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Combating the Sedentary Lifestyle in a Rural North Carolina Community

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by

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Abstract

A rural North Carolina community is experiencing an increase in inactivity, obesity, and comorbidities. The project leader collaborated with the local health department and recreation department to implement community walking events. The events aimed to promote physical activity while providing education to the residents as to why physical activity is important. The project leader used optional pre-walking event and post-walking event surveys to assess activity change and increased knowledge. Out of the 90 attendees, 68% completed the pre-event survey and 14% responded to the post-event survey. This created limited data available for follow-up. All participants who completed the follow-up plan to either start or continue to exercise. The majority (>70%) learned something new about physical activity and the negatives of inactivity through the education provided.

Keywords: physical activity, walking, health, inactivity

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Problem Recognition

Physical inactivity has increased over the last 5 years in this rural community and is now up to 30% (County Health Rankings & Roadmaps, 2021). Physical inactivity has increased by 6% from 2019 to 2021, possibly affected by the pandemic. Multiple comorbidities including obesity and diabetes have increased alongside physical inactivity. Obesity has increased by up to 38% in 2021 which is a 7% increase from 2016 (County Health Rankings & Roadmaps, 2016-2021). Diabetes has increased by 6% up to 17% over the last 6 years (County Health Rankings & Roadmaps, 2016-2021). Unfortunately, these statistics only include diagnosed cases so the patients who are left behind due to lack of access to care are not counted. Access to exercise is also measured by County Health Rankings & Roadmaps. Access to exercise includes gyms, fitness centers, and parks in the county (County Health Rankings & Roadmaps, 2022). Access to exercise in this community has remained at 64% for the last 3 years (County Health Rankings & Roadmaps, 2019-2021). This is a decrease from 77% in 2018 (County Health Rankings & Roadmaps, 2018).

In 2017, this community performed a community health assessment that looked for the largest health issues in the county. The top results included mental health, substance abuse, unhealthy eating, and lack of exercise (Caldwell County Health Department, 2017). Programs and initiatives have been created to help individuals with mental health and substance abuse. Unhealthy eating and lack of exercise are still growing problems in the community.

Problem Statement

In this rural community, the rate of physical inactivity has fluctuated over 10 years but in 2021 was the highest percentage at 30%. Lack of exercise increases the chances of comorbidities affecting the residents.

Literature Review

Current literature from the last 5 years was reviewed to determine the positive effects of being physically active, the effects of inactivity, and motivational methods to encourage activity. Physical inactivity is in the top 10 leading risk factors of mortality in the world (Janssen et al., 2018).

Positive Effects of Physical Activity

For many years, it has been known that exercising is "good" for the body and its future health. It is a general statement that needs to be further explained with evidence. Due to medical advancements, humans are now living much longer than they used to. The problem is that they are not living healthier. The body is being taxed with multiple comorbidities which slows down the body and increases the difficulty of aging. This can be linked to the tendency to overeat and not exercise (Duggal et al., 2019). Physical activity (PA) is a key factor for living as a healthier person throughout aging. Physical activity can boost the body's immune system to help reduce infection as well as inflammatory disorders (Duggal et al., 2019). Sustained levels of PA in later life have been shown to increase late-life autonomy due to being free from disease/disability and maintaining high cognitive functioning. Exercising can have long-lasting effects on the brain including improved memory, learning, and prevention of neurodegenerative disorders (Rea, 2017). Exercise can affect not only the physical brain but also a person's

mental health. Physical activity can decrease depression/anxiety symptoms by boosting mental health and decreasing stress (Rea, 2017). Exercise can be a strong first-line non-pharmacological choice for patients battling mental health conditions. The known release of endorphins following exercise can create a feeling of euphoria. Physical activity can affect the functioning of other neurotransmitters like serotonin, dopamine, and noradrenaline which shows exercise can work like the commonly used antidepressant class, selective serotonin reuptake inhibitors (Grasdalsmoen et al., 2020).

