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Secondary Physical Education Teachers' Perceptions of Adolescent Females' Cardiovascular Fitness

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Abstract

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MA, University of Phoenix, 2010

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Project Study Submitted in Partial Fulfillment

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Abstract

Cardiovascular fitness levels in physical education have decreased for males and females in an inner-city high school, with female cardiovascular fitness decreasing the most. Cardiovascular fitness is important because participating in cardio exercises decreases health issues such as obesity and cardio problems. The purpose of this qualitative research study was to explore the views of teachers regarding low cardiovascular fitness among adolescent females in physical education and how a professional development could help teachers to address the problem. Bandura's social learning theory was used as the study's conceptual framework. Semistructured and open-ended interview questions were used to collect data from 6 veteran PE teachers to address the research questions regarding teachers' experiences in promoting cardiovascular exercises, levels of participation in cardiovascular exercises, and perceptions of professional development to help ameliorate the problem. Participant responses to the open-ended interview questions were analyzed by coding common words to create categories to develop themes. Qualitative findings revealed that participants started to notice low cardiovascular endurance in 9th grade, that professional development was not geared towards improving female adolescent activities nor assisting PE teachers in how to model these. A professional development, via the proposed project, was developed that will provide activities that can be used by both new and seasoned physical education teachers. Social change will occur in that implementation of the ideas shared in project may lead to a healthier and physically active lifestyle when students reach adulthood.

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Section 1: The Problem

The Local Problem

The problem studied was low cardiovascular fitness of adolescent female students in physical education classes at a local urban high school on the eastern coast of the United States. In this qualitative case study, I explored the views of teachers regarding adolescent female cardiovascular fitness levels and how low cardiovascular fitness levels can lead to females being overweight and having health issues at the research site. I explored (a) physical education teacher perceptions of adolescent female cardiorespiratory fitness, (b) instructional practices used to increase cardiovascular fitness in adolescent females, (c) how PA plays a role in cardiovascular fitness, and (d) challenges physical education teachers face when trying to promote cardiovascular exercises cardiovascular endurance to increase cardiovascular fitness in adolescent females.

In Section 1, I define the problem and gap in practice that was addressed in this qualitative study, present supporting evidence that the problem exists at local and national levels and provide a review of literature. Schools serve as comfortable access places to achieve health goals such as increasing cardiovascular fitness (Abildsnes, Rohde, Berntsen, & Stea, 2017). This ideal environment provides an opportunity to conquer this fitness goal. At the local research site, teachers found it challenging to find the best method to increase cardiovascular fitness levels in adolescent female students. According to teachers in the district, although different activities are offered and during health classes, students are taught about dangers of having low cardiovascular fitness,

there are many female students who do not participate in cardiovascular endurance to raise cardiovascular fitness. Few studies have been conducted regarding teacher perceptions of low cardiovascular fitness in adolescent females in an urban high school setting, according to my review of the literature.

The research site was in an inner-city environment where most of the students have low socioeconomic status. Sutherland et al. (2016) stated that adolescents from lower socioeconomic backgrounds, such as those at the research site, have less of a chance to meet daily physical activity (PA) requirements. Consistent play and practice of sports are linked with various positive results such as increased fitness, vitality, self-esteem, and a reduction of sickness (Pelletier, Rocchi, Vallerand, Deci, & Ryan, 2013).

The gap in practice addressed in this qualitative study was a lack of knowledge about why adolescent females are less cardiovascular fit and more overweight than adolescent males of the same age at the research site. A study has not been conducted to determine how to help physical education teachers increase cardiovascular fitness in female adolescence nor has professional development (PD) programs been introduced for teachers to address the problem, according to my review of the literature. I attempted to better understand this gap and the reasons teachers gave for low cardiovascular fitness among adolescent females in secondary physical education. I communicated to administrators the importance of creating a focus on this issue in curricular planning and PD.

Definition of Problem

Female students in the United States are less cardioactive than their male

counterparts (Davis, Kathryn, Wojcik, & DeWaele, 2016). In a study of 5,863 students over a 5-year period, on average, adolescent males were found to participate in PA more days per week than females (Davis et al., 2016). The United States struggles with obesity (Van Ryzin & Nowicka, 2013). Rates for childhood obesity have been on the rise. According to the Center for Disease Control and Prevention, childhood obesity had quadrupled in the last 30 years (Davis et al., 2016). More than one third of adolescents in the United States are either obese or chubby (Van Ryzin & Nowicka, 2013). Cardiovascular fitness is an important well-being sign in adolescence. In addition, sustaining appropriate cardiovascular fitness levels is related to prevention of diseases, such as cardiovascular disease, diabetes, and obesity Davis et al., 2016). Over the past 30 years, studies have shown a reduction in CF in adolescents in several countries (Davis et al., 2016). The occurrence of low cardiovascular fitness is critical for this age group (Minatto, Filho, Berria, & Petroski, 2016).

To establish if students are meeting local and state standards for cardiovascular fitness in physical education, the Virginia Department of Education uses the Fitnessgram (Virginia Department of Education, 2016). The Cooper Institute for Aerobics Research, acting on the recommendation of the Society of Health and Physical Educators, developed the Fitnessgram health-related physical fitness test in 1999 (Hobayan, Patterson, Sherman, & Wiersma, 2014). The Fitnessgram test is used to decide if students' physical wellness levels are typical for their age and sex based on Healthy Fitness Zones (Hobayan et al., 2014). The students' scores are assessed against the norm- and criterion-referenced standards (Hobayan et al., 2014). Cardiovascular endurance, the

most important aspect of fitness at the research site, is measured by using the Progressive Aerobic Cardiovascular Endurance Run (PACER) test (Syed, Mohd, Muhamad, & Wail, 2016). The PACER test assesses the strength of a heart, which could add years to one's life (Syed et al., 2016). Students are required to run 20-meter laps between two predetermined cones, reaching each cone in time with an audio prompt (Syed et al., 2016). As the test progresses, the time between the audio prompts decrease (Syed et al., 2016). Students are considered to have finished the test when they can no longer reach the next cone in time with the matching audio prompt for two successive laps (Syed et al., 2016).

Approximately 72% of the students at the research site are African American qualifying it as an urban school (Great Schools, 2017). For the 2016-2017 school year, the research school reported a population of 1265 students. Of these, 921 students were African American, 166 students were Caucasian, 76 students were Hispanic, 64 students were of two or more races/ethnic groups. 38 students were Asian, and 12 students were American Indian (Great Schools, 2017). As reported by the Health and PE director, the research site district and the research site are aware of and concerned about the low physical fitness test scores in the PACER component of the FitnessGram fitness test for adolescent females.

Enter text here. For more information on the content of Section 1, see the checklist appropriate for your study on the EdD page of the Center for Research Quality website.

Rationale

Evidence of the Problem at the Local Level

I conducted this qualitative case study in an urban public school where there was a low level of cardiovascular fitness among females. This determination was based on the different conversations amongst PE teachers regarding female cardiovascular endurance test scores when conducting the PACER (cardiovascular component) of the Fitnessgram fitness test. Adolescent females who do not actively participate cardiovascular endurance activities typically do not score well on PACER (cardiovascular component) of the fitness test. The majority (85-90%) of the males in the classes participate in some type of cardiovascular endurance or activity in PE classes. Because of this participation, male students perform better on the PACER (cardiovascular component) of the fitness test.

