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Dr. Jerod Stapleton, Committee Chair

Master of Public Health: Dr. Sarah Wackerbarth, Director of Graduate Studies

Increasing Physical Activity Rates Among High School Girls in Jefferson County, Kentucky

CAPSTONE PROJECT PAPER

A paper submitted in partial fulfillment of the
requirements for the degree of
Master of Public Health in the University of Kentucky College of Public Health
Department of Health, Behavior, & Society

**By Haley Copeland
Lexington, Kentucky
April 12, 2022**

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Abstract

Obesity rates across the U.S. are increasing, especially among adolescent females. Physical activity rates have been associated with obesity and many related health outcomes. Regular physical activity can help adolescents improve their cardiorespiratory fitness, build strong bones, control their weight, and reduce depression ¹. It can also help reduce the risk of developing health conditions like heart disease, cancer, high blood pressure, osteoporosis, type II diabetes, and obesity ¹. Thus, physical activity among youth provides a risk factor to target, with the intention of eventually decreasing obesity rates.

Recommended physical education class CDC guidelines are not being met across the U.S. In 2017, only 52% of high school students attended PE classes in an average week, and only 30% of high school students attended daily ¹. Specifically, about 75% of girls had low PE participation rates by not attending PE class on one or more days in an average week when they were in school ². Female high school students should be targeted through school-based interventions.

Therefore, we propose a program using a school-based approach to modify current physical education curriculum and improve physical activity and health education communication. We will work with local experts on developing and maintaining the curriculum and communication materials. By modifying current curriculum, we will work with physical education teachers to focus activities on enjoyment and increased participation. We will collaborate with the local health department, physical education teachers from participating schools, administrators and school employees, and the local board of education. We will evaluate the program outcomes using a longitudinal study design to examine the baseline and follow-up data regarding physical activity rates. We will also conduct formative planning to explore the participating schools, staff, and create trainings, demonstrations, and workshops.

Target Population and Need

Obesity Rates Across the U.S.

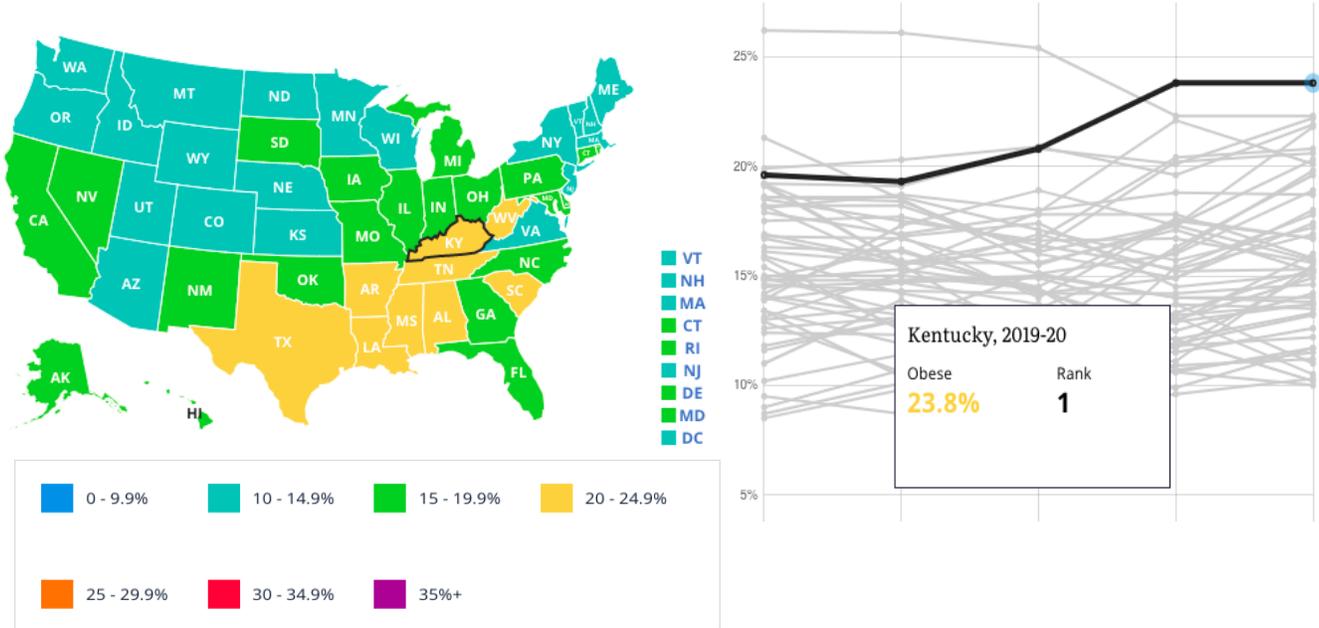
The prevalence of obesity across the U.S. is about 42.4% as of 2018 ³. This rate has continued to increase, along with the rate of risk factors associated with obesity. To be effective, these interventions must be targeted and provide specific guidelines to produce the most effective outcomes. The prevalence of obesity for children as of 2018 was 19.3% and affected aged 2-19 years ⁴. While these rates are increasing across the U.S., Central Appalachian regions, including Virginia, West Virginia, Kentucky, and Tennessee, are exponentially increasing. Thus, targeting Appalachian regions reveals unique populations, barriers, and intervention requirements. These regions have higher rates of obesity, chronic disease, premature mortality rates, cancer, and cardiovascular and respiratory morbidity and mortality ⁵.

As obesity rates increase, these health conditions continue to increase and reveal common themes among certain populations. For example, Type 2 diabetes and obesity are known to be linked and are on the rise. This can be seen among all populations, while certain populations reveal higher rates of associated health conditions than others. For example, examining the adolescent's population reveals high rates of anxiety, osteoporosis among females, Type 2 diabetes, and more ¹.

Obesity Rates in Kentucky

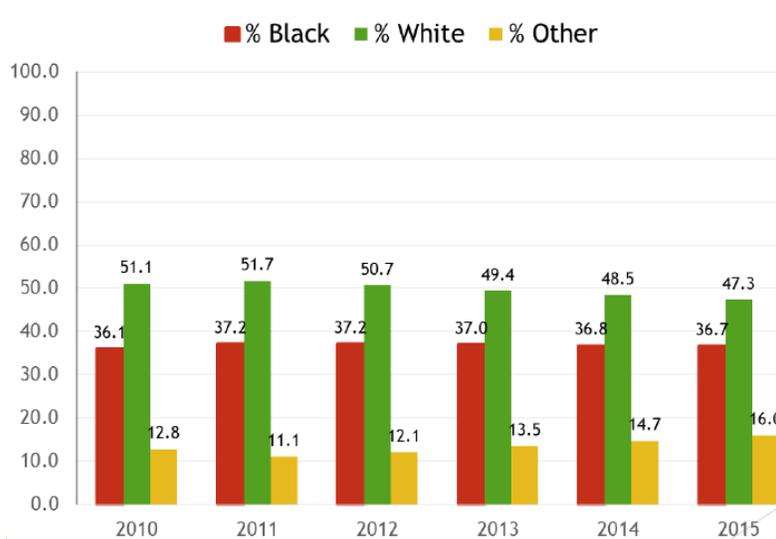
In Kentucky, 23.8% of youth ages 10 to 17 are considered obese, giving Kentucky a ranking of 1 among the 50 states and D.C ⁶.

Figure 1. Obesity Rates for Youth Ages 10 to 17



According to **Figure 1**, obesity rates among adolescent children in Kentucky are 23.8%, the highest in the U.S.⁷. Further, Kentucky high school students have an obesity rate of 18.4%⁷. Thus, most of the youth ages 10 to 17 in Kentucky could be reached by a school-based public health program. Obesity rates among Kentucky females are about 37.9%, compared to 32.1% nationwide⁸. This shows that females should be targeted specifically for obesity interventions to improve overall rates.