The World Health Organization (WHO) has recommendations for decreasing incidences of diseases like diabetes and obesity. Diabetes and obesity are on the rise and three recommendations from WHO include cessation of tobacco use, physical activity, and eating a healthy diet. Patients who have a BMI greater than 35 can decrease their risk of developing type 2 diabetes by starting an exercise regimen. Abu-Raddad et al. (2019) used a mathematical model which obtained baseline data from 2016 and created scenarios of reducing obesity, smoking, and physical inactivity separately and simultaneously to see how it would affect the prevention of type 2 diabetes. The focus of this study was type 2 diabetes, but increasing PA can play a part in preventing cardiovascular disease and cancer as well (Abu-Raddad et al., 2019). The risk of hypertension can be decreased through PA by reducing BMI, stress, and insulin sensitivity (Gamage & Seneviratne, 2021). The goal for adults is to complete 150 minutes of physical activity each week but even 15 minutes a day of walking can help create great health improvements (Rea, 2017). This supports that starting small and building up could be an appropriate regimen, to begin with as the individual tries to create a new habit.

Negative Effects Secondary to Physical Inactivity

Lack of physical activity (PA) can increase risks for multiple comorbidities and decrease overall health in the individual. It was found that hypertension is 29% more likely in individuals who do not exercise (Gamage & Seneviratne, 2021). Physical inactivity creates approximately 40% of the risk of cardiovascular disease (Alcantara et al., 2017). Physical activity can be used as means of stress release to prevent the increased stress from creating unhealthy behaviors that are linked to cardiovascular-related events (Alcantara et al., 2017). A person's immunity is directly affected by PA levels. As someone ages, if they are not exercising, they can experience reduced immunity and be more susceptible to infection/illnesses (Duggal et al., 2019). Although poor mental health and inactivity usually hand-in-hand, there are often more contributing factors including substance abuse, obesity, and sleep difficulties. In a Norway university study, 50,054 students were surveyed to assess physical activity (frequency, intensity, and duration) and mental health through short self-reported surveys. In this study, it was revealed that the lack of frequency of exercise was linked to increased self-reports of depression, self-harm, and suicidal thoughts (Grasdalsmoen et al., 2020). In times of great stress, physical activity should be encouraged to help release endorphins and improve overall mental and physical health.

What Prevents or Promotes Physical Activity

Physical activity **(**PA) tends to decrease with age. Unfortunately, obesity tends to increase with age and decreased levels of education (Ahmad et al., 2017). Physical activity needs to be initiated and continued through the lifespan to decrease the risks of snowballing into a list of comorbidities. Physical activity is usually seen more frequently

in men of all sizes than women. This study revealed men were twice as likely to exercise than women. Overweight/obese individuals are less likely to participate in high-level intensity PA which is needed to see changes in weight (Ahmad et al., 2017). One barrier towards exercise perception is fear of discrimination. Weight-based stigma can prevent overweight/obese individuals from entering exercise facilities. This can increase the risk of becoming overweight and being unwilling to enforce health behavior changes (Deane et al., 2018). This occurs more frequently in females due to harsh self-perceptions. Females tend to believe they are more overweight than they really are, and males will not realize the truth about their weight status. Females are more susceptible to weight-based stigmas. The higher levels of stigmatization lead to lower levels of motivation and less reported activity (Deane et al., 2018). Weight loss through PA can be filled with more stress instead of motivation when judgment is involved (Oh et al., 2017). On the contrary, males would experience increased motivation and frequency of activity if stigma experiences occurred (Deane et al., 2018).

If people understood how changing one positive health behavior such as adding physical activity could reduce the risk of a large percentage of health disorders/diseases it could help motivate them more than the average weight loss goal (Janssen et al., 2018). This is in line with the assumption that someone valuing their health is enough to motivate them to become active (Oh et al., 2017). It is important to ensure physical activity (PA) is an attainable goal for individuals of all ages and health statuses. This includes “behavioral and environmental support” (Rea, 2017). When individuals have internal motivation, there is a higher chance PA will be completed and sustained over time (Oh et al., 2017). Oh et al. (2017) conducted eight focus groups for women to