Virginia high school students in the ninth and 10th grades are required to take fitness tests. Table 1 shows the percentage of students who passed the PACER at the research site. Table 2 shows the percentage of students who passed the test at the state level. According to the Virginia Department of Education (2016), statewide, 65% of 9th grade females and 61% of 10th grade females passed the PACER component of the 2016-2017 Fitnessgram compared with 70% of 9th grade males and 67% of 10th grade males.

Table 1

Research Site Percentage of Students Who Passed the PACER 2016

Grade	Male	Female
9th	62	56
10th	34	34

Table 2

State Percentage of Students Who Passed the PACER 2016

Grade	Male	Female
9th	70	65
10th	67	61

Although the district's PE curriculum includes a variety of traditional and nontraditional cardiovascular activities such as jumping rope, table tennis, basketball, soccer, and strength conditioning to promote cardiovascular endurance for adolescents, females do not participate in these exercises as much as the males, according to participants. Although many girls do not pass the PACER, they still pass physical education class because the grades from the classroom portion of physical education are averaged in for the final grade. I explored the views of teachers regarding adolescent female low cardiovascular fitness to determine methods to encourage that population to participate in more cardiovascular endurance to raise cardiovascular fitness levels in physical education.

Evidence of the Problem from the Professional Literature

Schools have long been identified as large and economical settings for advocating adolescent cardiovascular fitness (Minatto et al., 2016). The school environment has been a favorable place for the development of interventions because it offers different features that are viewed as facilitating cardiovascular fitness. These include ease of contact with adolescents, time available for implementation of strategies, space, equipment, and

constant health education; social support, and the option of sustaining the intervention (Minatto et al., 2016).

Definition of Terms

Cardiovascular endurance: The maximal amount of oxygen a human can take from the air (Lavie, 2012).

Cardiorespiratory fitness: Engaging in PA that depend on oxygen intake as the body's source of energy and ability to use and transport oxygen (McDonald, Ortaglia, Bottai, & Supino, 2016). I determined cardiorespiratory fitness levels by using the Progressive Aerobic Cardiovascular Endurance Run (PACER) test (Syed et al., 2016), which assesses the strength of a heart. For the PACER test, students are required to run 20-meter laps between two predetermined cones, reaching each cone in time with an audio prompt (Syed et al., 2016). As the test progresses, the time between the audio prompts decreases (Syed et al., 2016). Students are considered to have finished the test when they can no longer reach the next cone in time with the matching audio prompt for two successive laps (Syed et al., 2016).

Modeling: The process in which a person learns a behavior by the influence of an example (Bandura, 1971).

Motivation: The method whereby goal-directed activity is initiated and continued (Chen, Chen, & Zhu, 2012).

Observational learning: The imitation of a model (parent, teacher, or coach) displaying a movement design to simplify motor skill achievement (Ashford, Bennett, & Davids, 2006).

Physical activity (PA): Any movements of the body by the skeletal muscles that result in the disbursement of energy. PA also refers to participation in several different physical activities, play, and sport. (Lauderdale, Yli-Piipari, Irwin, & Layne, 2015; Johnson & Turner, 2016).

Physical education: A process of learning physical context (Croston, 2013).

Physical fitness: The ability of the body to perform efficiently and effectively (Zhu & Chen, 2015).

Skilled demonstration: The act of combining a visual picture with verbal feedback to help students to understand the skill. The teacher should understand the skill and present a mirror image by facing the students but matching the same direction in which the students are moving (Ryan, Maina, & Mokgwathi, 2016). The skill should be shown in different angles and broken down into smaller parts for better understanding (Ryan et al., 2016).

Significance of the Study

I explored (a) teacher perceptions of adolescent female cardiovascular fitness, (b) instructional practices used to increase cardiovascular fitness in adolescent females, (c) how PA plays a role in cardiovascular fitness, and (d) challenges PE teachers face when trying to promote cardiovascular exercises to increase cardiovascular fitness. The results of this qualitative study may give the research site and other secondary schools in the district data that may add to their capacity to improve adolescent female participation in cardiovascular activities to increase cardiovascular fitness. I focused on teacher perceptions of adolescent females who do not participate in cardiovascular endurance

which lower cardiovascular fitness levels. In reviewing the literature, I few found studies of teacher perceptions of low cardiovascular fitness in adolescent females attending an urban secondary school. Females participate less often in cardiovascular activities than males overall (Kastrup & Kleindienst-Cachay, 2016).

Adolescents who do not participate in the suggested 60 minutes daily of high-impact cardio exercises risk becoming overweight as an adult (Frömel, Svozil, Chmelík, Jakubec, & Groffik, 2016). Because adolescence is an important time of growth for forming future adult healthy lifestyles (Draper, Grobler, Micklesfield, & Norris, 2015), it is significant that risk factors for noncommunicable diseases be addressed both for the health as adolescent and as adults. Promotion of cardiovascular fitness should, therefore, begin as early as possible to avoid the possibility of children becoming inactive adults at cardiovascular risk (Weberrub et al., 2017). Risk factors that may lead to diseases include physical inactivity, unhealthy diet, and obesity (Draper et al., 2015). Obesity has been shown to be a critical health issue globally among both children and adolescents (Draper et al., 2015). The Centers for Disease Control and Prevention has published a guide, *Community Preventive Services* (Fielding, Teutsch, & Koh, 2012), featuring a combined built environment intervention. This approach advocates more parks and recreational environments to encourage the standard of walking, bicycling, and climbing stairs instead of driving and riding escalators or elevators (Fielding et al., 2012). Without narrowing the gap between adolescent females and adolescent males, low participation in PA, overweight, or obesity may continue to be a problem causing health issues such as

diabetes among adolescent females in urban secondary schools (Leech, McNaughton, & Timperio, 2014).

Research Questions

When final fitness tests are given toward the end of the school year, many adolescent females at the research site score lower on cardio fitness tests than their male counterparts. The purpose of this study was to explore the views of teachers regarding adolescent females' low cardiovascular fitness to determine methods to encourage that population to participate in more cardiovascular exercises to raise cardiovascular fitness levels in physical education. To address the problem of low cardiovascular fitness of adolescent female students and the gap in practice, I created these research questions:

RQ1: What are high school PE teachers' experiences in promoting cardiovascular exercises to adolescent female students?

RQ2: What are high school PE teachers' perceptions regarding adolescent female students' level of participation in cardiovascular exercises?

RQ3: What professional development do PE teachers note would assist them in promoting cardiorespiratory fitness to adolescent females?

Review of the Literature

This review of literature consists of methods to promote cardiovascular fitness and how cardiovascular exercises affect obesity in adolescent females. In addition, this review also covers how Bandura's social learning theory relates to this study. This qualitative study focused on the teachers' perceptions of female student cardiovascular fitness in PE classes. Key terms used *social learning theory, participation, motivate,*

modeling, obesity, social learning theory, physical education, and physical activity. This literature review information was obtained by using Walden University and Norfolk State University libraries.

Conceptual Framework

Social learning theory (SLT) was used as the framework for this study. Social learning is founded on the principle that people can learn by watching others (Mocarski & Bissell, 2016). Bandura's (1977) SLT is a method for learners to learn new behaviors by observing others. The learned behaviors are followed by good or bad consequences (Bandura, 1977). While some actions give wanted outcomes, other actions give unwanted outcomes. Typically, good consequences follow good behavior and bad consequences follow by bad behaviors (Bandura, 1977). Therefore, actions are controlled by the consequence people expect from their actions (Loes & Warren, 2016). Likely, behaviors with good consequences are repeated.