Figure 2. Race Trend Data



Jefferson County, Kentucky reveals a population of 782,969 as of 2020 ^{9,10}. The median household income in 2020 was \$58,196, with about 11.4% of the population being in poverty ⁹. The county is made up of 51.7% females and 48.3% males, with 22% under the age of 18 ⁹. The population is predominantly white, making up 71.8% of the population, followed by 22.4% African American. According to **Figure 2**, JCPS reveals a trend of around 50% white students, 37% black students, and 15% other over time ¹¹.

The obesity rate in Louisville, Kentucky, found in Jefferson County, was 29.3% in 2008, which is higher than the national rate of 27.5% ¹². Further, nearly 18% of Kindergartners and 24.2% of sixth graders attending Jefferson County Public Schools were reported as obese in 2021, compared to 17.4% of the nation's children aged 6-11 years ¹². This reveals that Jefferson County, Kentucky needs to improve overall obesity rates. By addressing the adolescent youth population in Jefferson County, youth and overall obesity rates will be improved. Specifically, targeting female adolescents will address a vulnerable population.

Jefferson County has a total population of 766, 757 as of 2019 ¹³. The prevalence of adult obesity rates is 31%, which could be attributed to lack of physical activity, which was 27% ¹³. Similarly, overweight prevalence was reported at about 65%, revealing high rates ¹³. Thus, there is a clear need for an obesity intervention targeting physical activity.

The city of Louisville was ranked the fifth-unhealthiest city in America by the American College of Sports Medicine ¹⁴. Further, 72.7% of black adults are overweight and obese, which is higher than the rates of overweight and obesity among whites (61.8%) in the city. These rates are higher than the adult rates of overweight and obesity in Kentucky and nationwide ¹⁴. Rates of adolescent obesity and physical activity were hard to determine for this specific community but examining overall adult rates reveals implications regarding adolescents.

Community Resources

Many unknown or underutilized resources are available in the community. These include the YMCA, where youth fitness classes, partnerships with the local community, and summer camps involving physical activity are available ¹⁵. Another huge asset to the community is the Kentucky Department for Public Health (DPH), who oversees programs designed to improve the lives of residents through prevention of negative health outcomes, promotion of healthy lifestyles and protection from diseases, injury, and environmental health impacts ¹⁶. There are also 150 different programs that partner with local organizations like the University of Kentucky, Local Health Department (LHD), and more. Similarly, the Kentucky Cabinet for Health & Family Services is an asset for community members that provides access to wellness program information ¹⁷.

Partnership for a Fit Kentucky: Step it up, Kentucky encourages communities to promote walking and walkable communities across the state ¹⁸. This program is geared towards adults and families, while the youth population may be missed from the program advertising. The city has a leadership team comprised of multiple organizations from various sectors with the goal of reducing obesity in the community including Jefferson County Public Schools, the Louisville Metro Board of Health, the Louisville Metro Department of Public Health & Wellness, and the Center for Healthy Equity ¹⁴. Overall, Jefferson County Public Schools will have the most reach and should be the main setting for the intervention.

The gap between community involvement and increasing physical activity rates can be addressed using community resources. The proposed program will utilize existing resources to promote community involvement and increase physical activity rates. Many of these programs and resources are not implemented during school hours and are available for families or youth who do not face barriers. This intervention allows reach to expand to girls throughout the county and occurs during school hours to eliminate barriers and improve physical activity in Jefferson County.

Obesity Risk Factors Across the U.S.

As previously mentioned, obesity and Type II diabetes rates are on the rise among high school girls¹⁹. Type II diabetes among children and adolescents has increased dramatically over the past two decades and is associated with other obesity-related factors²⁰. Further, regular physical activity can help adolescents improve their cardiorespiratory fitness, build strong bones and muscles, control their weight, reduce anxiety and depression, and reduce the risk of developing health conditions like heart disease, cancer, high blood pressure, osteoporosis, type II diabetes, and obesity¹. Focusing on increasing physical activity can improve these health outcomes among female adolescents.

Physical activity as a risk factor for obesity should be addressed through targeted interventions to improve obesity rates, along with associated health conditions. Fewer than one quarter of US high school students (23.2%), were physically active for at least 60 minutes on a daily basis, according to the YRBSS report². Among those high school students, rates are especially decreasing among adolescent girls¹⁹. Specifically, physical activity rates are lower among girls than boys and African American girls more than White girls¹⁹. Thus, targeting female students can be addressed using schools as the program setting, which has been shown to be effective^{21,22}.

Across the U.S., 43.1% of girls played video games or computer games or used a computer 3 or more hours per day for something that was not schoolwork on an average school day². This further reveals that sedentary behavior is increasing among youth, which is a risk factor for obesity and should be addressed through physical activity.

Physical Education Class

Recommended CDC guidelines regarding physical education (PE) class are not being met across the U.S. In 2017, only 51.7% of high school students attended PE classes in an average week, and only 29.9% of high school students attended daily¹. Further, about 74.7% of girls had low PE participation rates by not attending PE class on one or more days in an average week when they were in school².

Thus, a school-based intervention targeting PE class can increase physical activity rates among high school girls and has previously revealed improved physical activity rates among elementary students ¹⁹.

Obesity Risk Factors in Kentucky

Obesity risk factors in Jefferson County are consistently higher than other areas in the region. The percentage of high school students in the county that reported smoking was 20% in 2007 ¹³. Smoking and obesity are among the top causes of preventable deaths in the U.S. and are directly related. Further, youth smokers may be heavier than, or weigh around the same as young, non-smokers ²³. Many adolescent females are especially sensitive to their body weight during high school, and thus, may believe that smoking reduces weight and choose to participate ²³.

According to the CDC, adolescent females were more likely than males to watch television for 3 or more hours per day, not attend physical education classes on 1 or more days in an average school week, and to not play on a sports team ²⁴. Further, CDC guidelines recommend that adolescents ages 6 to 17 years do 60 minutes or more of moderate-to-vigorous physical activity daily, which are not being met by Kentucky youth ¹. Specifically, 81% of Kentucky high schoolers were not physically active at least 60 minutes per day on all 7 days, which was higher than the national average of 76.8% ²⁴. Thus, Jefferson County should be an area of focus regarding physical activity among high schoolers, especially females.

Adolescent females in Kentucky were more likely than males to not participate in at least 60 minutes of physical activity on at least one day of the week, more likely to not be physically active at least 60 minutes per day on five or more days, and not be physically active at least 60 minutes per day on all seven days of the week ²⁴. Jefferson County Public Schools (JCPS) are comprised of 54% female students and 46% male students ²⁵. The school system is the largest in the state and 29th largest in the U.S. Further, 81% of all children in Jefferson County attend JCPS ²⁵. Thus, urban high school girls in Jefferson County should be the target of a school-based intervention to improve physical activity rates.

Program Fit

This program aligns with the needs of the community and resources by including a large portion of youth in the community. School-based programs utilize resources and funding through the school system and are well liked in the community. Since the community has high obesity rates, focusing on improving one component will have the greatest impact on negative health outcomes. Increasing physical activity rates can decrease obesity, overweight, and type II diabetes rates to improve overall health among youth. Thus, these improvements may push other members of the community to participate in physical activity through the community resources available, including family activities.