discuss their perceptions of exercising, goals, and beliefs involving physical activity. This data was studied to determine how the goals/priorities of women can be used to make physical activity a more realistic possibility in their daily lives (Oh et al., 2017). It was found that happiness can be sourced from connection to others, leisure activities, and relaxation from daily demands. Success stemmed from contributing to personal and others' completion of goals. Physical activity can be discovered in a positive light by completing it with others to promote personal and others' goals while enjoying the connection to others. It can also be a way to decrease stress and step away from the normal daily demands to do something for themselves. Some women found exercise to bring a sense of community while releasing stress and finding inner peace. It is important to find exercise in a way that brings autonomy, competence, and relatedness for the best chance of continuing it in the long term (Oh et al., 2017). Further barriers include cost, time constraints, and the feeling that exercising is "selfish" since it takes time away from other relationships. Individuals are more likely to continue an exercise program if an accountability partner is established. This "partner" could mean the entire family completes physical activity together or just between romantic partners. The onset of parenthood is linked to a decrease in physical activity due to the new time constraints brought on by children (Jago et al., 2017). Understandably so, family comes first above exercise; it is not considered that the two can mesh. Motivation to begin family physical activity is a way to help parents find the time to exercise without childcare concerns. Parent motivation to complete family exercise was found to rely on the value of exercise. Pressure to do so was negatively associated with family-driven activity levels (Jago et al., 2017). Social support like an accountability partner is a strong influence on the

sustainability of the PA. Individuals are more likely to make changes to their lives, positive or negative if their partner does the same. It was found that PA with a romantic partner can lead to a positive effect after exercising which in return brings greater relationship satisfaction (Gere et al., 2021). This can result in maintaining the exercise routine as each partner motivates the other to continue. Each factor, positive or negative, needs to be considered when trying to promote a positive health change.

Project Needs Assessment

Target Population

The target population for this project was the residents of the county. The residents were the ones who chose to participate in walking events, received educational information, and later completed surveys.

Stakeholders

The health department of the rural NC county was identified as the highest priority stakeholder. The success of this project directly benefited their mission of creating a healthier county. The health department also had the power to turn down the project before it reached the residents. The Parks and Recreation Department within the county was also a stakeholder. The Parks and Recreation Department had the authority to allow the use of the local parks. The next stakeholder was the residents of the county. It was vital to keep the residents informed and make sure the education and event notification was effectively spread throughout the county to not exclude individuals.

Organizational Assessment: SWOT Analysis

The chosen organization for this project was the county itself, as well as the residents that reside within the county. The strengths included the health department's

recognition that physical inactivity was a problem and that the health department saw many patients with varying social determinants of health. The main weakness was residents who were not willing to change or to complete the intervention. For that segment of the population, there was no desire to make any changes to their current regimen. Current opportunities include the multitude of parks/walking trails in the community. There was also an opportunity to partner with local businesses to receive donations for raffles. Further, there was the opportunity for the Parks and Recreation Department to waive fees for use of the park. One threat was the existence of weight and body image stigmas. If fees were not waived for use of the park for the events, the cost of park use could have become a threat to the program.

Available Resources

Local parks and walking trails were free to use and open to the public during daylight hours. The walking events could be hosted at a park for no cost, as it was approved by the parks and recreation department. The local newspaper had an event calendar and there was no charge for advertising events. The events were printed in the newspaper and available online. The health department's public health director was working as the project practice partner. The health department was a vital member of the team to ensure the information was shared with patients who would benefit the most and may not have heard about the events through other modes.

Desired Outcomes

The desired outcomes for this project were broken into three categories attendance, changes observed in survey data responses, and continuation of physical activity following the events. Although hard to predict, a minimum goal of at least 20-30

residents at each event was set. Attendees were asked to fill out an initial survey at the event and an additional follow-up survey which was sent out at the completion of the event series. Ideally, a change or improvement in the number of physically active residents would be seen. Lastly, it was a goal that residents would continue to exercise after the program was finished. This can be seen by county-wide data trends including County Rankings & Roadmaps each year.

Team Selection

The members of the team included the health education department of the health department, the director of Parks and Recreation, unpaid volunteers, and the residents of the community. The health education department provided assistance in project planning, advertisement, and execution. The Parks and Recreation department allowed the use of the parks for the three events. The unpaid volunteers assisted at each event to make sure each resident was checked in, completed the intake survey, and was given the correct amount of raffle tickets throughout the event.