Bandura proposed that social learning has four components (attention, retention, motor reproduction, and motivation) (Bethards, 2014). The first component, attention, indicates the behavior is noticed due to observation. The second component, retention, is how well the behavior is recalled. The third component, reproduction, is the ability to perform the observed behavior. The fourth and final component, motivation, is the desire to perform the behavior. These four components help the learner perform different skills or behaviors modeled by another individual. Özerk and Özerk (2015) stated that by observing an individual modeling (such as a teacher), children can learn exercises and behaviors to promote cardiovascular fitness.

The key purpose of physical education is to influence students' inner motivation and attitudes towards physical activity (PA) and persuade them to continue PA throughout their lifetime (Bendíková, 2014). Schools, especially secondary, are environments where students can spend a lot of time and participate in cardiovascular exercises since they are open from the beginning of the day to late into the evening (Hobin et al., 2017). Lifelong activities such as running, brisk walking, bicycling, or aerobic exercise classes can increase cardiovascular fitness while not in school and after high school.

A PE teacher can serve as a significant model that provide examples of behaviors to observe and emulate (McLeod, 2011). Physical education teachers may set an example for adolescent females by visually being a fit individual. People who are watched are called *models* (McLeod, 2011). SLT states that observational learning can have an influential result. SLT states that people realize what to do and how to perform primarily by watching and imitating good models (Brown & Trevino, 2014). From a social learning perspective, adolescents choose behaviors from people they like, and learn by observing and emulating these behaviors (Brown & Trevino, 2014).

Modeling is learning a behavior by the influence of an example (Bandura, 1977). Social learning modeling impacts learning through educational functions and observers obtain symbolic illustrations of modeled activities (Bandura, 1977). Modeling of necessary exercises from people such as PE teachers for students, encourages proficiency and skill acquisition (Fisher & Frey, 2015). Bandura (1977) stated that watching others and direct experience can affect an individual's behavior. In this proposed qualitative

study, female adolescent participation in cardiovascular exercises may be affected by the PE teacher's behaviors or habits and participation of cardiovascular exercises outside of school. When female adolescent students observe physically active physical education teachers portraying active lifestyles, it may persuade them to do likewise. Bandura (1977) stated that most behaviors shown by people are learned on purpose or accidentally, through the impact of example. By leading by example, physical education teachers could encourage adolescent female students to participate in cardiovascular exercises, which will increase cardiovascular fitness. At the beginning of the school year, teachers model stretching exercises that are expected for the students to perform every day when they enter the gym. The students model the observed stretching exercises from teachers and perform them daily. This example can also be applied to teachers modeling cardio exercises and a healthy lifestyle for students to follow, adolescent females in the case of this proposed qualitative study. For example, a teacher who exercises or leads an active lifestyle would be a good example of a physical education teacher for a student to follow if he or she is trying to lead a physically active lifestyle (Spittle, Petering, Kremer, & Spittle, 2012). Students learn more when time is devoted to active learning, and when the teacher is actively teaching and monitoring how students are progressing (Michel, Cater, & Varela, 2009). For example, a teacher teaching a basketball lesson might devote time to model skills of dribbling, passing, and shooting drills for the students. After the demonstration, the students could have the opportunity to practice the skills to incorporate learned skills in game play later (Renshaw, Chow, Davids, & Hammond, 2010). Good sportsmanship modeling suggests that the students make good decisions

when an unforeseen situation arises in game play or individual team sports (Lumpkin & Stokowski, 2011).

Methods to Increase Cardiovascular Endurance

Fitness testing. Practicing for fitness testing throughout the school year is a method to increase cardiovascular fitness. Preparation for the fitness test can increase cardiovascular endurance by using physical activities such as jogging, walking, running, jump roping, and team sports that involve cardiovascular activities. The Fitnessgram test series was developed in the latter 1980s to determine health-related physical fitness in children. In the last 20 years, Fitnessgram testing has become more popular and is used to test children of diverse physical capacities, fitness levels, and ethnicities **(**Fahlman, Hall, & Lock, 2006; Painter, Krasnoff, & Mathias, 2007). The purpose of the Fitnessgram test series is not the testing of sport-specific fitness such as speed and strength, but physical fitness as it relates to health. A healthy fitness zone (HFZ) is characterized by a score on a specific test that shows a healthy level for that component of physical fitness. For example, the HFZ for the Progressive Aerobic Cardiovascular Endurance Run (PACER) test for a 13-year-old boy begins at 41 accomplished laps.

Teacher participation/modeling. The modeling of skills by physical education teachers that lead a healthy lifestyle may persuade females to participate in cardiovascular exercises CE in PE classes and throughout their lifetime (Schwamberger, Wahl-Alexander, & Ressler, 2017). Parents are not the only influence or role model on a child's development during adolescence. Models such as teachers, coaches, and clergy become progressively more significant in adolescent growth (Brown & Treviño, 2014).

Although peers can also persuade adolescents in one direction or another, when parents and other adults model behaviors, powerful learning takes place (Brown & Treviño, 2014).

There are four components in the development of modeling. The observer must pay attention, retain material (the modeled activity), modeled activities must come from symbolic demonstrations, and there must be a reason for an individual to be motivated to complete the modeled actions (Grusec, 1992). While verbal instruction could clearly influence which action takes priority in achieving an action, children primarily tend to imitate modelled action (Ashford, Davids, & Bennett, 2007). Additionally, research shows that motor skill achievement is significantly improved when someone watches another person perform a skill before practicing it opposed to just orally explaining the skill before practice (Ashford et al., 2006). These findings highlight the importance physical education teachers properly demonstrating the use of correct skill technique for their students.

Over the years, it has been difficult for high school teachers to engage female students in PE (Murphy, et al., 2014). Physical education teachers play a significant role in expediting healthy lifestyles, promoting social and emotional well-being, and developing positive long-term experiences for students (Bennie & Langan, 2015). Educators should use creative and cooperative learning practices rather than give instruction through traditional methods. As a physical education teacher, modeling being physically fit and participating in cardiovascular exercise could promote cardiovascular

fitness in the classroom and gym setting (Schwamberger, Wahl-Alexander, & Ressler, 2017).

Additionally, motor skill technique observations can be stored in long-term memory that can be accessed and practiced later by the observer (Baghurst, Richard, Mwavita, & Ramos, 2015). Physical education teachers have an important role because they possess characteristics that can provide an ideal motivational class climate (Almolda-Tomás et al., 2014). Gold, Petrella, Angel, Ennis, and Woolley (2012) stated that PE teachers can encourage positive lifestyles in their students by setting an example in the way they interact with them, by knowing their students, and by taking a proactive approach. Physical education teachers can help motivate students to be physically active, both in physical education classes and at home (Olivares, Cossio-Bolaños, Gomez-Campos, Almonacid-Fierro, & Garcia-Rubio, 2015).

Physical activity. Physical Activity Guideline (PAG) recommends that youth participate in 60 minutes of PA daily. Several reports show that less than 20% of high school students and less than 25% of adults meet these requirements (Reid & Bolen, 2014). Cardio exercises such as walking, running or bicycling are common cardiovascular exercises activities. Adolescents who participate in cardio are likely to practice healthy physical activities in adulthood (Cheah, Lim, Kee, & Ghazali, 2016). Adolescent females who engage in PA, can possibly prevent obesity throughout their lifetime (Bélanger et al., 2015).