The program is based on previously implemented physical activity programs in multiple elementary schools and at least one high school, which have been shown to be effective¹⁹. The previous program reached female youth from all backgrounds and races, thus improving rates for races with especially detrimental numbers. This will also apply to Jefferson County, where any racial disparities will be addressed across the three participating high schools in the county²⁶. This program will take place in Ballard High school, Butler Traditional High School, and Eastern High School, which has an estimated reach of 2,841 girls²⁷. If the program is successful, it could expand across twenty-two public high schools in the county, potentially reaching over 13,000 female adolescents²⁷.

Program Approach

LEAP Program

The program chosen to increase physical activity among high school girls in Jefferson County is the evidence-based Lifestyle Education for Activity Program (LEAP). This existing intervention has previously been implemented in urban South Carolina high schools with successful outcomes. The program is part of the SNAP-Ed Strategies & Interventions Obesity Prevention Toolkit, which is a compilation of interventions used to help state SNAP-Ed administrators identify evidence-based obesity

prevention programs to include in their SNAP-Ed plans ²⁸. Further, the CDC recommends school-based interventions that focus on increasing physical activity ²⁹.

Examining the high rates of adult obesity, lack of physical activity among adults, and increasing high school smoking rates reveals an overall need for targeted, evidence-based interventions in Jefferson County. Further, examining obesity rates is important in this community because studies have shown that adult obesity plays a role in childhood obesity ³⁰. Obese children and adolescents are around five times more likely to be obese in adulthood than those who are not. In addition, nearly 18% of Kindergartners and 24.2% of sixth graders attending Jefferson County Public Schools were reported as obese in 2021, compared to 17.4% of the nation's children aged 6-11 ¹². While these risk factors are all related to obesity, physical activity has been shown to be an effective target for reducing obesity among youth ^{21,22}.

The LEAP program involves a physical education (PE) component and an environmental component, which provide focus areas. They are conducted through two primary channels: instruction and the school environment. The PE component is the main focus area, which involves the use of LEAP teams, headed by LEAP Champions. The LEAP teams include staff and teachers, while the LEAP Champions are headed by the girls' PE teachers. All of whom, participate in workshops, demonstrations, and trainings that distribute instructional materials ¹⁹. LEAP Champions are a key piece of the PE component. The Champions modify the current PE curriculum to include fun, girl-friendly activities such as aerobics, dance, walking, weight training, sports, and more ¹⁹. High school students in Jefferson County complete PE class during their freshman year, so participating in this intervention could potentially improve physical activity rates throughout high school for participating females.

The PE component is instructional and focuses on changing the content and delivery of PE class and health education ¹⁹. This is primarily done using previously mentioned LEAP teams and LEAP Champions. This component was designed to enhance physical activity, self-efficacy, and enjoyment. It

was primarily designed to involve girls in moderate-to-vigorous physical activity during 50% or more of PE class time. It was also designed to teach physical and behavioral skills needed to maintain and adopt an active lifestyle. In this Jefferson County program, the focus will be on increasing physical activity rates among female students and not the intensity. PE class activities include gender-specific and separate, girl-friendly, choice-based instructional programming designed to build activity skills and reinforce physical activity participation during and outside of class. These activities are tailored to the school and female participants. Possible activities to include are aerobics, dancing, walking, self-defense, weight training, competitive sports, traditional PE activities, and more. Health education lessons during PE will also be implemented to teach girls the skills necessary to adopt and maintain a physically active lifestyle ¹⁹.

The environmental component aims to create a school environment that supports physical activity among girls. It includes using staff and faculty as role models, increased communication and promotion regarding physical activity, school nurse involvement if possible, and family- and community-based activities ¹⁹. The previous LEAP school environment included standardized training for the LEAP teams, which assessed their own schools and adapted the LEAP elements to change the school environment to create their own unique LEAP school ³¹. Thus, each school will tailor their educational component based on their own school.

The Louisville Metro Department of Public Health and Wellness (LMPHW) acts as a partner for the JCPS to provide funding and resources. This extends throughout the school and into community involvement. Further, local middle schools are also considered silent partners by feeding eighth grade girls to the participating high schools for ninth grade. Along with resources and school partnerships, the program also relies on the LEAP essential element framework that was previously used during the intervention and follow-up phase to create standard guidelines for the schools to implement and increase fidelity of the program. In total, there were sixteen essential elements, with ten being required and six being recommended for the instructional and environmental components of the program ³². Of

the ten required elements, seven were required instructional elements that focused on PE and promoting physical activity. The other three were environmental elements that focused on a broader supportive school environment ³². This program is intended to implement education and environmental change to support an increase in physical activity among girls.

Adaptation

To tailor the proposed LEAP program for the JCPS, small adaptations will be made to ensure the best possible outcomes. The program adaptations will include parent engagement and tailored content. Engaging the parents is a key component to improving physical activity among girls. According to a study published in the *International Journal of Environmental Research and Public Health*, parent engagement and support, physical activity, and academic performance are all related and reveal positive outcomes ³³. Children who have engaged parents tend to develop better socially and emotionally and tend to perform better in school ³⁴. Further, studies have shown that when parents are involved and engaged in promoting physical activity for their children, theory-based programs tend to yield greater efficacy for lifestyle behavior improvement ³⁴.

This adaptation should improve physical activity rates among the participants with increased parental involvement. Along with improving physical activity during school, a secondary outcome should reveal increasing physical activity rates outside of school as well. When parents and participants engage in conversations regarding what they are learning, positive encouragement, and setting goals, it also allows the parents to become involved and possibly increase family physical activities. Thus, a question regarding parent engagement will be included in the data collection survey tool.

The PE curriculum in JCPS is a standards-based curriculum created to meet the standards of the Kentucky Department of Education (KDE) and inspire students to engage in learning ³⁵. The exact course and syllabi vary between the schools and individual classrooms. Thus, a curriculum will be created to include all girls in the school system and best fit the participating schools. The curriculum will be created

by the teachers, who are trusted among the students and staff. Thus, LEAP Champions will determine physical activity based on their location and interests of the girls. In turn, enjoyment and self-efficacy should improve among girls³⁶. This will also be addressed in the survey tool, with a question regarding self-efficacy.

Trainings for staff and administration will also include branding and tailored content to ensure the program is specific to the schools in the community. For example, any relevant health education handouts will be designed to show diverse pictures or descriptions, including information specific to the targeted population.

Components of the Health Belief Model will be addressed in this intervention to improve the girls' perceptions and actions, and self-efficacy to improve physical activity rates among high school girls³⁷. The intervention aims to improve perceived benefits of physical activity through the environmental component, including health education and communication. Cues to action are targeted through both the PE and environmental components with possible internal and external cues individual to each student. Self-efficacy is targeted through consistent physical activity, the environmental component using consistent communication and education, and measured in the survey instrument.

Formative Planning

The Community Needs Assessment revealed high obesity rates among those residing in Jefferson County. It further revealed that the school system is heavily relied on, offers a place for youth to access resources, and that obesity rates should be addressed. To effectively address obesity rates, certain groups in the community must be addressed on a smaller scale. Thus, using JCPS is the most effective way to target youth in the community, through a familiar way. Using previous evidence, it has been shown that girls reveal low physical activity rates and therefore can be targeted in the community.

Initially, scoping out the schools in the county allows researchers to form partnerships and find three schools to participate. Participating schools will be provided a research incentive as seen in the

budget. Scoping out the schools will allow research staff to see available resources and the program setting. Research staff will meet with teachers, staff, and administration to get an idea of how a typical school year runs, current curriculum, and gauge PE engagement among girls at these schools. Meeting with the staff will allow researchers to assess curriculum, set up bi-weekly meetings with teachers, and beginning the trainings, demonstrations, and workshops. Piloting a small group of girls to test the survey data collection, PE class, and educational materials will allow the research staff to see where changes should be made. Starting this process a year before the girls complete their PE class allows the program to create meaningful partnerships with the schools, teachers, staff, and administration. Piloting, planning, and readiness are key components of this period.