Cost/Benefit Analysis

Physical inactivity has been on the rise. This county had continued to trend in a negative light, seeing continued increases in physical inactivity, obesity, and diabetes prevalence. This project was the stepping stone to initiate physical activity in individuals within the county to promote a healthier future. Table 1 reveals the costs for the project.

Table 1

Project Cost Analysis

Item Name	Quantity if Multiple	Total Price
Baskets	3 Baskets	$4.38
Cellophane	2 Rolls	$7.96
Exercise Material/Books for Baskets		$19.25
Thank You Cards	2 Boxes	$3.76
Hand Hotties for Event	(14.99 per box)	Donated
Water Bottles for Event		Donated
Laundry Baskets for Raffle	3 Baskets	$14.91
Frames for Table Signs	4 Frames	$20.00
Walmart Gift cards	3 $50 gift cards	Donated
Other Basket Items	N/A	Donated
Brochures	From Stallings Printing	$55.00
Event Banner	1 Banner from Stallings printing	$50.00
Ribbon for Baskets	1 roll of Ribbon	$1.48
Flyers	200	Printing donated
Pre-Surveys	200	Printing donated
Punch Cards	200	Printing donated
Email Slips	200	Printing donated
Bright colored Cardstock	1 ream of 250	$10.00
Pens		$5.40
Raffle Tickets		$11.69
Containers for Papers		$10.00
Tape/ Duct tape		$12.63
Locked Box for Storage		$13.69
Lock		Free (gift card used)
Ice	2 bags per event	$18.00

Item Name	Quantity if Multiple	Total Price
Volunteer Stickers	24	Printed at Home
Clipboards	4-small, 4-large	$14.60
Hole Punchers	4	$6.08
Raffle Ticket Jar	1	$1.25
Envelopes for Donations	1 Box	$1.25
Sweatshirt for Event	1	$9.98, printing donated
Total:		$291.31

Advertisements per the local newspaper, health department Facebook page, and local radio station calendar were free of charge. The original projected cost was $437. The total costs were $145.69 under the projected cost.

Scope of Project

Three walking events were held at the Broyhill walking park. The events were held on three Saturdays. Each event lasted 1 hour, and individuals were welcome to come and go as they pleased. Individuals who attended the events were asked to check in and complete an anonymous survey about their physical activity habits and history. The surveys were completely optional. The surveys were placed in a locked box upon completion. The residents were given an educational brochure at the end of the events about the positive effects of being physically active and the negative effects of being inactive. Residents were offered water and hand warmers throughout the event. Each resident who attended the event was provided a punch card upon check-in. The Broyhill walking park forms a circle walking track that equals 0.5 miles. After every lap, the individual was given one punch on their card which was turned in at the end for raffle tickets that were entered into a drawing. The more the individual walked, the more chances they had to win the raffle basket. This motivated the individual to exercise at the

event. The event was also a community event that provided a chance to fellowship as a community or spend time with friends and family while completing the physical activity. The raffle drawing was completed at the end of each event. The attendees were given the option to provide contact information if they wanted to leave the event prior to the drawing. Each time the raffle winner was at the park at the time of the drawing. No contact information was needed. This same schedule for the event occurred for a total of three events. At the end of the third event, an online survey was sent to every individual who attended and provided an email address at check-in. This survey also asked about physical activity habits, history, any new lifestyle changes, and feedback regarding the events.

As previously stated, this project was to be a stepping stone to initiate physical activity. The project addressed the positives of being active, the negative effects of inactivity, motivational methods, and willingness to participate. It was up to the individual to continue to walk or engage in other forms of physical activity for their personal health improvement. Ideally, the health department can take the data found and recognize the benefits that this type of program would have within the community.

Goal, Objectives, and Mission Statement

Goal

The primary goal of this project was to increase the number of physically active residents in this rural community.

Program Objectives

- Residents of this rural community would attend up to three of the walking events during Fall 2022 at the Broyhill walking park.

- Residents would fill out a pre-intervention survey at the walking events.
- Residents would be followed up with a post-event survey.
- Residents would understand the education on the importance of exercising, the weekly goals for adults, and the negative impact of being sedentary.
- Residents would be motivated by community time and raffle entries per lap walked at each event.
- Residents would learn that walking is one of the easiest beginning forms of physical activity.
- Residents would learn that walking is safe for many health conditions with minimal to no risk.
- Three events would occur over a 6-week time frame.
- Surveys would be provided at the event and after all events are completed.