Although fitness testing and instruction takes place in physical education classes in secondary schools, there is a still a great need to promote exercises (Zhu & Chen,

2015) to increase cardiovascular fitness. Low cardiovascular fitness increases the chances of cardiovascular diseases (Zhu & Chen, 2015). Studies show that only 20% of adolescents in over 105 countries meet daily physical activity (PA) requirements. It is suggested that schools provide PE daily for students in K-12th grade for 60 minutes (Whalen et al., 2016). Unfortunately, physical education classes at the research site meet every other day and the days students do not have a physical education class, students may not participate in any exercises to increase cardiovascular fitness.

Participation in high impact exercises (cardiovascular fitness) as a child and an adolescent, shows a positive relationship to low healthy risk factors later in life (Zhu & Chen, 2015). The school physical education curriculum is the main resource for PA and fitness instruction for adolescents (Davis et al., 2016). When students are given a choice of activities to participate, they feel more in control, competent, and supported by their peers and adults (Abildsnes et al., 2017). Adolescents in physical education who enjoy cardio exercises have a better chance of continuing PA as an adult (Cheah et al., 2016; Granero-Gallegos, Baena-Extremerab, Gómez-López, Abraldes, 2012). As a physically active adult, there is a higher likelihood of remaining healthy and combatting diseases (Hobbs et al., 2015).

Because the move from youth to pre-adulthood has been perceived as a time of decrease in PA amongst adolescent females, this period is the best time to begin a PA regiment (Paudel, Subedi, Bhandari, Bastola, Niroula, & Poudyal, 2014). As adolescents enter secondary school, their attitudes change regarding how they feel about physical

education (Dyson, Coviello, DiCesare, & Dyson, 2009). Adolescents acquire most of their PA participation during PE classes on a weekly basis (Dyson et al., 2009).

Findings have shown that the number of days of physical education per week individuals have access to facilities after school, accessible adult supervision and school facilities, number of students enrolled in the school, and opportunities for school sport participation were all positively associated with PA levels. (Niven et al., 2014).

PA has not only physical health benefits but also improves social, mental and emotional health valuing of oneself (Lodewyk & Sullivan, 2016). Research involving the relationship between self-esteem and PA suggests that self-esteem influences adolescent participation in PA. Adolescent girls' PA levels decline with age and have been shown to be less active than males. Local data and the above facts are the major reason that females are the target population to promote an increase in PA (Niven et al., 2014). It has been challenging for physical education teachers to engage female students in physical education (Murphy, Dionigi, & Litchfield, 2014). Research has not only shown the physical and the psychological benefits of PA, but also the relationship between low involvement in PA and obesity (Renfrow et al., 2011).

Professional development. A practice that has been shown to help teachers create new ways to motivate students to participate is the introduction of new activities learned in professional development (PD) sessions, which may lead to increased PA (Kulinna, 2012)**.** PD has been shown to encourage teachers to not only verbalize what is expected, but also modeling the proper techniques and skills of games or activities. To be successful, PD should be content-specific and ongoing (Kaldor & Deutsch, 2013).

Teachers are presented activities to use in their classes to promote participation in adolescent females. The teachers take it back to their classroom and verbalize and model the activities presented at the PD for adolescent females to imitate. Studies show that PE teachers use training programs to improve their teaching style to increase their students' motivation and increase their intent to be physically active (Cheon, Reeve, Et Moon, 2012). The development of teaching strategies to obtain effective motivation are important to attain greater cardiovascular fitness levels (Olivares et al., 2015).

Skill introduction. Another strategy to promote female adolescent cardiovascular fitness in high school is for teachers to introduce skills of the game before game play (Heidorn, 2013). One of the reasons females do not participate is because they feel they may not perform the skill or game correctly (Kiley & Robinson, 2016). Teachers who model skills for game play help to prepare students for friendly competition and participation with other students. Research shows that females would rather participate in individual sports rather than team sports because they feel the activities are not as competitive, easy to schedule outside of school, and more health promoting (Wilkinson & Bretzing, 2011). Teachers who take the time to model skills for a team sport, prepares the female and allows her to feel more capable and prepared to participate (Power, Ullrich-French, Steele, Daratha, & Bindler, 2011). As suggested by Heidorn (2013) when performance improves, the student is more inclined to participate. Teachers who model skills and provide the opportunity for students to practice the skills, increases the likelihood for more participation from students, which leads to better performance (Heidorn, 2013).

Use of active computer gaming systems. Another method for reducing inactive behavior is the use of video technology (West & Shores, 2014). Physical educators are beginning to use development-based gaming innovations, for example, the Nintendo Wii (Perlman, Forrest, & Pearson, 2012). These gaming systems allow participants to participate cardiovascular exercise and enjoy using technology at the same time (Schneider & Zhang, 2013). The Wii has games that promote cardiovascular exercises through dancing to past and present music. Each participant has a controller and they compete by trying to have the most movement per song. Instructors utilize such innovations because students find these tools stimulating, fun, and allow the students to opportunity to participate in a format they enjoy (Perlman et al., 2012). High school students who participate in cardiovascular exercises as they play video games, such as the Wii (Dance) in a physical education class or after-school program, may decide to continue these activities at home (West & Shores, 2014).

Students who would rather compete in activities on a computer, than be involved in physical play, could prevent an active physical lifestyle (West & Shores, 2014). In recent years, adolescents have reduced their daily physical activities because they would rather play with devices, such as those involved with online social networking, rather than participating in PA (Asare & Danquah, 2015). Evidence shows that when played as designed, computer exercise games increase heart rate, oxygen consumption, and acute energy expenditure at rates comparable to light-to-moderate physical activity (Bochner, Sorensen, & Belamarich, 2015). The average sedentary student may enjoy merging the video game with cardio to obtain a physical workout (Bochner et al., 2015).

Parental support in physical activities. Initially, the wellbeing, psychological, social, and enthusiastic improvement of youngsters is the responsibility of parents; time not spent with kids may negatively affect the physical advancement of a child (Fox, Han, & Waldfogel, 2013). Parents determine the activities their children participate in, influence their children's activities by oral motivation, and by being an example (Olivares et al., 2015). Parents impact active participation in PA by providing transportation, encouragement, as well as participating in PA with them (Ning, Gao, & Lodewyk, 2012). The health, cognitive, social, and emotional development of children is the responsibility of parents, but due to jobs and other responsibilities, parents who do not spend much time with their children, may have negative effects on a child's physical well-being (Fox, Han, & Waldfogel, 2013).

The time parents spend away from home also diminishes time spent participating and modeling different physical activities with their children to offset the possibility of becoming overweight. Shen (2017) reported that adolescents participating in school activities or playing sports with their parents were more likely to earn an "A" in Mathematics or English, as compared with their peers who were sedentary. Adolescents who are physically active at home, have a greater chance of being physically active at school in PE (Olivares et al., 2015). Parents can provide emotional social support for their children participating in PA by offering encouragement and providing influential social support by offering physical support such as transporting to PA events (Peterson et al., 2013).