Planning allows program staff to work with the girls' PE teachers, who will ultimately become the LEAP Champions. Modifications created by the PE will be addressed during bi-weekly meetings to make sure they fit with the school, participants, and increase physical activity rates. The first meeting will take place at the Center for Health Equity and the curriculum modifications will be decided, including the PE activities and the health education component. Research staff and teachers that have not met will have a chance to meet and discuss the program, along with participating teachers that are unfamiliar with each other. After modifications have been decided, future meetings will take place at each school to ensure the teachers do not have to travel and make meetings feasible. Researchers will be randomly assigned to a school to run the check-in meetings to ensure everyone agrees that the schools are implementing the activities and educational components appropriately. Baseline testing will be implemented at the beginning of the school year in year two.

Implementation

Along with the PE component, the environmental component must be implemented. More workshops, trainings, and demonstrations will be implemented, as well as school-wide staff meetings to gather feedback. These include discussions about how best to implement role modeling, communication

and promotion of health and physical activity, along with how to include community and family-based activities. Another possible component of the school environment is the nurse. However, this may only be available in some of the schools. Those that have a nurse will also use them as an educational resource and those without one will not be given a substitute. This is important because it allows for further implementation after researchers are gone with no necessary changes, ensuring long-term outcomes for the girls and community.

The staff and faculty will learn skills regarding how to increase communication and promotion of physical activity, along with role model behaviors. These skills will be learned through previously mentioned trainings, workshops, and demonstrations with health professionals. Culturally appropriate materials tailored to the community will be used to best assist the girls in the JCS system. Family and community involvement will come from partnerships in the community, like the LHD. These will include an informational community fair, along family nights at the schools to increase parent and family involvement and encouragement. The Louisville Metro Public Health and Wellness Department will host a community fair downtown open to the public, with the JCS teachers as the main hosts. The fair will be implemented at the beginning of the school year. This will show the community what activities the girls are going to be participating in during PE class and generate community interest to increasing physical activity. Health education materials, resources, and a preview of the activities offered for the girls will be provided for families on family night. Parents and teachers will have the opportunity to meet and attend a Q&A session to make the purpose of increasing physical activity clear. This session will also be held at the beginning of year two, before the intervention implementation begins. About halfway through the intervention, follow-up testing will be completed during the middle of the school year.

During the implementation process, researchers will assess how the intervention is going and continue collecting data for the program outcomes assessment. Focusing on discussing the fidelity of the program with the school staff and administration through monthly meetings with all participating

schools is important for quality improvement. Further, suggestions from the PE teachers will be discussed in the implemented bi-weekly meetings. Understanding if and how the teachers feel they are maintaining the program will allow researchers to assist and collect data. Data collection continues in meetings and surveys from the participants, along with feedback from the teachers regarding fidelity of the curriculum implementation. This process continues to the end of the school year and includes follow-up testing.

At the end of the school year, final meetings with the staff and administration will be executed. Data collection in the form of final interviews and meetings reveals how the schools believe they did, how that compares to actual results, and what could be improved. This period of implementation also focuses on preparing the schools to continue increasing physical activity rates among high school girls and possibly expand to others in the school or community.

Data assessment is also conducted to distribute reports to the participating schools. These reports include the primary outcome results revealing if they increased physical activity among girls, what activities were liked, if self-efficacy improved, if parents were engaged, and a comparison of how the schools felt they did compared to how they really did. These reports are meant to help the schools and allow for future use of the program to continue improving physical activity rates. Looking at what activities the girls enjoyed may reveal a potential partnership opportunity. For example, if the girls enjoyed dancing, the local YMCA and JCPS may form a partnership to offer dance classes for the girls. After one year of program implementation, the last data collection will take place mid-year in the third and final year of the program. Research staff will then be able to observe if physical activity continued to increase.

Performance Measures & Evaluation

Study Design

A longitudinal design will be used throughout the participating schools. Longitudinal study designs implement continuous and repeated measures over a prolonged time to follow a set of individuals³⁸. This study design will be used to observe physical activity rates among girls to see if they improve physical activity rates during PE class. Further, this design is commonly used to examine the relationship between risk factors, like low physical activity rates, and the development of a disease, like obesity³⁸. This design will also allow all girls in participating schools to be involved in the intervention since there is no control group. Thus, expanding the program reach and improving overall physical activity rates among adolescent girls. It will also provide new evidence regarding the use and success of a longitudinal approach to data collection for this program.

Data will be collected before, throughout, and after the school year to measure the girls' physical activity rates over time to determine if the intervention improved physical activity during PE class. Secondary outcomes may also be measured, such as parent engagement and self-efficacy. Baseline testing will occur at the beginning of the school year in year one of the program, with follow up tests during the middle and end of the year. There will be an additional follow-up test mid-year in year three to examine the sustainability of the program if physical activity was still increased in the next year. This ensures adequate data will be collected and results can be evaluated.

Data Collection

The 2019 Standard High School State and Local Youth Risk Behavior Survey, or the YRBS, survey tool will be used to measure self-reported performance data. This survey tool will be the primary point of data collection, along with teacher, administrator, and staff feedback. According to the CDC, this survey tool is used to collect health behavior data that will be utilized to improve health education for youth³⁹. The survey will be modified to include only questions pertaining to demographics and physical

activity. Demographic questions will include their age, sex, grade, race, height, and weight. There are also four physical activity questions regarding physical activity total for at least sixty minutes per day, hours of TV watched per school day, hours of technology use per school day, days of PE class per school week, and activities completed in PE class³⁹. Further, there are two questions regarding parent engagement and self-efficacy.

While the original YRBS is conducted every two years, this survey tool will be conducted throughout the program. This survey is ideal for school-based data collection because it can be collected in a short session after PE class throughout the year and be completed on the computer. The girls will take the surveys implemented by trained research staff on the same Wednesday of each month data is collected to maintain consistency.

Keeping the survey brief and concise is important due to the short period of time for participants to complete it. Further, creating concise and simple questions reduces the risk of a participant not understanding the question and reporting inaccurate data. Including parent engagement from the girls' perspective is important because it has been shown to be effective in increase physical activity among youth³⁴. Thus, a question regarding how much the participant feels their parents are engaged in their physical activity will be included. As previously mentioned, this has been linked to better physical activity and academic performance, according to Burns and colleagues. Self-efficacy will be addressed through a question regarding physical activity. The question will ask how confident participants are feeling about their ability to perform physical activity. These measures reveal if participants' self-efficacy and parent engagement has increased, along with how likely girls are to continue being physically active, especially outside of PE class.

Reliability has been determined for the survey instrument according to a Morbidity and Mortality Weekly Report published by the CDC. Two test-retest reliability studies of the national YRBS questionnaire have been conducted¹⁰. The first study revealed about three fourths of the questions

were rated as having a substantial or higher reliability and no statistically significant differences. The second reported that the reliability of some questions was questionable, leading those problematic questions to be revised or removed from later versions.

Validity has not been directly conducted to assess the validity of all self-reported behaviors included in the questionnaire. However, the CDC has reviewed existing literature to assess cognitive and situational factors that might affect the validity of adolescent self-reporting of behaviors measured by the survey. They determined that self-reports of these behaviors are affected by both cognitive and situational factors, they do not threaten the validity of self-reports for the behaviors ¹⁰.

