area of healthy eating and students' quality of life, depression, and anxiety. By providing students with the resources and tools needed to develop healthy eating habits, a decrease in anxiety and depression can be observed.

“Adolescents who are overweight or obese often struggle with behavioral health issues such as low body satisfaction, decreased self-esteem, increased anxiety, increased risk of substance abuse and more depressive symptoms compared to their average weight peers” (Dupart et al., 2019, p.178). In the study completed by Dupart et al., (2019), twelve 14-18 year olds in North Carolina attended a nurse-led and teacher-assisted nutrition and physical activity education and exercise class twice a week for 45-60 minutes for the duration of 7 weeks. Some of the activities completed were walking, running, relay races, talent show, team building, tug-of-war and yoga. The classes that were completed covered topics like nutrition labels, goal setting, and sugar. Student demographic data, anthropometric measures (BMI, waist circumference, etc.), Child Health Behavior Survey, and the cost of the intervention were all assessed. The results of the intervention were that it was cost effective, and while there was a slight decrease in BMI percentile, there was not a significant decrease. Dupart et al., (2019)

found that the intervention provided may need adjustments to provide a significant decrease in the students' BMI percentile, and that further intervention would be beneficial to build upon the positive changes that were made during the intervention.

Impact of Family Involvement in Healthy Eating

In a study completed by Bhurosy & Thiagarajah (2019), 13,583 students throughout the United States, grades 9-12 were given a survey to determine how their eating habits impact the amount of sleep they get each night. The specific survey that was used by Bhurosy & Thiagarajah (2019), was the 2013 Youth Risk Behavior Survey. The data that this survey analyzed was the number of hours slept, fruit and vegetable intake, soda and milk intake, breakfast consumption and the student demographics. The results of the survey revealed that a higher intake of milk, vegetables, breakfast, and a lower intake of soda increased the likelihood of the students sleeping eight hours or more each night. In other words, a healthy diet directly impacts the amount of sleep high school adolescents get. Healthy eating and the amount of sleep a high school student gets is something that can be monitored and controlled by the students' parents. Therefore, it is imperative that parents promote healthy eating habits and adequate amounts of sleep (8 hours) to decrease their children's BMI.

Cory & Nelson (2021), completed a study that focused on the students' roles in communicating nutrition education to their parents in their home and the role the students play in connecting the nutrition education program to their home life. In Milwaukee, Wisconsin 257 third grade students and 80 parents completed a quantitative survey assessing the parents' awareness of their child's school nutrition education program, parent preferences for future nutrition education communication and if there was an impact in the snacks the parents prepared for their students based on the nutrition education program. Similar to Bhurosy & Thiagarajah

(2019), Cory & Nelson (2021) found that there is a positive impact on nutrition in the home. In other words, by having students share what they learned during their nutrition education at school in their home, they have the ability to increase parental awareness and positively impact the nutrition in their home.

In the study completed by Kumar et al., (2017), a 35 minute quantitative survey was taken by 1,992 students, grades 9-12 in Georgia to determine how youth perceive healthy eating and what are the reasons and motivators that students eat healthy foods. While students are more independent in high school (grades 9-12), their eating habits are impacted by their parents, as their parents buy food and cook food in their house. The 2013 Georgia High School Youth Risk Behavior Survey was used to determine what motivates students to eat healthy. The results of the survey revealed that the students that were motivated were motivated by their intrinsic desire to be healthy and their genuine enjoyment of the taste of healthy food. In addition, the students reported that they were most likely to find healthy foods at their homes. Similar to studies completed by Bhurosy & Thiagarajah (2019) and Cory & Nelson (2021), the students' home and parents have a direct impact on the intake of healthy food that the students have. It should be noted that only 13% of students consume healthy foods at school.

Need for Plan

At Carl Sandburg High School, their focus this year is “We.” We are a unit, we are a community, we as parents with teachers and we will succeed together. Carl Sandburg High School aims to create an inclusive, collaborative environment that focuses on the success of all students.

At District 230, the students have a 94% graduation rate, with 80% of the students that graduate from District 230 are enrolled in postsecondary education classes within 12 months of graduation (Cons HSD 230: District Snapshot, n.d.).