Friends. Cook et al. (2014) found that friends who have the same interests, convictions, and age generally participate in the same exercises. Low activity in females may result in females not able to control their own participation PA. Developing positive PA habits as an adolescent, including regulating exercise intensity, may represent vital skills that initiate lifelong health, mental wellbeing and happiness (Hobbs et al., 2015). When peers participate in PA together, especially in shared PA, there is a definite relationship with their overall regularity of PA (Ning et al., 2012). Adolescent females with physically active friends have higher levels of PA. Also, adolescent females socially supported by friends, family and teachers have healthier eating habits (Kulik et al., 2014). Frequently, individuals have a better grasp on a concept or skill. In this instance, a friend who has a better or understanding of a skill, may be able to model the skill to a friend and motivate her to participate. Many times, in my physical education classes, I observe females practicing cheers. They model or demonstrate the steps to the cheer and their friends practice them until they can perform the cheer successfully. (Cook et al. (2014) noted that young people's PA was increased when experienced with friends. Unfortunately, at the local site, students are not permitted to choose their physical education classes, which means that everyone is not in physical education classes with friends. Females who do not have friends in their classes may not participate as eagerly as if they had friends in the class.

Obesity and Health Conditions

A healthy level of cardiovascular exercises is directly linked with a healthy cardiovascular profile in children and adolescents (Weiyun, Mason, Hypnar, &

Hammond-Bennett, 2016). Adolescents who begin positive habits early in life, such as intense exercise, may maintain essential skills that lead to a healthy lifestyle, mental wellbeing, and happiness (Hobbs et al., 2015). However, present PA levels in children and adolescents are lacking to attain health benefits (Olivares et al., 2015). Adulthood PA is related with healthy habits like not drinking, a healthy diet and body composition. Adolescence is an important time where habits related to a healthy lifestyle are developed, and may continue into adulthood (Olivares et al., 2015).

Typically, children gain weight as they become older (Wilkinson, Brown, Graser, & Pennington, 2012). CE is one method of raising the heartrate to increase cardiovascular fitnesslevels (Ilayaraja, Syedabudaheer, Arunkumar, & K.arthikeyan, 2016). Comparing obesity estimates between the United States (U.S.) and other countries can be difficult because different definitions of obesity are used; however, children in the U. S. tend to have higher childhood obesity rates than children in other countries (Ogden, Carroll, Kit, Flegal, 2012). The comparable obesity prevalence among adolescents age 12 through 19 years in Canada (2004) 11.7%, Mexico (2006) 11.5% and United States (2009-2010) 18.4% (Ogden et al., 2012). Though percentages of overweight and obesity have leveled off among female adolescents, a growing concern still remains that the present prevalence, 32.6% of females age 12-19 years, and ensuing health conditions pose a major health challenge (Kulik et al., 2014). (Usfar et al., 2010) stated that individuals who are obese may experience a higher risk of acquiring serious health conditions such as “non-insulin-dependent (Type 2) diabetes, coronary heart disease, hypertension and stroke, gall bladder disease, certain types of cancer (endometrial, ovarian, breast,

cervical, prostate, colorectal, gall bladder, pancreatic, hepatic and renal) and psychosocial problems" (p. 924). There are several possible contributors to adolescent obesity such as little PA, reduction in resting energy expenditure compared to other activities, less sleep, consuming advertised foods, and consuming more calories while watching television (Braithwaite et al., 2013). Data suggest that adolescents with overweight parents and who enjoy sedentary activities such as television viewing and competing on video games for more than 4 hours a day are likely risk factors for childhood obesity (Bhuiyan, Zaman, & Ahmed, 2013). Since PE classes have skilled and well capable teachers, these classes are considered to the best place to promote and encourage moderate to vigorous exercise (Mayorga-Vega, Parra Saldías, & Viciana, 2017).

Unfortunately, due to technological advances, PA is reduced amongst children and adolescents because more time is spent on a computer. In addition, instead of face to face communication, many adolescents send text messages via cell phones (Mynarski, Nawrocka, Rozpara, & Garbaciak, 2012). Approximately 11% of children and 25% of adults live a sedentary lifestyle. Additionally, over 50% of adults, 62% of young adults and 66% of adolescents do not perform adequate PA to meet recommendations of American College of Sports Medicine (ACSM) (Mears, 2010).

Benefits of Cardiovascular Fitness

An hour of moderate intensity PA daily is important for preventing noncommunicable diseases, improving strength and cardiovascular endurance along with improving self-esteem (Sutherland et al., 2016). Data shows that 72.9% of students in high school do not engage in at least 60 or more minutes of PA daily (Thompson et al.,

2016). Of the two sexes, females are less active than males and PA participation declines as females become older (Niven, Henretty, & Fawkner, 2014). Additionally, in a review of 40 studies of adolescent girls, between 27% and 47% of available learning time consisted of medium to high impact PA, well under the 50% recommended guideline (Hobbs, Daly-Smith, Morley, & McKenna, 2015).

Regular play and practice of sports activities are linked with various positive results. These include increased fitness, vitality, self-esteem, and a reduction of serious illness (Pelletier et al., 2013). PA has been proven to reduce many health issues and obesity (Renfrow et al., 2011). Low PA can eventually lead to obesity in many individuals. Students who make PA a routine as an adolescent may find it easier to stay active as an adult. Individuals who are obese may experience expanded danger of creating critical medicinal conditions, for example, non-insulin-subordinate (Type 2) diabetes, coronary illness, hypertension and stroke, nerve bladder sickness, certain sorts of tumor and psychosocial issues (Usfar et al., 2010).

There are several possible contributors to adolescent obesity such as displacement of PA, less resting energy expenditure compared with different exercises, more sleep deprivation, exposure to advertising and subsequent utilization of processed foods, and expanded caloric consumption while sitting in front of the television (Braithwaite et al., 2013).The literature shows that PA is related to higher self-esteem, positive self and body image, and reduced feelings of depression (Asare & Danquah, 2015). Abildsnes et al. (2017) stated that adolescents enjoy participating in PA in physical education when they are given choices of activities, feel knowledgeable, in control, and supported by friends

and teachers. Increased PA, through the facilitation of teacher modeling, could improve adolescents' overall health status and develop a satisfaction for PA by making fitness activities a lifetime norm.

Implications

The purpose of this qualitative case study was to provide an illustration of six physical education teachers' experiences and perceptions of female adolescents' low cardiovascular exercises in physical education and how to increase cardiovascular fitness. The findings of this study may suggest the need to implement a PD program to provide (see Appendix A) secondary level teachers with skills of how to incorporate additional teacher modeling and promotion of cardiovascular exercises to increase cardiovascular fitness in the gym setting. In addition, this study may encourage positive social change by promoting cardiovascular fitness among female adolescents that could lead to a healthy physically active lifestyle as an adult. The benefits of promoting such a lifestyle is increased fitness, vitality, self-esteem, and a reduction of serious illness. Findings from this study may be used to increase modeling and decrease obesity for secondary adolescent female students. Finally, the PD could lead to improved effective instructional strategies needed to increase cardiovascular fitness amongst adolescent females.

Summary

A professional development program (the "project" see Appendix A) was created to help improve the adolescent female physical fitness participation through cardiovascular exercises by examining and exploring teacher participants interviews. There is a positive correlation between physical fitness and cardiovascular exercises in

physical education. Improvement of PACER fitness scores requires an increase of cardiovascular exercises. When a student is more cardiovascular fit, there is an enthusiasm to participate in whatever activity is taking place. Research has shown that more adolescent females are unwilling to participate in physical activities than boys who are unwilling to participate. It is necessary to address the needs of the adolescent females so that the physical education program can improve participation on all levels within the school district. Additionally, it has been shown that adolescent females who are less physically active in physical education class are less likely to be active outside of class. It is necessary to determine the reason for this tendency. The health and well-being of adolescent females may depend on answering participation problems.