Formative Evaluation

Before the program is implemented during the school year, trainings, demonstrations, and workshops are created and adapted for the teachers, staff, and administration to attend. Feedback with the goal of improving the trainings, demonstrations, and workshops will be collected from teachers and staff before large-scale implementation. A pilot program will be implemented, followed by the collection of employee assessments completed in small, semi-structured interviews conducted by research staff. Employees will be asked about activity helpfulness, likelihood of staff attending, and any adjustments that should be made to best fit the staff and environment at their particular school. They will also be asked if these changes will be effective in increasing program fidelity from employees.

Environmental Component

Similarly, developing and piloting the health education and communication materials will help with continuous quality improvements to the program. Educational materials will be crafted by the Project Director and research staff and presented as a paper and electronic handout. The electronic version will be interactive when opened on participants' phone to optimize student engagement. After the materials are developed, feedback will be collected regarding the acceptability and information

engagement to allow for continuous modifications. After testing the pilot program, structured interviews composed of five girls will be completed by research staff. Key areas of assessment include understanding the educational materials, information retention, areas of confusion, diversity and inclusion, and any other forms the materials could be presented in.

The communication materials will be developed through a paper script that will be distributed to all staff involved in the environmental component. Creating a mock health communication setting to pilot will reveal any educational information or communication skills that are missing or should be included due to common interest. Piloting this will be most effective with a small group of participants. Feedback will be conducted by research staff in small group structured interviews. Participants will be asked if they understood the educational materials being communicated, if they believe the communication to be effective, and if there are certain staff that communicated better than others.

PE Component

PE Champions will pilot their modified activities using a small group of girls from a variety of public middle schools. This pilot run will focus on including a wide range of girls to reveal feedback across the county and allow PE teachers to adjust their teaching implementation and activities before the program begins the following year. Specifically, eight girls pulled from the three different schools will participate and interact with different staff and available resources. Semi-structured interviews will be conducted by research staff to determine participant enjoyment, likelihood of enjoyment by other girls, effectiveness of PE Champion teaching regarding activity instructions, and if they believe they increased physical activity during the modified activity.

Process Evaluation

Process evaluation involves examining the implementation process, tracking or measuring what went well or what went poorly, and determining how those factors contributed to the success or failure of the program ⁴⁰. Further, documenting the process of developing the program allows program staff to

determine the rationale behind the intervention, factors that were considered, and provide potential guidelines for future evidence-based programs. The process of developing this program was documented using a computer software by the Principal Investigator and Project Director, who developed their own set of program criteria based on a previously implemented evidence-based intervention. This included following the previous program's evidence base, documenting the chosen data collection method, and intended outcomes. Further, the implementation process will be adjusted as needed based on the community fair and family night feedback and outcomes.

To examine the implementation process, the trained research staff will actively record bi-weekly meeting with teachers, faculty, and administrators to examine transcripts. An exit form will also be provided to employees to fill out before they leave to collect written feedback. This will allow staff to examine verbal or written feedback from teachers revealing trouble implementing the exercises, low participant enjoyment or responsiveness, and any logistical issues employees may be encountering. These could include timing, equipment, responsiveness, participation, or instructional issues. Examining this process reveals any relationships between the program implementation and program outcomes. If the program is not implemented properly, outcomes may occur accordingly. Teacher feedback could also reveal areas that are still not being properly explained in the offered trainings, demonstrations, or workshops.

Process evaluation will focus on communication and feedback from teachers, staff, and administration to examine how program implementation is going. Thus, teachers are the primary point of communication, implementation, and planning. School staff are the next set of key program enforcers, whose involvement is key in integrating the program into daily activities for students during PE class.

To track or measure what is going well and what is not, transcripts from bi-weekly staff meetings and data collection will be examined by the Principal Investigator and Project Director.

Transcripts will reveal areas of implementation that are going well for staff and school-based, resources-based, or teacher-based issues that should be addressed. Transcripts also include teacher feedback regarding training, demonstration, and workshop effectiveness and areas of improvement. Examining collected data allows for comparisons between baseline and follow-up measures from the participating girls. These measures can reveal if there was no improvement at that point in data collection or if there was not an improvement over the course of the entire program. It can also allow the researchers to draw conclusions throughout the process, like whether implementation effects girls at different times in the intervention. Thus, revealing what is going well and what should be adjusted. While examining data collection is important, most of the process evaluation will rely on previously mentioned staff feedback regarding how implementing the modified activities is going.

To determine how feedback and measurement factors contributed to the success or failure of the program, the program goals will be used for comparison. By comparing the staff feedback, the research team can see what is being implemented according to plan. Comparing the data collected from the YRBS survey also reveals what is successfully working with the implementation process and what can be adjusted to improve the quality of implementation for the rest of the program. As previously mentioned, these program measures can reveal the relationship of current program outcomes and how they can be adjusted through a change in implementation. For example, if an activity is not improving physical activity rates, staff can determine if it is due to instructional or participant issues. Thus, revealing what can be improved at that moment to ensure success of the program. Further, feedback from teachers and staff can reveal whether available trainings, demonstrations, and workshops were a good use of their time or if there are other methods they would prefer. Regarding health education, staff feedback about the materials and use of paper and electronic dissemination methods is key to determining if these methods contribute to a successful program.

Research staff will make continuous quality improvements to the program using process and performance measure data. Key success for the intervention comes from increasing physical activity participation rates among the participating high school girls. Secondary outcomes include improved parent engagement and improved self-efficacy. Possible expansion of the intervention to other high schools in the county, along with improved physical activity rates outside of school would also contribute to the success of the program. Challenges revolve around attrition rates throughout the school year, recall bias, and program fidelity. Lessons learned from implementing this program revolve around when to collect survey data, how to best implement the longitudinal study design, how to enforce physical activity participation, and how to balance the PE component and environmental component implementation. Further, lessons learned refers to the difficulty of activity implementation, whether activities or instruction was actually completed, and how many activities were originally included in the program guidelines versus how many were actually implemented during the program.

Fidelity

Program fidelity will ensure that the program is being implemented the way it was intended to be. To examine how it should be implemented and compare how it is actually being implemented, the program guidelines and teacher meeting transcripts should be compared. The program guidelines reveal instructional materials, available trainings, demonstrations, workshops, and the topics for each. The guidelines also include the modified PE activities, health education materials, and bi-weekly meeting materials. Comparisons will focus on how modified activities and health education materials are being taught, communication implementation, how closely PE Champions are following activity instructions, how they are engaging the students, and if they are attending the available resources. This will reveal how closely the program is being implemented compared to how it was intended to be in the program guidelines. Areas of improvement can be addressed continuously throughout the program.

Another important factor of fidelity is the responsiveness and engagement of the teachers, staff, and administration. This can reveal attitudes, beliefs, and behaviors regarding the staff and program implementation. Thus, the goal is to achieve positive attitudes and behaviors from staff and students to reveal high fidelity. This is also a predictor of whether the school will continue with the program after the grant is completed. Check lists will be used in the staff monthly meetings to provide a consistent form of evaluation throughout the program. The check lists also provide a reminder to research staff and meeting attendees regarding necessary steps to achieving high fidelity and keeps the program on track. The list alludes to whether teachers are implementing the modified activities, if they are teaching health education materials through effective communication, if they are attending monthly meetings, if they are providing consistent feedback, and if they are attending trainings, demonstrations, and workshops.

Outcome Evaluation

While process evaluation focuses on the process of implementation, outcome evaluation focuses on measuring the degree to which physical activity among high school girls actually increased, along with self-efficacy and parent engagement. Thus, focusing on outcome goals provides concrete areas to assess and allows the effectiveness and value of the program to be determined. These outcome goals are included in the survey tool and can be used to measure overall program outcomes. The main outcome to assess is the question regarding how many days they were physically active for at least 60 minutes per day.