Mission Statement

Preparing residents in a rural community for a healthier lifestyle by experiencing community exercise through simple walking events was the mission of the project. Each event was hoped to be the stepping stone to a new personal exercise journey.

Theoretical Underpinnings

Nola Pender's Health Promotion Model is the theory that was used to drive this project. Pender's Health Promotion Model is used to direct and improve a person's well-being. Well-being is more than the absence of illness or disease. The three components of the health promotion model are an individual's characteristics/experiences, behavior-specific cognitions, and behavioral outcomes (Murdaugh et al., 2011).

An individual approaches health change differently than another due to prior experiences and personal factors (Murdaugh et al., 2011). It was a goal of the project to acknowledge these differences and make a healthier life change attainable for everyone no matter their past. The behavioral-specific cognitions may be the same or unique for each individual. Each person may have different beliefs on why physical activity is good for them or why not exercising can cause harm. The individual may find their own perceived or true barriers to exercise. The individual had to be able to find a level of personal capability in order to attend the walking events and begin to make a change. The individual needed the pure intention to make a change in order for change to occur. Interpersonal and situational influences can alter or change the path at any point during the potential health change. This project hoped to enable the residents and reduce as many barriers to exercise as possible. Lastly, the individual must have an end goal in mind when beginning a new health path (Murdaugh et al., 2011). The goal may start small (for example, attending walking events). The hope was that the goals will continue to expand until the individual can complete the desired amount of exercise per week. Each resident would need to experience a self-initiated attempt for change by making the first step of attending one of the walking events. The appendix illustrates the conceptual, theoretical, and empirical diagram for this model.

Work Planning

Timeline

Figure 1 is a GANTT chart used to show the appropriate timeline for the duration of the project. The majority of the project timeline was consumed by research, planning, design, and approvals. The implementation portion of the project took approximately 2-3

months due to the park's availability and unforeseen circumstances (for example, inclement weather). After implementation, the data was reviewed and interpreted during the allotted time for project review.

Figure 1

Combating the Sedentary Lifestyle in a Rural North Carolina Community GANTT Chart

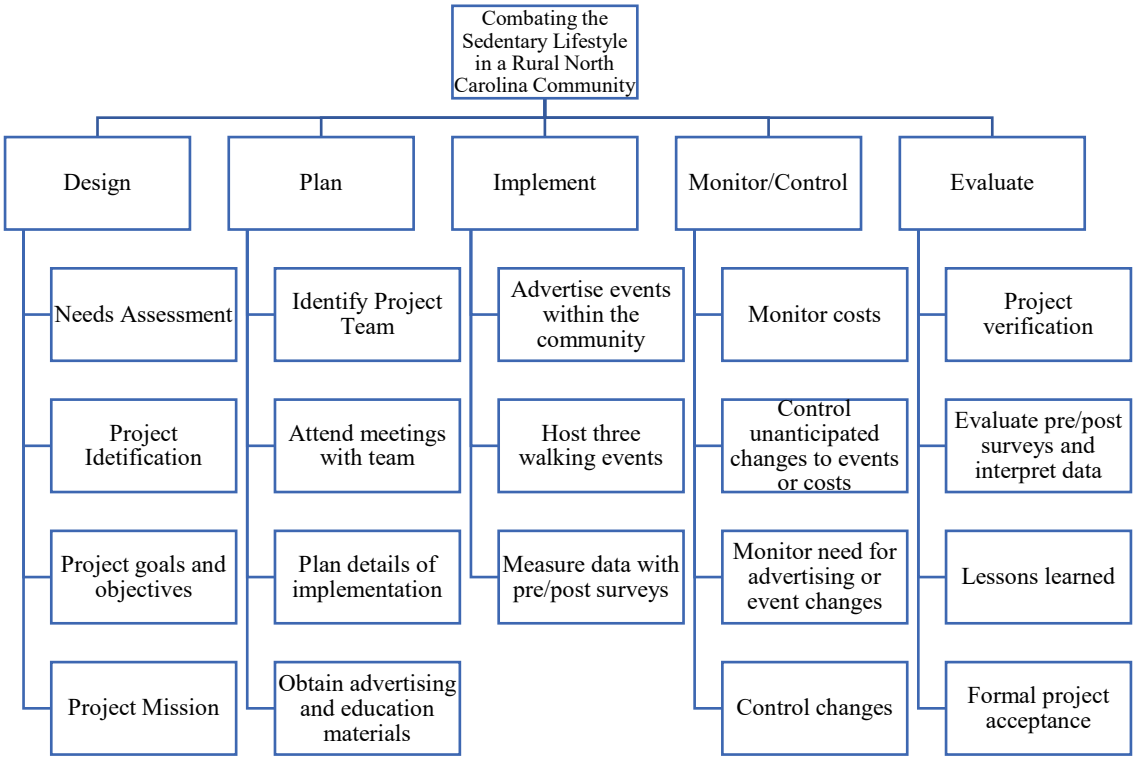
Combating the Sedentary Lifestyle in a Rural North Carolina Community	January-May 2022	May-July 2022	August 2022	September 2022	October 2022	November 2022	December 2022	January 2023	February-March 2023
1. Research									
2. Planning									
3. Institutional Review Board Approval									
4. Project Implementation									
5. Project Implementation Review									