To determine the reasons that adolescent females are not interested in participating, interview questions were asked to investigate the possible reasons for low participation in physical activities. As mentioned in the professional development section, it is significant for the teachers to have an opinion about the professional development. The interviews provided the physical education teachers and administration information regarding the teachers' experiences and perceptions on the current physical education program. An outcome of this research was the development of a professional development program (the project), based on the results of the study.

The problem addressed by this qualitative case study was low cardiovascular fitness amongst adolescent females at an urban high school. The objective of this qualitative case study was to explore views of six veteran teachers regarding adolescent female low cardiovascular fitness to determine methods to encourage that population to

participate in more cardiovascular exercises to raise cardiovascular fitness levels in physical education. This study's research questions were designed to obtain an understanding about physical education teachers' experiences and perceptions about promoting cardiovascular exercises to increase cardiovascular fitness for adolescent females. This research was guided by the conceptual framework of Bandura's (1977) social learning theory, which is founded on the principle that people can learn by watching others (Mocarski & Bissell, 2016).

The review of literature for this qualitative research focuses on themes in data that were gathered on topics related to teachers' experiences, perceptions, and teaching strategies for promoting cardiovascular exercises amongst adolescent females with low cardiovascular fitness. These exercises should be cardio based such as speed walking, jogging, and jump roping. The review presented evidence-based strategies that secondary PE teachers can use to improve understanding of, readiness for, and methods for motivating adolescent females to participate in exercises to increase cardiovascular fitness. Since there has not been much research documenting physical education teachers' perspectives and experiences pertaining to modeling cardiovascular exercises to promote cardiovascular fitness for adolescent females, it is justified that this proposed research is conducted.

In Section 2 of this exploratory qualitative case study, I will describe the methodology that will be utilized. This section consists of an explanation of the proposed qualitative case study research design that will be employed. The standards for choosing participants for this study will also be described along with the methods for forming

researcher-participant relationships. The measures taken to protect possible participants are summarized, and data collection and analysis are explained. Finally, limitations of the research will be described. In addition, future implications, applications, and direction of future research will be addressed.

Section 2: The Methodology

Research Design and Approach

The problem studied was low cardiovascular fitness of adolescent female students in PE classes at a local urban high school on the eastern coast of the United States. In this qualitative case study, I explored the views of teachers at the school regarding adolescent female cardiovascular fitness levels and how low cardiovascular fitness levels can lead to females being overweight and having health issues. I wanted to gain insight on methods to encourage adolescent females to participate in more cardiovascular exercises to raise cardiovascular fitness levels in physical education. A secondary aim was to understand the potential effect of physical education teachers' experiences and perceptions as it pertains to cardiovascular exercises and adolescent females in physical education classes. The qualitative data were collected from interviews I conducted with six teacher participants. I considered the strategies presently used by the participants to help motivate adolescent females to engage in more cardiovascular exercises.

This research design strongly relied on the participants' views of the studied problem (see Creswell, 2009). I determined that a qualitative case study was the best method to use for my investigation. Creswell (2009) defined a case study as an exploration of a program, event, or activity process of one or more individuals in a bounded system. Bogdan and Biklen (2007) similarly described a case study as a thorough investigation of one setting, single subject, or one event. In the case of this study, the bounded system consisted of secondary physical education teachers. Using a

case study approach permitted me to gather data in a natural setting where the problem occurs (see Creswell, 2009).

I endeavored to show teachers' experiences of and perceptions about promoting cardiovascular exercises to increase cardiovascular fitness amongst adolescent females. Currently, teachers at the study site give students open choices to participate in any activity available during their appointed PE class time. Although, sitting down and not participating is not a choice, according to PE teachers, many females choose to do nothing, which plays a factor in their low PACER scores. Typically, students who actively participate in PE perform better academically (Packham & Street, 2019). Researchers have found that increasing the level of CF among this population could lead to less obesity as an adult (Carson Sackett, & Edwards, 2019). I used individual teacher interviews to collect data.

In conducting the semistructured interviews, I followed the Interview Protocol and Questions (see Appendix B) to answer the following research questions:

RQ1: What are high school physical education teachers' experiences in promoting cardiovascular exercises to adolescent female students?

RQ2: What are high school physical education teachers' perceptions regarding adolescent female students' level of participation in cardiovascular exercises?

RQ3: What interventions can assist the teacher in promoting cardiorespiratory fitness adolescent females in physical education classes?

In Section 2, I describe the methodology used in the study. This section also includes an overview of participant selection, data collection, data analysis, and validity and reliability. I also consider the limitations of this study**.**

Qualitative Research Design and Approach

For this study, I chose a qualitative design to examine teachers' perceptions and experiences of adolescent females and low cardiovascular fitness. I wanted to gain insight on strategies to increase cardiovascular fitness to help more female adolescent students pass the cardio component of the fitness test used at the research site, how to encourage adolescent females to continue cardiovascular exercises to decrease their chance of being overweight as an adult, and how teacher participants perceive the challenges they face when motivating adolescent females to participate in cardiovascular exercises to increase cardiovascular fitness. During this research, I discovered techniques teachers in the study used to promote cardiovascular activity among their female students.

I considered other qualitative research designs but opted against using them because they did not meet the intent of the study of increasing cardiovascular fitness among the study population. I did not choose a quantitative design for the study because I want to garner a more in-depth understanding of the problem by using effective probes during teacher interviews (see Lodico, Spaulding, & Voegtle, 2010). A case study design was the best method to gather data and obtain insight as well as an understanding of a small group of teachers in a bounded system and their perceptions of adolescent females and low CE. I decided against the use of an ethnographic design because I did not focus on cultural groups in their natural setting over time (see Creswell, 2009). I did not study a

distinctive cultural group in their natural setting. I did not attempt to discover a new theory from my research; therefore, grounded theory (Merriam, 2009) was inappropriate. A phenomenological research study, which researchers use to examine someone's life experiences (Merriam, 2009), was also inappropriate because I was not following the life of someone or a culture, I was exploring PE teachers' perspectives of adolescent females in PE classes. I also did not choose narrative research, where the researcher studies the lives of an individual or individuals or asks the individuals to tell stories about their lives (Creswell, 2009). Although I asked the teachers in the study to give examples and provide input about their perceptions of adolescent female and low cardiovascular fitness, I did not study their lives.

I completed the data collection process in a classroom at an urban high school located on the eastern coast of the United States after school hours. The participants answered interview questions (see Appendix B) to examine their perceptions and experiences about adolescent females and low cardiovascular fitness. The qualitative data were analyzed by coding and finding common answers to create categories for developing themes. Reliability and validity were established using member checking, peer debriefing, and an audit trail.

Participants

I used purposeful sampling to select a sample of teacher participants. Purposeful sampling involves the researcher deliberately choosing individuals that meet a certain criterion to better understand the central phenomenon (Creswell, 2012). This type of sampling helps researchers in gaining knowledge of useful information, help others

understand phenomenon, and give representation to those who individually may not be able (Creswell, 2010). The certain criterion for this research included (a) teachers who have a physical education teaching certification (b) teachers who taught physical education to adolescent females on a secondary level on the eastern coast of the U. S. in the district (c) teachers with more than 5 years teaching physical education. I sent a total of 10 emails requesting possible participants who met the criteria to participate in the study. Six teacher participants replied and consented to participating in the study. These participants were invited because their jobs require them to motivate students to participate in cardio exercise to promote physical activity.