Carl Sandburg High School is located in Orland Park- a suburb of Chicago. Currently, in Orland Park, Illinois there are approximately 60,000 residents with an average household income of \$91,000 (Orland Park, IL Census Data USA, n.d.). Currently, the average house price in Orland Park is \$288,000. The residents of Orland Park are 83% white, 5% Asian and 4% black (Orland Park, IL Census Data USA, n.d.). A unique characteristic of Orland Park is that 16% of residents were born in a foreign country (Orland Park, IL Census Data USA, n.d.). This percent is higher than the national average (14%).

At Carl Sandburg High School, about 1,370 of the 2,800 students are male. Students at Carl Sandburg High School are diverse. At Carl Sandburg High School, white students make up 73% of the school population (Cons HSD 230: District Snapshot, n.d.). In addition, 11.9% of students are Hispanic, 6.4% of students are Asian and 5.7% of students are Black (Cons HSD 230: District Snapshot, n.d.). 4.3% of the school population are English Language Learners, and 12% receive services through an IEP (Cons HSD 230: District Snapshot, n.d.). Currently, 15.6% of students are from a low income family (Cons HSD 230: District Snapshot, n.d.).

At Carl Sandburg High School, the average number of students in a class is 23. When it comes to budgeting and average cost spent per student, both Carl Sandburg High School and District 230 are exemplary funded and are sustaining a balanced budget. An important and beneficial component of District 230 and the state of Illinois is the requirement for Physical Education classes 5 days a week for 4 years of high school. Currently at Carl Sandburg High School, students are offered 23 different advanced placement courses and 11 dual college credit classes (Cons HSD 230: District Snapshot, n.d.). Carl Sandburg High School has earned many awards including one of the top 20 high schools in Cook County, Blue Ribbon Health School, and has earned an Orland Park GreatSchools Rating of 9 out of 10. Students have the opportunity to join 45 different clubs, 19 fine arts programs, and 36 different athletic activities (Cons HSD 230: District Snapshot, n.d.).

Overall, on the ELA SAT, 40% of students enrolled in District 230 scored met or exceeded and on the math SAT, 36% of students scored met or exceeded in 2021 (Cons HSD 230: District Snapshot, n.d.). In 2019, 46% of students' ELA SAT scores were met or exceeding and 44% of students' math SAT scores were met or exceeding. Based on this data, the students in District 230 scored lower on the SAT in 2021 than 2019. This could be attributed to COVID and the instruction missed during that time. On the Illinois Science Assessment, students in District 230 scored similar to the state average. 52% of students in District 230 received a proficient score and 48% of students received a not proficient score.

At Carl Sandburg High School, parents are invested in their children's education. Based on 2021 5Essentials Survey results, 74% of teachers feel supported by the parents of the students in the building, (5Essentials Carl Sandburg High School report, 2021). Teachers currently feel

respected by parents and believe that parents are doing their best to help their children learn and at Carl Sandburg High School, there is a culture where parents and teachers are partnering in the students' education (5Essentials Carl Sandburg High School report, 2021). When programs and curriculum are being developed, 70% of teachers feel that Carl Sandburg High School has appropriately found ways for parents to participate and influence decisions being made (5Essentials Carl Sandburg High School report, 2021). However, only 63% of teachers felt that parents were active participants in their child's education (5Essentials Carl Sandburg High School report, 2021). For example, teachers feel that not all parents attend parent-teacher conferences and many parents do not contact them regarding their child.

District 230's mission is to create a community that inspires, innovates, provides empathy and leadership that "empowers young adults to impact their communities" (District 230.org). This is addressed at Carl Sandburg High School by having teachers create authentic learning experiences, responsive curriculum and by providing frequent and consistent communication between staff, parents and the community. At Carl Sandburg High School, we have created a diverse, equitable and inclusive building that provides students with social-emotional development in order to address the well-being of the whole student.

District 230 chooses to focus on the course offerings for students in order to assist students in obtaining college certifications prior to graduation and strengthen relationships between college and career pathways. Communication and engagement is an important area that District 230 aims to excel in, by finding opportunities to interact more frequently with underrepresented portions of their community in the areas of academics and co-curriculars. They strive to close achievement gaps and expand programs to address the needs of all their students (under achieving, achieving and over achieving). As a community, social-emotional learning has

been at the forefront of many conversations and District 230 aims to instill persistence and resilience in their students and provide social-emotional learning in a safe environment.