Work Breakdown Structure

The project’s work breakdown structure can be viewed in Figure 2.

Figure 2

Work Breakdown Structure



Evaluation Planning

Figure 3 reviews the Logic Model Evaluation. It covers the inputs, constraints, activities, outputs, and expected outcomes for this project. The model illustrates how the project leader has worked with the health department and parks and recreation departments to create a schedule for the three events, advertising avenues, attendance measures, and education/survey distribution. The expected outcomes include event attendance, increased knowledge, and interdepartmental collaboration.

Figure 3

Logic Model Evaluation Tool

Logic Model						
				Outcomes		
Inputs	Constraints	Activities	Outputs	Short Term	Long Term	Impact
Personnel	Internal will	Events	Number of Participants	Attendance & Participation	Behavior Improvement	Long-term health change
Time	Personal and department schedules	Events and education	Three events and education provided	Increased knowledge	Increase in internal motivation	Long-term motivational change
Materials	Time frame	Advertisement, Education, Surveys	Attendance, participation, and number educated/surveyed	Increased participation and education	Increased internal motivation	Long-term motivational change
Facilities	Local park schedule	Schedule development	Hosting events on three days	Parks department and health department collaborating	Continued affiliation with the health department events	Continued collaboration

Implementation

Threats and Barriers

The main threat was the weather conditions. The events were all completed on a Saturday at 11 am. The first thing that should change if the events were continued would be the time of year. The events were held in November or December. The weather on each event date was cold and dreary. There were chances of rain on the second two event dates. No events were officially canceled for rain. There was a concern that potential participants changed their minds about attendance due to the poor weather conditions. The health department attempted to promote the “rain or shine” news to help prevent individuals from not attending.

The main barriers that hindered increased project success included traffic conditions, means of advertising, and willingness to participate. The first event could

have had a decrease in attendance due to traffic conditions. An automobile accident occurred at the traffic light that leads to the park. It is possible that some individuals were unable to get past this unforeseen circumstance which interfered with their attendance. Advertising was completed through the health department's social media, newspaper calendar, flyers at the health department, county buildings, parks, recreation centers, and door-to-door flyer distribution. If a resident did not visit one of those places, receive the newspaper, have social media, or follow the health department's page then they may not have heard about the walking events. Unfortunately, this was the reality of one person trying to advertise to a county with limited funding. The last known barrier was a lack of willingness to participate. The park was open to the public throughout the events so there were individuals who were at the park for personal exercise and did not want to participate in the event. Each individual was asked about participation, but not approached further when they declined participation. Another barrier was survey completion. The pre-survey provided at the event was optional. Out of the total 90 participants, 62 filled out a pre-survey on the day of the event. Participants were also given the option to leave an email address to receive a post-survey link after the completion of all three events. Only 16 people accepted the option to leave an email address. Out of the 16 who received the post-survey, 14 responded. It was an expected barrier that not every participant would want to complete a survey or leave an email address.