The location of the bounded case study was an inner city secondary school located on the eastern coast of the U. S. The students are required to have two physical education credits consisting of 9th and 10th grade for graduation. The total enrollment of the school is 1280. Of the 1,280 students, 921 are African American students, 166 Caucasian students, and 76 Hispanic students, 64 are students a member of two or more races/ethnic groups, and 38 students were Asian, and 12 students were American Indian (Great Schools, 2017). Although six participants was a small number, it allowed for the collection of in-depth interviews and rich, detailed, and thick data (Lodico et al., 2010).

I informed the six participants of the study and the participants were free to leave the study for any reason, at any time, without consequence therefore avoiding possible unintentional intimidation. The participants had an interest in the research because it is their place of employment and hopefully are concerned about the future of the students.

Since I wanted to find rich, in-depth data, it was critical to use more than one participant. Creswell and Poth (2018) advised using at least four participants in a single case study because this number allows "ample opportunity to identify themes of the cases as well as conduct cross theme analysis"**.** In addition, Creswell (2012) suggested not to use too many participants in qualitative research because it makes it challenging for the researcher to provide a thorough representation. Because the focus of qualitative research is interpretation and meaning, I utilized six participants.

Participants who have taught thousands of adolescent female students and taught many years of physical fitness instruction offered a sample that generated the needed data. The small number of participants allowed for a concentrated exploration of the research problem and assist with decreasing any validity threats. An in-depth illustration of the research becomes smaller as the participant number becomes larger in qualitative research. (Creswell, 2012). Mason (2010) agreed that a study with "modest claims" (p. 2) has a higher possibility for reaching research saturation in a smaller study.

Procedures for Gaining Access

Initially, I gained a conditional approval to conduct the study from the Walden University's Institutional Review Board (IRB; see Appendix B), because I had yet to receive permission from the school district. The Institutional Review Board (IRB) approved (01-18-19-0365808) forms and the method of research prior to the conducted research. The IRB also confirmed that the research conducted was aligned with the research questions. Once I was granted permission from the school district and Walden's IRB, I gained access to potential participants from the research site's email directory of

secondary PE teachers. After obtaining the email addresses, I informed participants of the purpose of the proposed study by email. I anticipated responses from at least eight potential participants, but after emailing 10 possible participants, I received responses from six participants. The email included an attached consent form for the potential participants to read and reply "I Consent" to the email if they were able to participate in the study. The participant consent form included information such as the purpose of the proposed study, the privilege to ask questions, and the study's benefits (Creswell, 2012). In addition, the participant consent form informed the participants that participation was voluntary and gave the participants the option to stop participating in the study at any time. The participants were advised that the semistructured interview would take 30-45 minutes. Finally, my role in the study is explained.

Researcher-Participant Working Relationship

The participants have never been under my supervision. To ensure the participants were at ease during the interviews, I scheduled the interviews in the school setting that was comfortable for them. I informed the possible participants that the research will be a learning experience for the both of us and the collected data and results would be available for them. As the researcher, I was placed in the position to learn from and with my participants.

Ethical Protection of Human Subjects

While gathering, analyzing, and reporting data, qualitative researchers may encounter numerous ethical matters (Creswell, 2012). A researcher is responsible for reassuring participants are not harmed in any way by deciding to be a participant of the

proposed study. Precise research consent methods must be adhered to before implementing research (Bogdan & Biklen, 2007). Before I met with the participants for interviews, a consent letter was emailed explaining the purpose of the interviews, how the information would be used, confidentiality, and any risks associated with participation (see Appendix C). The interviews were completed voluntarily, and secondary PE teachers could choose to participate.

The interviews were conducted anonymously. The interviews only mentioned that they were a teacher without any mention of name. Any mention of any school names or names of other teachers mentioned mistakenly was omitted to ensure anonymity of the person and school district. The participants were not rewarded in any for participation in the interviews.

As a researcher, I maintained confidentiality and security of information by not revealing participants' identities as an ethical responsibility (Merriam, 2009). I used pseudonyms to protect the possible participants' identities. The identities of all participants in this research was protected by removing characteristic information from the data. Privacy of the participants' answers was ensured because the researcher has kept her data on a personal computer that is protected by a password. The participants will have access to the research for up to 5 years. After the 5 years have passed, the data will be destroyed. The researcher will permanently delete all files associated with the research. Any paper associated with the research will be shredded.

Any risks to the participants were shared before they began, confidentiality was discussed, and the participants told who to contact if there were questions (Creswell,

2009). Since the research was conducted at the participants' natural setting, there was a reduced chance of any risk, indicating that the environment is not manipulated. Also, conducting the research at this site for the participants, reduced the probability for internal and external threats (Creswell, 2012).

Data Collection

The interview questions and protocol can be found in Appendix B. Each teacher participated in one semistructured interview. An interview is a discussion with one or more individuals to gather descriptive data in the participants' own words directed to obtain information from the other (Bogdan & Biklen, 2007). A qualitative interview takes place when researchers ask one or more participants broad, open-ended questions, and record their answers (Creswell, 2012). Creswell (2009) suggested, "Researchers record information from interviews by making handwritten notes, by audio-taping, or by videotaping" (p. 183).

The interviews lasted approximately 10-15 minutes and took place in my classroom after school hours. I scheduled interviews at times that accommodated each participant and did not conflict with instruction time. I gained insight through interviews and determined PE teachers' perceptions and experiences concerning promoting cardiovascular exercises to increase cardiovascular fitness amongst adolescent females with low cardiovascular fitness. Probing questions (see Appendix B) were used to obtain more information. Although I had follow-up questions to several of the initial questions, many of the interviewees answered the follow up without probing or asking the follow up questions. General open-ended questions were asked to allow the participant to freely

respond to questions with their own experiences and perspectives (Creswell, 2009). The interview questions correlated precisely to answer the research questions.

I used my iPhone to record the interview for reliability. As I conducted the interviews, I was able to observe other traits or characteristics of the teacher interviewee and offer in-depth data of the teachers' viewpoints that outside observers may not realize.

Field notes were not as necessary as I thought they would be since I recorded the interviews. A researcher uses field notes to record during observations (Creswell, 2012). I used a journal to write down notes throughout the interview process. Many qualitative researchers use journals to record information (Creswell, 2012). I recorded data such as the participants' reactions and the physical setting. The journal was also used to record my feelings and reflections throughout the research.

Role of Researcher

As the researcher, my role was to obtain the perceptions of the participants regarding how teachers feel in regard to promoting cardiovascular exercises to increase cardiovascular fitness amongst adolescent females in PE by using a neutral approach to the collection of data. I have been a physical education teacher for the last 18 years, 14 which have been served at the research site. I have a Bachelor of Science degree in Health and Physical Education (K-12) and a Masters in Curriculum and Instruction. I have taught PE in public and private schools at the elementary, middle, and secondary levels. As a physical education teacher in a high school in Virginia, I am familiar with the low participation levels in secondary schools.

In addition, I coach track and field year around, which has allowed me to establish relationships with students, parents, and my coworkers. I explained to the participants that they were participating by their own choice. Creswell (2012) states that bias can be reduced by using language to avoid demanding attitudes, biased assumptions, and assumptions that suggest bias due to gender, sexual orientation, racial or ethnic group, disability, or age. In addition, I did not discuss the study except when I collected data. The written data was kept folders until it was transferred onto a personal computer, in a folder, protected by a password.