Teachers at Carl Sandburg High School are highly educated, with 86% of teachers holding a Master's Degree or higher (Cons HSD 230: District Snapshot, n.d.). In District 230, 100% of teachers were rated proficient or excellent on their most current evaluation. By obtaining a proficient or excelled on their evaluation, all teachers have demonstrated proficiency in the areas of planning and preparation, classroom environments, instruction and professional responsibilities.

School Improvement Goals

Every week, teachers meet in professional learning communities to focus on students and their academic and social-emotional performance through teacher collaboration, data review, and reflection. During these PLC meetings, teachers create SMART (Specific-Measurable-Attainable-Results Oriented-Time) goals to address teacher effectiveness and student performance.

Teachers in District 230, along with curriculum specialists have created a set curriculum for each course offered in the district. While District 230 has a set curriculum, it is ever changing as teachers implement and reflect on their instruction of their curriculum.

Currently at Carl Sandburg High School, there is currently a 35 minute intervention/advisory every day. In a typical year, students would meet with their advisory teachers on Mondays and Fridays regarding SEL, academics, assignments, and school information. On intervention days, students have the opportunity to schedule a meeting with teachers (ex. math lab, science lab) to seek additional help or to retake a test. In addition, a teacher can assign a student to a specific lab or teacher if they notice a student struggling on a specific assignment or is struggling overall in a class. If one has an A in every single class, they can use their intervention time to work on other homework. There is not at this time any collaborating or planning time regarding interventions, because every teacher can structure and run their intervention period how they choose.

The area that needs improvement and that can be addressed through this plan is the curriculum and instruction in regard to the nutrition education program implementation. The building wide nutrition curriculum and implementation is an important area to focus on due to

the high rates of obesity and health problems related to nutrition in the country today. According to the Center for Disease Control and Prevention (2021), 21% of adolescents ages 12-19 are obese. Students spend 35 hours a week in the building and it is the educators duty to do everything they can to support students' well being- both physically and emotionally.

At Carl Sandburg High School, students receive one semester of health education class throughout the students' four years at Carl Sandburg High School. During this time, students do engage with a nutrition unit curriculum. However, the unit is short and students do not always sustain the habits taught during the nutrition unit. In order to create lifelong healthy eating habits, there must be an intentional, long lasting nutrition education program in place that includes healthy eating habits and knowledge that students can sustain. The CDC (2021) conducted research that shows that eating habits are directly linked to academic achievement.

Mental health has been a concern in adolescents for many years and grows more each day. The CDC (2021) found that "1 in 3 high school students have experienced persistent feelings of sadness or hopelessness in 2019." Since 2019, these same high school students have experienced many hardships (COVID-10, remote learning) that have continued to affect their mental health. Mental health can be addressed through nutrition education and by providing nutrition education, students can begin to lead healthier, and positive lives.

Current sophomore male and female Fitnessgram data assesses the students' fitness levels. If students are in shape and have a healthy BMI, they should be able to perform within the average range. In addition, 5Essentials data provides information regarding the students' perception of the supportiveness (ex. trustworthiness, relationships) of Carl Sandburg High School.

As shown in Table 1, sophomore students at Carl Sandburg High School are currently performing in the average or above average range in all areas with the exception of the female mile time. The data shows that the female and male sophomore students at Carl Sandburg High School scored above average in the area of curl ups (female average: 42 curl ups, male average: 54 curl ups). The FitnessGram data in Table 1 can be found in Appendix A.

In Table 2, students at Carl Sandburg High School, more than half (72%) of students feel supported, safe and have positive relationships with their teachers. Further survey results show that 99% of students believe that there is positive student-teacher trust and student peer relationships. The data regarding the 5Essential Survey data in Table 1 can be found in Appendix B.

The current area of concern is the female sophomore students' mile time, as it is below the Fitnessgram Standard by 25 seconds. In addition, the male sophomore student' mile time was 14 seconds within the Fitnessgram Standard. Based on this data, as shown in Table 1, it appears that the sophomore students at Carl Sandburg High School would benefit from healthy eating habits in order to positively impact their mile run time.

As seen below in Table 2, only 50% of students feel safe at school and feel that safety is addressed. Feeling safe is directly related to mental health. It is one of the foundations of the students' wellbeing. In addition, when people feel safe, they are able to feel at peace and achieve a certain level of comfort and understanding that we cannot be harmed.