The plan to determine the extent to which outcome goals were met focuses on performance measures, or data collection. Comparing baseline and follow-up surveys will reveal whether physical activity increased, along with whether parents were engaged and if self-efficacy increased. Final follow-up surveys are administered the following year of the program, revealing whether these results have held up over time. Analyzing the data by school will allow researchers to create comparisons and

examine trends. For example, some schools may not have achieved increased physical activity, while others may have a drastic improvement. This will enable researchers to show that outcome goals were a result of the carefully planned and executed intervention and not due to external or environmental factors.

With data being collected often, reports will be generated by research staff and the Principal Investigator. These will also be distributed during monthly meetings. Reports for teachers will be centered around physical activity and self-efficacy survey questions. Reporting this monthly will enable teachers to see real-time evaluation of the intervention they are acting as LEAP Champions for and adjust as needed. Another area that can be examined with consistent data collection and evaluation is sustainability regarding higher parent engagement and higher student participation.

This program is long-term, takes time and careful planning to implement, and utilizes a variety of resources. Therefore, the program requires evaluation throughout and at the conclusion of the program. Implementing a longitudinal study design allows data to be collected, analyzed, and reported throughout the process. Previous evidence-based interventions using a control and intervention group have shown to be effective when examining implementation, outcomes, and future studies. Thus, implementing this program with a different study design will allow the outcomes to be the primary point of interest. With the process and outcome evaluation strategy mentioned above, the failures, successes, and fidelity of the program will be revealed to researchers and school employees. Evaluation data is critical for participating schools because it reveals to employees that their time and effort was necessary to improve the lives of their students. It also reveals that this program should be continued and possibly expanded in the future. Ultimately, focusing on improved physical activity rates in this program will lead to improved obesity rates in the county over time.

Capacity and Experience of the Applicant Organization

The Louisville Metro Department of Public Health and Wellness (LMPHW) has the necessary experience to implement evidence-based interventions in the county. The LMPHW is an independent, academic health department that implements programs by collaborating with partner organizations and utilizing available resources ⁴¹. The Department includes a Board of Health that meets monthly, with a mission to act as a champion of equitable physical, behavioral, and environmental health. The Cancer and Chronic Disease Prevention service offers resources regarding chronic disease and cancer prevention. Further, the LMPHW has goals of decreasing the incidence and death rates for all cancer in the metro areas and to prevent, detect, and reduce risk factors that cause heart disease and stroke ⁴¹.

The Center for Health Equity was created to advocate for the fair and just opportunity to be healthy and reach full human potential. This program utilizes policies, partnerships, and performance to advance equity in the city. The program partners with Diabetes Programming and Health Impact Assessments, implements Community Health Needs Assessments, Population Health Surveillance and Research, and works on the Community Health Improvement Plan (Healthy Louisville 2025). Further, the program uses the Health Impact Assessment tool that implements a data-driven approach to identify potential health consequences of new policies, programs, or decisions ⁴². This demonstrates sustainability and quality improvement over the course of the long-term program. These are large scale programs that target the community and aim to improve health outcomes, like diabetes and obesity rates.

Along with health equity, the LMPHW aims to prohibit discrimination with their Equity in Contracting and Procurement Task Force whose role is to advance racial equity in Louisville ⁴¹. They provide information collected from the Task Force Member Organizations, discuss racial barriers in the community, identify and revise programs supporting Black-owned and Diverse-owned businesses. The Department also includes a Louisville Metro Human Relations Commission that aims to bridge ethnic,

racial, and religious groups in the metro area. It also monitors business compliance and certifies disadvantaged businesses as Minority Owned, Woman Owned, Disabled Owned, Service-Disabled Veteran Owned, and LGBT Owned ⁴¹. Further, the Mayor's Office also utilizes the Office of Equity and partners with the work the city does with the National Government Alliance on Race and Equity.

Funding for the LMPHW comes from various state, public, and private entities. In 2016, the Department was awarded the Culture of Health prize from the Health Equity Fund ⁴¹. The Fund involves a collaboration of organizations that aim to invest in the process of equity. Thus, the funding came from donations from various foundations ⁴². This is just one of many examples regarding funded awarded to the Department to further health equity.

The Department offers a variety of agencies and special initiatives to encourage workforce and workplace development. Workforce development can be seen in Kentuckiana Works and Greater Louisville Inc that aims to provide expansion or sustaining resources. These organizations and opportunities expand across the metro area and aim to improve government agencies and expanding businesses. The Department also offers multiple Wellness Centers for employees and health care offerings. Further, the Department offers the Mayor's Healthy Hometown Grant that is awarded to organizations to help them provide nutritional counseling, exercise classes, instruction on how to grow vegetables, training to empower girls through running, and an after-school gardening program ⁴¹.

Organizational Structure

Since there is limited work in the community regarding schools and health initiative, we aim to create a new school-based initiative focusing on improving physical activity and health education for adolescent girls. The LMPHW has employees in positions that will be beneficial for our program. These positions include an Associate Medical Director and a Director for the Center for Health Equity. Dr. Phyllis Smith is currently in the role of Associate Medical Director and acts as a champion for gender equity. She can provide guidance for health education and communication materials for the program.

Michael Scott serves as the Director for the Center for Health Equity and can continue addressing health equity in the community by focusing on community engagement, strategic partnerships, and data gaps by focusing on local high school girls through this intervention. These employees are critical to the partnership and implementation of this intervention. Additionally, a Principal Investigator, Project Director, Consultant, Direct Supervisor, and Research Support Staff will be in place to guide the intervention. Overall, the organization provides diverse programs, staff, partners, and community outreach in the county. Further, the LMPHW conducts large scale programs, community-based projects, utilizes available resources and funding, offers community engagement, and has built community trust.

Partnerships & Collaboration

To ensure the project implementation is successful, partnerships and collaborations will be well-defined by their roles and how they fit into the program. **Table 3** displays the local community partners and stakeholders involved in the program and how they will be beneficial. The Project Director serves as the primary point of contact for all partner and stakeholder communication. Further, the Project Director will disseminate progress reports in annual partner meetings to ensure a strong partnership.

Community Advisory Group

To address physical activity rates among high school girls in the community, a Community Advisory Board (CAG) will be assembled. Members of the group will be determined by their individual contribution to the program and successful outcomes. These members will also provide feedback regarding areas of improvement to further ensure fidelity and proper implementation. The diverse group will convene bi-annually to discuss barriers, areas of improvement, and provide unique perspectives representing the best interest of the adolescent girls.

The Project Director will present the group with the PE and environmental component materials and staff trainings to receive feedback and any barriers that could be encountered when implementation begins in public schools throughout the community. As mentioned in the Team

Responsibilities table, the Principal Investigator will initiate and assemble the group to ensure a group of diverse community members are selected. The Principal Investigator will also distribute progress reports to the group as the main point of discussion.

Jefferson County lacks the proper partnerships and data regarding local public schools to ensure successful implementation and outcomes of the program. Thus, the Center for Health Equity in the LMPHW can create a position that allows our project to work with local high schools to ensure diversity, inclusion, and a health-centered focus on girls in the community. If this intervention is successful, it could potentially lead to a new program in the department to improve school outreach, physical activity rates, and health education in local schools. We are asking for \$42,000 to fund and create this position.