Monitoring of Implementation

Goals and Program Evaluation

The goal of the project was to increase the number of physically active residents in the rural community. The short-term evaluation of this goal was seen through residents attending the walking events and completing a physical activity at those events. The long-term evaluation of this goal will be seen over time through County Health Rankings and County Health Assessments. The project only reached a small portion of the community. The hope is that what was learned or taken away from the event/events was shared with friends, family, and the community to continue the growth in the number of active residents.

Objectives and Mission Statement

The project objectives were met through successful community walking events. Three events were held within a 6-week time frame. Pre-intervention and post-intervention surveys were distributed to those who were willing to complete them. Educational brochures were offered to all participants. The brochure provided education on the positives of being physically active and the negative effects of inactivity. It discussed weekly goals for adults and the benefits of walking. The residents appeared to be motivated by the raffle drawings held at each event. Prizes made the residents strive to complete the maximum number of laps walked during the allotted time frame for each event. There was also a high percentage of return walkers who came to events two and three.

Although it is up to the individual to take their experience and turn it into a new personal health journey of increased physical activity, providing the outlet to begin exercising and providing education was successfully completed.

Timeline

The goal timeline was followed by successfully implementing it during November and December 2022. Implementation records and data review occurred during January and February 2023 as previously planned.

Project Closure

The project planning and implementation were completed and the objectives were met. Each community walking event has occurred. All surveys, paper and online, have been returned and analyzed.

Interpretation of Data

Quantitative Data

This project used pre and post implementation surveys to assess quantitative data.

Pre-Survey Data

The total number of event participants across the three events was 90 residents. Of the 90 residents, 62 of them agreed to complete the optional pre-survey. The pre-survey had six questions. The first question was to assess the age ranges of participants. The largest age demographic was 18-40 years old at 50%. Ages 61-80 followed at 26% and lastly 41-60 had 24% of participants. There were no participants over the age of 81. The second question asked if the individual attended the event alone or with someone. The answer choices “with family” and “with a friend” are tied at 35.5%. Following those,

18% attended the event alone, and 11% selected “other”. The three events had a variety of ages and most individuals arrived with someone else.

The third question was one of the most important assessment tools. It asked, “Do you currently exercise?” This question was included to see if those who do not exercise were reached or motivated to attend. Out of the 62 who completed the surveys, 69.4% answered they do exercise. This was followed by 27.4% who occasionally exercise and only 3.2% who do not exercise. If an individual indicated they do not exercise, this is where the survey stopped. Those who indicated they routinely or occasionally exercised continued the survey. Questions four, five, and six asked more in-depth questions about the exercise that is being completed.

Question four looked for the frequency that the individual exercised. Out of the original 62, 60 individuals continued the survey past question three. Out of the remaining 60, 42% selected they exercise a couple of times a week which was closely followed by the 38% that exercise daily. Twelve percent indicated they exercised every other day and 8% selected a different non-mentioned frequency. The participants were then asked about the location where they complete exercise. Multiple answers were allowed on this question. The total answering participants were 60 but 87 responses were given for this question. Out of the 87 responses, the top responses were 35% use a gym, 28% exercise at a local park, and 24% exercise at home. Ten percent indicated a location not provided on the survey and 3% use a pool or recreation center. The final question requested information on the duration the individual typically exercised. The top choice was 31-60 minutes at 60%. Second most chosen option was 15-30 minutes at 23% and 17% stated they exercise longer than 61 minutes.

Post-Survey

At each event, the participants were offered the opportunity to leave an email address so that a follow-up survey could be sent at the completion of the events. Out of the 90 total participants, only 16 (17%) agreed to leave an email address. This information has to be considered when reviewing the limited data. Out of the provided 16 who received the survey link, 14 responded. The online survey had a total of nine questions. The first question related to informed consent. If an individual did not consent, they would close their browser at that time. All 14 (100%) consented and agreed to continue. The second question was a demographic question asking for age range. Fifty percent of respondents selected ages 41-60 years. This was followed by 36% ages 61-80 and 14% ages 18-40 years old. Question three asked how many walking events the respondent attended. The highest percentage was 57% which was one walking event attended. The remaining responses included 29% attending all three events and 14% attending two of the events. Question four asked the individual if they regularly exercised prior to the walking events. The majority (86%) said they did exercise prior to the events and 14% did not exercise previously. Question five asked if the individual planned to start or continue exercising and 100% of respondents said yes.