Additional data regarding students' BMI and current mental health status would be beneficial data to collect. The Fitnessgram data has BMI standards for both males and females, and would be beneficial to collect twice during each students' time at Carl Sandburg High School. Some additional data that addresses mental health would also be positive data to begin

collecting. One way to collect mental health data is the number of hospitalizations per year, and a survey given to students about their current mental health status, stress levels and self-care strategies currently used.

Plan Implementation

Based on the literature reviews completed, there are many effective strategies that can be applied to Carl Sandburg High School to increase the students' nutrition knowledge, eating habits, improve their mental health and decrease the overall obesity in the building.

One way that students can be set up for success can be by the school providing healthy food options in the school cafeteria for breakfast and lunch. In addition, students can have a breakfast grab and go option and the option to purchase breakfast after the first hour of the school day, as well as before school. By expanding the breakfast program, students have more opportunities to access breakfast with the hopes of them eating a balanced breakfast. Another way the school cafeteria can play a role in providing healthy eating choices is by giving students more fruit and vegetable choices during their lunch periods. By providing students with more fruit and vegetable options, there is a greater chance that there will be an option that they enjoy and will eat.

The most effective way to begin to decrease student obesity and increase their mental health is to provide the students with nutrition education interventions with direct instruction. Some of the nutrition interventions that have been successful provide direct teaching in the areas of sugar-sweetened beverages, healthy eating habits, mental resilience, goal setting, and reading nutrition labels. By providing students with this direct instruction, their knowledge regarding nutrition will increase with the hopes that the students make healthy eating choices.

Family involvement in healthy eating and nutrition education is another way to provide students with information and ways to make healthy eating choices that impact their mental health. By encouraging students and giving students talking points to start discussions surrounding healthy eating in the home, parents can have a direct impact on the food choices that their children are making. These food choices impact the children's mental health, as well as their physical health. Similarly, students reported that they ate healthier food at their home rather than at school. Therefore, when parents have open conversations with their children regarding healthy eating habits, benefits can be evident.

To address the problem with the timing of breakfast and the food served in the cafeteria, there must be a conversation with the food provider as to what food options and cost options. In addition, a conversation must be had with the administration to determine what the school is willing to spend on school nutrition and breakfast options.

The administration team will choose about four to five nutrition education interventions for the staff members to review and rate. In the building, a nutrition committee will be formed in order to review, test and seek information about a variety of nutrition education programs. Once the committee reviews the nutrition education interventions, they can choose their top two options and the building administration can choose which intervention the building will use. After the nutrition education intervention has been selected and approved by administration, the committee will create a presentation and present the selected nutrition education intervention to the school during a Wednesday morning meeting. During this meeting with the staff, the committee will explain how by implementing a nutrition education intervention can help students make healthy food choices, reduce their BMI and in turn improve their mental health. The staff will then be trained on the nutrition education intervention and provided with the frequency and

times that they will be providing the intervention, as well as how data will be collected to determine if the nutrition education intervention is effective.

Once the nutrition education intervention has been purchased and confirmed, a letter to parents explaining the frequency of the intervention, the summary of the curriculum of the intervention, and the purpose of the nutrition education intervention. Involving parents in this process is necessary, as parents can reinforce healthy eating habits at home and can become involved.

Assessment

The implementation of this school improvement plan should begin during the summer of 2022. During the summer, the administration team will determine possible nutrition education programs that fit into the school's budget and contact each company for additional information. During the summer, the administration team will also begin having conversations about budget for the upcoming school year and begin communications with the district's breakfast and lunch provider as to what healthy food options can be provided and the beginning steps of an expanded breakfast program.

When the 2022-2023 school year starts, the administration team will send out a survey to determine what teachers may be interested in being part of the nutrition education intervention selection committee. Once feedback is received, the committee will be developed and begin work in fall of 2022. Overall, this process should start in summer 2022 and will be completed and implemented with students by the fall of 2023.

One of the resources used will be the Health and Physical Education teachers, as they have attended direct instruction in the area of nutrition education interventions and have experience implementing and teaching students about nutrition.

Other resources that can be used are the nutrition education intervention companies. By requesting information and talking with representatives from those companies, information regarding the interventions can be learned in order to determine if it is a good fit for Carl Sandburg High School.

The administration team at Carl Sandburg High School will be a crucial part of implementing this plan, as they are the leaders of the building and they have an understanding of the current and future school budget, as well as the scheduling of the building.