Table 3. Community Partners and Stakeholders

Organization	Level	Description	Role
Jefferson County Public Schools	Local	Public school district in Jefferson County that works to ensure youth in the community receive education in a safe and beneficial environment.	Provides access to the program setting and essential staff members.
Louisville Metro Department of Public Health & Wellness	Local	The LMPHW works to ensure health equity and provides community resources.	Provides individuals to participate in the CAG, along with funding and a setting for the newly proposed position.
LMPHW Center for Health Equity	Local	The Center for Health Equity works to ensure everyone has a fair and just opportunity to be healthy and reach their full potential.	Provides policies, partnerships, performance management methods, and staff, along with a department for our proposed program.
Jefferson County Board of Education	Local	The Board of Education selects and hires the Superintendent that serves as the chief executive.	Provides approval of program implementation in the JCPS and educational curriculum for local high schools.

Table 4. Community Advisory Group

Name	Organization/Role	Responsibilities
Dr. Phyllis Smith	Louisville Metro Department of Public	Continue her role as a champion for gender equity by providing guidance for health

	Health & Wellness; Associate Medical Director	education and communication materials focused on high school girls.
Michael Scott	Louisville Metro Department of Public Health & Wellness; Director for the Center for Health Equity	Continue his role of addressing health equity in the community by focusing on community engagement, strategic partnerships, and data gaps by focusing on local high school girls through this intervention.
Pam Beasley	Community Member; Parent of participant	Can provide insight into local high schools, adolescent participation, and what PA her daughter enjoys most.
Jim Halpert	Jefferson County Public Schools/PE teacher and LEAP Champion	Can provide insight into PE class, current PE activities, PE activities that could be modified for the program, what activities result in high participation and enjoyment rates among girls, and what activities other PE teachers would be more likely to implement.
Angela Martin	Jefferson County Board of Education; Curriculum Director	Can provide insight into past, current, and future PE and health curriculum, along with the feasibility of the proposed modifications.

Project Management

The project management plan allows program implementation to be successful through proper project management. In the appendix, the Logic Model and Gantt Chart provide an organized overview of intervention activities expected to be completed throughout the program. The first year of the program involves creating partnerships and piloting program components. We will assess the program approach to analyze program feasibility, potential challenges, and the quality of program objectives and activities. This will allow the process of evaluating the program and its components to start. Once this begins, the rest of the implementation occurs, and areas of improvement are revealed through monthly and bi-weekly meeting feedback.

Over the course of the intervention, the implementation will provide us with information regarding lessons learned, barriers, challenges, and successes. Assessing these reveals continual areas of improvement that project staff can manage throughout the program. The table below reveals the project management team that will provide the necessary expertise, experience, and skills for program

implementation. The Project Director will offer additional training or professional development needs over the course of the program to ensure staff turnover is limited and staff are actively engaged in the program. Further, the Principal Investigator and Project Director will collaborate to hire staff with the proper expertise, previous experience, and experience assisting with evidence-based programs.

Team Responsibilities

Role	Responsibilities
Principal Investigator	<ol style="list-style-type: none"> 1. Receive approval from the JCPS board 2. Have final authority for all program decisions 3. Review progress reports from bi-weekly and monthly meetings to ensure the goals of the program are being met 4. Overseeing the hiring of essential project staff 5. Establish partnerships with JCPS, filtering middle schools, and staff 6. Establish and assemble the CAG
Project Director	<ol style="list-style-type: none"> 1. Develop, monitor, and make changes to program components for effective implementation, including the recruitment, data collection, budget, study design, and program evaluation 2. Hire other necessary research staff 3. Supervise all research staff 4. Provide and ensure staff have received proper training relevant to their roles 5. Provide any extra training or professional developmental needs over the course of the program 6. Provide program reports and program information to partners and the CAG during monthly meetings
Consultant	<ol style="list-style-type: none"> 1. LMPHW consultant provides educational materials and health communication training
Direct Supervisor	<ol style="list-style-type: none"> 1. Holds monthly meetings with participating teachers 2. Holds bi-weekly meetings with all participating teachers, staff, and administration 3. Collect transcripts from bi-weekly and monthly meetings 4. Collect fidelity monthly meeting transcripts 5. Point of Contact for school staff and administration 6. Publish monthly reports provided during bi-weekly and monthly meetings 7. Perform data checks on baseline and follow-up data collected throughout the program

Research Support Staff

1. Assesses qualitative data by listening to meeting and formative evaluation feedback transcripts, coding them, and providing key themes
2. Assess qualitative data themes from bi-weekly meetings and compare them to program guidelines to ensure fidelity
3. Design and implement feedback interviews for formative, process, and outcome evaluations
4. Coordinate training sessions, demonstrations, and workshops
5. Provide support for administrative duties by providing a point of communication for all participating schools and staff

Budget Narrative

Personnel and Fringe Benefits

Haley Copeland, MPH, Principal Investigator (\$75,000 annually, 20% effort (Y1); 30% effort (Y2); 30% effort (Y2)) is a Program Director for the American Heart Association, focusing on physical activity among children. Previously, she worked as a Program Coordinator for the Kentucky Cancer Consortium (KCC). She has training and experience in health behavior and pediatric cancer survivorship research and evaluation. She has worked on multiple Centers for Disease Control and Prevention (CDC) grants regarding cancer survivorship, nutrition, and physical activity. Her work regarding survivorship includes assisting on a KY Nutrition and Physical Activity (NUPA) team, community building through educational materials, and creating resources to develop a nutrition and physical activity resource guide for other health professionals. She has also engaged in community assessment by organizing survivorship data to describe the need of Kentucky cancer survivors and present key themes to her NUPA team and other health professionals. These responsibilities reveal work related to nutrition and physical activity in a health setting and shows she would be a good fit for the Principal Investigator role of the proposed intervention.

Her previous work regarding program coordination includes participating on an annual evaluation committee for a CDC grant, community building through pediatric cancer educational

materials, compiling program evaluations, and organizing and analyzing evaluation results from key stakeholders and community members. Along with these skills, her relationships with multiple organizations and stakeholders in both research and practice-based settings will be essential to the successful completion of the proposed program. As the Primary Investigator, Haley will devote 20% effort annually to executing this proposed grant. She will be fully responsible for all aspects of the program and will provide management for all members of the project team and activities in the intervention. Specifically, she will monitor the Project Coordinator, ensure approval from the JCPS board, establish partnerships, and review progress reports throughout the program.

Elizabeth Smith, MPH, Project Director (\$60,000 annually, 75% effort (Y1); 70% effort (Y2); 90% effort (Y3)) is a Program Coordinator at the Kentucky Department for Public Health. She has a background in nutrition and physical activity research and has published many papers in the *Journal of Public Health* regarding CDC recommendations and Comprehensive School Physical Activity Programs. Her work has primarily focused on comprehensive physical education and the combination of multiple components and strategies to be most effective for increasing physical activity before, during, and after school.

She has co-authored a variety of CDC journal articles on topics such as access to places for physical activity, prompts to encourage physical activity, equitable and inclusive access, Community Preventive Services Task Force recommendations, and community-wide campaigns. This work reveals her knowledge and ability to understand physical activity programs and her knowledge of CDC recommendations. Her previous research includes a program focused on physical education curricula developed to inform knowledge and behaviors related to physical activity, physical fitness, and motor skills in youth. Her work reveals she is the right candidate for this position. Elizabeth will develop, monitor, and make changes to recruitment, data collection, budget, study design, and program

evaluation. She will also provide staff training, professional development, and program reports to partners and the CAG.