Questions six and seven were included to elicit feedback on the educational brochure. The expected objective would be that the individual accepted a brochure, read it, and learned from the education provided. Question six asked if the individual learned something new about the benefits of being physically active. The majority at 71% said Yes and the remaining 29% did not. Similarly, question seven asked if the individual learned something new about the negative effects of inactivity. The majority at 79% said

yes and the remaining 21% did not. Questions eight and nine were open-ended feedback questions and are discussed in the qualitative data section below.

Qualitative Data

Post Survey

The online post-survey gave the participants an opportunity to provide feedback on any changes needed if the event were held again as well as an outlet to provide general comments. Individuals provided positive feedback and compliments on the walking events. Multiple individuals commented that the raffle gift baskets and community exercise were great means to motivate. The majority of responses were short responses about their enjoyment and willingness to participate again if given the opportunity.

Process Improvement Data

The project met the initial objectives of hosting community walking events, including the community through outreach attempts and providing educational material to those who attended. Paper pre-surveys were completed at the beginning of the walking event, and at the end of all three events, an online survey was sent out. The project goal and mission were to help more residents of the rural community become physically active. The pre-survey showed the majority of those who attended and completed the optional survey already completed some form and frequency of exercise. This shows the events did not reach a large segment of the inactive population. This could be due to advertisements or the lack of willingness to attend. The majority of individuals who attended the walking events came with someone and enjoyed communion with one another. The project aimed for that to be a motivator for physical activity.

The data review between the pre-survey and post-survey is difficult to use as a comparison due to the limited responses in the post-survey. The post-survey discusses knowledge obtained from the educational brochure. Although the majority did find something new learned, there is a portion who did not. This could be due to prior knowledge or not receiving a brochure at the event. The brochures were dispersed at the end of the event so an individual would not have to carry them throughout the event. This would be one thing that should be changed if the event were held again. If the brochure was given in the beginning, the individual could read the material while at the park and it would better ensure each person receives one. The end of each event was more hectic than the beginning. At the end, the raffle drawing was being done, participants had one last chance to complete surveys, and finally, clean up when all participants were gone. It is possible some individuals never received the educational brochure.

The total impact of the project will take time to see effects. The impact is seen in two ways, education learned and increased number of those physically active. Short-term effects were noted by 100% of the post-survey respondents attesting to beginning or continuing to exercise. There was limited post-data collected. As mentioned before, the majority of respondents agreed they learned something new from the educational brochure which shows some immediate impact. The long-term impact will be seen later in forms such as the County Health Rankings website in the following year.

A few items could be altered to help reach those who are inactive in the community and those who did not attend one of the held events. The events could have been held at multiple locations to ensure each area of the county had an event closer to the participant's home. The events could have also been held at different times during the

week. The events were all held on a Saturday at 11 a.m. If the events are held at different times on different dates it could potentially reach other individuals who did not attend the events. Events should be held in spring to see if participation increases. With more time and resources, advertisements could be improved. The more people who were aware of the event would potentially influence the number of participants. Additional avenues of advertisement should be established if the events are repeated.

Sustainability

This project was created in partnership with the local health department. The health department did not have any community programs to promote physical activity. The health department was able to see the attendance, participation, enjoyment, and immediate results of the individuals who chose to come to the community walking events. Final results, data review, and completed product were provided to the health department for records and to help repeat the events in the future. The health department was appreciative of the project leader's interest in the community and the well-being of its residents. The health department saw successes and discussed possibilities of repeating the event in a warmer time of year. The limitations, barriers, and changes were presented to ensure any repeat events would have greater success. The second piece of sustainability will depend on the individual. Each person who attended a walking event was provided with physical activity education and a chance to exercise as a community. The individual now must make the personal decision to continue to be active.

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Appendix

Pender's Health Promotion - Conceptual, Theoretical, and Empirical model