The nutrition education intervention committee members are another crucial part of implementing this school improvement plan and ensuring that a reliable and solid nutrition education intervention is selected.

In addition, the school cafeteria food vendor is also a crucial resource, as they can provide food options, school breakfast and lunch program examples they have seen success in and the steps they require to implement healthier eating choices and an expanded breakfast program.

The students also play a role in the implementation of the school improvement plan. This plan directly affects the students; therefore it is important that they have input and can give feedback as to the healthy food choices that will be provided. Additionally, the students will provide feedback as to their comfortability level with their Body Mass Index (BMI) percentage being recorded and analyzed.

During the implementation process, the administration team will be responsible for analyzing the cost of implementing an expanded school breakfast program and providing more healthy food options during breakfast and lunch. Furthermore, the administration team will choose 4-5 nutrition education interventions that are cost effective and appropriate for Carl Sandburg High School. After a nutrition education intervention program has been selected by the nutrition education committee, administration is responsible for setting aside time in the fall for all staff members to be trained in the intervention. The administration team will also determine the schedule the building will use to provide the students with the nutrition education intervention.

The nutrition education committee is responsible for reviewing all nutrition education intervention programs and selecting the top choice that they believe will be most effective for

Carl Sandburg High School students. After the nutrition education intervention program has been approved and selected, the nutrition education committee will present the selected intervention program to the staff.

This plan will be monitored with Fitnessgram data that is taken by Carl Sandburg High School sophomore Physical Education teachers. Fitnessgram data will provide student BMI, mile time, push-ups and sit-ups and will compare the Carl Sandburg High School data to national averages.

In addition, 5Essentials data from Carl Sandburg High School will be used to determine the students' mental health and quality of life. When looking at the 5Essentials Survey completed by Carl Sandburg High School students, the specific heading that will provide the information needed is the students' perception of the supportiveness (ex. trustworthiness, relationships) between teachers and students at Carl Sandburg High School.

A barrier to the success of this plan is the student BMI data. As a school, we previously discontinued recording students' BMI due to students feeling uncomfortable. Because of the mental health concerns students are currently facing, at times, the students struggle with self image issues and by telling them their BMI, this might become a trigger instead of a motivator.

Conclusion

Since the COVID-19 pandemic began, as a nation, we have found mental health at the forefront of many conversations. Students across the United States are struggling with mental health concerns, and some of these mental health concerns can be extinguished by targeting student eating habits and behaviors. The problem that teachers at Carl Sandburg High School have been faced with is the students' decrease in quality of life and decrease in their fitness abilities, which reveals that students are overweight and are displaying unhealthy eating habits. This school improvement plan focused on providing students with a nutrition education intervention program to lower the students' Body Mass Index (BMI) and increase their quality of life. As well as, providing students with an expanded school breakfast program and providing students with healthier choices during breakfast and lunch.

At Carl Sandburg High School, a committee of volunteer teachers will examine a variety of different nutrition education interventions and determine which intervention is most appropriate for the students. The administration team will work with the district's breakfast and lunch provider to expand their breakfast program and provide healthier food options. Data will be taken using FitnessGram data (BMI, mile time, push-ups, sit-ups), as well as 5Essentials survey data targeting the students' perception of the supportiveness (ex. trustworthiness, relationships) between teachers and students. Once the nutrition education intervention is in place, students will become more educated and will make healthier food choices to improve their mental and physical health and wellbeing.

By providing students with a positive environment with healthy food choices and the resources to make educated and informed decisions surrounding food, students can decrease their BMI and increase their quality of life.

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Appendix A

Table 1

Carl Sandburg High School Sophomore Average Fitnessgram Scores Compared to Fitnessgram State Standards

	Male Average	Male Standard	Female Average	Female Standard
Abdominal Curl	54.2	24-47	42	18-35
Push-Up	17.2	18-35	10.6	7-15
Pacer	56.4	51-94	35	32-51
Mile	8:16	7:00-9:00	10:25	8:00-10:00

Appendix B

Table 2*Carl Sandburg High School 5Essentials Data*

Category	Performance	Category
Supportive Environment (students feel safe in school, teachers are trust-worthy and they feel supported)	72	More (60-80)
Student-Teacher Trust	99	Most (80-100)
Student Peer Relationships	99	Most (80-100)
Safety	50	Average (40-60)