John White, MHCI, Consultant (\$55,000 annually, 5 months, 0.25% effort) is a Communications Professional and has a Master of Health Communication and Information degree from Rutgers University. His work has primarily been at the state and local level, working with rural and Appalachian populations and organizations. He has published guidelines for hospitals regarding health information communication, provided consultation for health professionals in private or local physicians' offices, and travels part-time to be a guest speaker at public health and communication conferences across the U.S. As a consultant for this project, his primary responsibility is to prepare educational materials and health communication training for the staff and students. This will require all work to be completed in the initial formative planning period of the program, which is in the first year of the grant.

Holly Adams, MPH, Direct Supervisor (\$50,000 annually, 3.6 months, 10% effort) is a Policy Analyst with a focus on health management policy and a member of the Kentucky Coalition, or Kentuckians for the Commonwealth. She works for the Kentucky Department for Public Health and has worked on many projects geared towards school systems and youth in the state. She has extensive knowledge of the JCPS and PE policies in place. Her current position allows her to be continually updated with current policies in the state regarding public schools, physical education requirements, and PE and health curriculum.

As a member of a coalition committee, she works to navigate policy development in a variety of areas throughout Kentucky. Her commitment to acting as a team member, participating in discussions, and groundwork in local school districts reveals that she would be an essential staff member for this intervention. She will be responsible for holding monthly and bi-weekly meetings with teachers and employees, publish monthly reports to provide during those meetings, collecting transcripts and fidelity

reports from those meetings, and performing data checks on baseline and follow-up data throughout the program. She will also act as a point of contact for school staff and administration.

Rachel Wheeler, MPH student, Research Support Staff (\$32,000 annually, 16 months, 100% effort) is a Master of Public Health student at the University of Kentucky. Her concentration area is Health, Behavior, and Society and her area of interest is pediatric populations. She is currently completing a work study, where she assists a school in Fayette County, Kentucky with their nutrition and physical activity materials and how they are implemented in the school. Her interests and work align with the theme of this intervention and make her a candidate for a role as research support staff on this project. She will assist with day-to-day activities that ensure the success of this intervention.

She will assess qualitative data by listening to meeting and formative evaluation feedback transcripts. She will then code the bi-weekly, monthly, and formative evaluation feedback transcripts and provide key themes for each. Further, she will assess these themes and compare them to the program guidelines to ensure continued fidelity. She would also work to design and implement feedback interviews used in the formative, process, and outcome evaluations. She will also be involved in coordinating the training sessions, demonstrations, and workshops provided for the school employees. Since she will be in constant contact with staff and administration, she will also provide support for administrative duties by providing a point of communication for all participating schools and staff.

Grant Richards, MPH student, Research Support Staff (\$32,000 annually, 16 months, 100% effort) is a Master of Public Health student at the University of Louisville. He has a special interest in working with in his community and exploring partnerships and resources the LMPHW has to offer. Further, he hopes to continue this by working alongside the health professional that accepts the newly proposed position working with local high schools. His contribution to this intervention would be essential not only in daily operations, but also the future success of program sustainability. His role would also include collecting, coding, and assessing qualitative data collected throughout the program.

He will compare coded themes with program guidelines to ensure fidelity, along with working to implement feedback interviews for the evaluation processes. He will also assist with training sessions, demonstrations, and workshops for staff, along with providing administrative support to school employees.

Megan Davidson, MHA, Research Support Staff (\$32,000, 16 months, 100% effort) is a Master of Health Administration student at the University of Kentucky. Her work as a Health Administration student will provide another voice advocating for change in this county. Further, her role as a research assistant working on a CDC grant in Martin County, Kentucky will allow her to share her experience and knowledge working in a county that also reveals low physical activity rates. She will perform similar work for this intervention, include collecting, coding, and assessing qualitative data collected throughout the program. She will assist with theme comparisons regarding fidelity, along with implementing feedback interviews. She will also assist with trainings, demonstrations, and workshops, along with providing administrative support to school employees.

Fringe Benefits

Fringe benefits include retirement and health insurance. These have been negotiated at a rate of 35%.

In-State Travel

We request funding for project staff to travel to participating schools for meetings, trainings, demonstrations, and workshops. Travel reimbursement is critical for continued research and school staff participation. This will include 6 project staff traveling 20 round trips between the schools and the project base at the Center for Health Equity. Thus, 12,500 total miles at \$0.50 cents mileage reimbursement rate: total \$6,250 per year x 3 years = \$18,750.

Out-of-State Travel

We request funding for project staff to travel to Washington D.C. for meetings and trainings. The Project Director will attend an annual Project Director's Meeting and 2-3 staff members will attend a Regional Training in the second and third year of the program. Year 1 total will be \$250 per night + \$250 for one conference registration = \$500. Year 2 and 3 total will be \$450 per night (x2 people) + \$500 per registration (x2 people) = \$1,900. The total will be \$2,400.

Equipment

Equipment needed for this project that will be used throughout the project includes computers and printers. This includes 6 computers for all study personnel and 3 printers to print the surveys, with a total of \$10,000.

Supplies

Supplies are needed to support the implementation of bi-weekly and monthly staff trainings, demonstrations, workshops, and meetings. This includes paper copies of health education materials, reports, and snacks for staff meetings. Meeting and training supplies include printer paper, printer cartridges, binders, markers, pens, and notepads. Community fair supplies include paper for flyers, snacks, paper, pens, and markers. Parent night supplies include snacks, paper for flyers, and printer cartridges. It also includes research incentives given to the 3 participating schools. Total \$35,850 for year 1, and \$5,800 years 2 and 3. The grand total is \$47,450.

Other

We request funding for a computer software to assist with program tracking, implementation, and fidelity throughout the program. Total \$500.

Indirect Costs

The Center for Health Equity negotiated F&A rate for non-research applications is 31.5% in FY21.

Appendices

Appendix A – Gantt Chart

Tasks	Year 1				Year 2				Year 3			
	Q1 (July- Sept)	Q2 (Oct- Dec)	Q3 (Jan- March)	Q4 (April- June)	Q1 (July- Sept)	Q2 (Oct- Dec)	Q3 (Jan- March)	Q4 (April- June)	Q1 (July- Sept)	Q2 (Oct- Dec)	Q3 (Jan- March)	Q4 (April- June)
Planning												
Creating partnerships												
Creating curriculum/materials												
Data Collection												
Baseline												
Mid-year												
Follow up												
Implementation												
Environmental & PE components												
Community fair												
Parent Q & A												
Follow up												
Final meetings with school staff												

Appendix B – Logic Model

Inputs	Activities	Outputs	Outcomes – Impact		
What we invest: Program Staff Time Research base Center for Health Equity Partners JCPS LMPHW Louisville community members Curricular supports Jefferson County Board of Education	What we do: Conduct Trainings Demonstrations Workshops Bi-weekly/Monthly meetings Data collection Community Fair Parent Night Develop PE curriculum Health education and communication materials Teacher and student resources Deliver Environmental and PE component Provide Mentoring from research staff Assess Fidelity Feedback	Who we reach: Participants High school females Agencies JCPS Decision-makers LMPHW Goal: Increase physical activity rates among high school female participants by 30%	Short	Medium	Long
			Short term results: Learning Girls learn health education materials Girls learn new PE activities Attitudes Self-efficacy Parent engagement	Medium term results: Action Girls perform new PE activities Girls engage in or show knowledge of new health education materials Practice Self-efficacy Parent engagement	Long term results: Action Increased physical activity rates among participating schools Participation JCPS continues some form of this program Aspirations Students plan to increase physical activity outside of PE class

External Factors
 Student attrition; Family dynamics; Program staff and student turnover; Student injuries

Assumptions
 Using JCPS as the program setting will have a positive impact on female student participation; Extra support from the community and parents can increase physical activity during and outside of school

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