It was my obligation to gather perceptions of teachers and female students at the research site. I interviewed the participants and organized the information for data analysis. Creswell (2009) pointed out that it is the responsibility of researchers to provide "rich, thick descriptions" when describing the "setting, participants, and themes of a study" (p. 191).

Researcher's experiences and biases related to the study. My role as the researcher was to conduct interviews, record the data, obtain data from the created questionnaire, and analyze its content. Since I am the only person collected and analyzed data, researcher bias could have been a possible issue. To lessen possible bias, I followed a stringent process and procedures for data collection and analysis. I separated myself from my professional role and focused on stating exact data. I managed the interviews with a composed disposition towards the participants, never lending my thoughts and listened to participants and state their accounts. As a physical education teacher, I wanted to learn more about my profession and understand how to better promote PA with female

students in physical education. It was my obligation to explore and learn how the participants view teacher modeling and promoting PA in female students at the research site. Also, since I know the participants in the research, I had to be careful that my participants did not feel coerced to participate in qualitative research (Creswell, 2012).

Data Analysis Results

The data analysis process began after the data collection was finalized (the last interview). The intention of this qualitative study was to gain an understanding of physical education PE teachers' perceptions and experiences about promoting cardiovascular exercises to increase cardiovascular fitness amongst adolescent females and to interpret the results in local urban secondary schools on the eastern coast of the United States. It was essential to select the most appropriate methods of data analysis to guarantee that the data was treated scientifically, and the conclusion drawn was validated.

According to Creswell (2012) the researcher should follow six steps to complete analyzing and interpreting data. I followed the steps suggested by Creswell (2012):

1. Organized and prepared data
2. Coded data
3. Use coded data to create themes or categories
4. Represent and report findings
5. Interpret findings
6. Validate your findings

To minimize factors concerning the validity of the findings, two measures were implemented as prescribed by Creswell (2012). First, I conducted and recorded

interviews using an iPhone. Secondly, I transcribed the interviews using the TranscribeMe app. After the interviews were transcribed, I removed all recognizable information to guarantee the participants' privacy and confidentiality. After transcribing, I checked the transcription against the recording to make certain that it was transcribed correctly. Member checking allowed the participants to verify that the data was accurate and to confirm that what the research interpreted from the interview was fair. Member checks also helped to guarantee the validity of the study (Merriam, 2009). I emailed a copy of the transcribed data to each participant. Each participant reviewed her or his interview transcription to confirm the transcribed responses were accurate. Each participant responded. I received a response from one participant to have an answer modified. I corrected and sent the corrected transcription back to the participant. The participants were able to make suggestions to guarantee their experiences were properly depicted (Merriam, 2009). The participants replied to the email with the transcribed interviews within two to four days. I started the analysis process once the data was collected and verified by the possible participants.

Coding is a way to distinguish different sections of information that portray related facts and marking these parts utilizing general category names (Lodico et al., 2010). It is essential to select the most appropriate methods of data analysis to guarantee that the data are treated methodically, and the conclusion drawn can be validated. The data gathered from interviews that gave insight from the physical education teachers' perspectives, was analyzed and coded by dissecting the interviews into tables. I used selective coding. I read through my transcribed interviews and found common answers

and the frequency of common answers from the interviewees of the same question. Next, I grouped like data together. A color-coding system was utilized to connect similar themes to support an organized process (Creswell, 2012). The similar data were coded by being grouped on a chart (Creswell, 2012). Creswell (2012) suggested that interpretive analysis describe themes in relation to the participants' individual views, in addition to, possibly comparing to prior researches. I grouped the common answers and used them to examine how the data correlated to the research questions.

After all text was coded, all code words were listed, and similar code words were grouped (Creswell, 2012). The list of common answers was compared to the research questions and compared (Creswell, 2012). Next, the noncommon answers were deleted reduced to categories of the participants and setting (Creswell, 2012). Finally, a narrative was written to communicate the research's findings.

The data collected from the teachers' interviews were validated using research member checking, peer debriefing, and an audit trail (Creswell, 2012). These three strategies were used to check the accuracy or credibility of the findings (Merriam, 2009). They will be discussed in future pages of this chapter.

Limitations

Because of the nature of the qualitative design and the small sample size, this study will not be generalizable to a larger target population based on this one study of a single school in one geographical area. The study was completed in an inner city secondary school and may be a challenge to relate the results to other geographic areas.

In addition, the study focused on the physical; therefore, the results may not be valid to teachers in core classes.

Data Analysis Results

There are 14 questions on the Interview Protocol and Questions (see Appendix B) in which data were collected and analyzed by creating categories. The interview questions were used to answer the following three research questions:

RQ1: What are high school physical education teachers' experiences in promoting cardiovascular exercises to adolescent female students?

RQ2: What are high school physical education teachers' perceptions regarding adolescent female students' level of participation in cardiovascular exercises?

RQ3: What interventions can assist the teacher in promoting cardiovascular fitness amongst adolescent females in physical education classes?

First, I gathered, prepared, and organized raw data from the Interview Protocol and Questions (see Appendix B). The data were transcribed, and then coded and themes were grouped together and assigned to the research questions based on saturation. Peer debriefing was used to supplement the validation of the results (Creswell, 2012). I found relationships between the three research questions and 15 interview questions, which are displayed in Figures 1-8.

The findings from the Interview Protocol and Questions (see Appendix B), were presented using radial Venn graphs. The radial Venn graphs below shows the most common categories for how teachers feel about female participation in cardiovascular exercises. There are three categories labeled based on the subject and around each

category are the most common themes and descriptions that emerged from data from the three RQs.

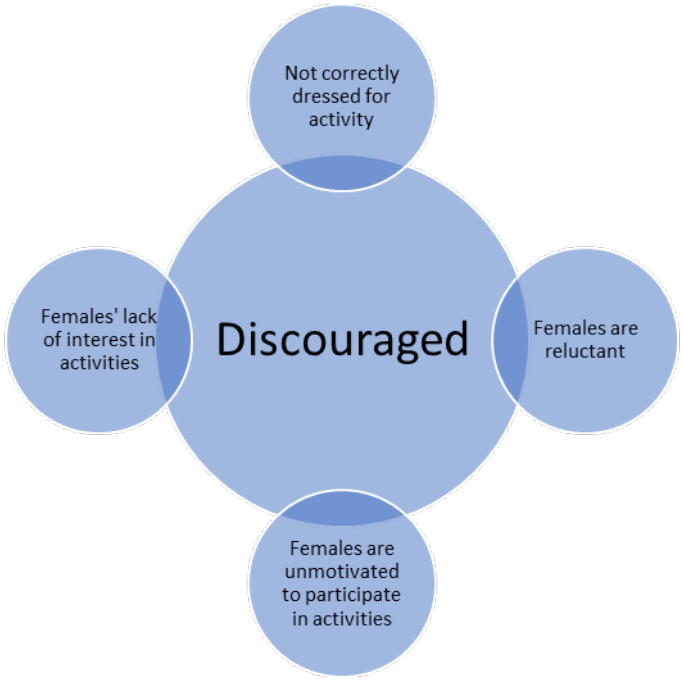

Figure 1. Teachers felt discouraged.

The first common theme to emerge from the first question analysis was that teachers felt discouraged when they tried to promote cardiovascular exercises to adolescent female students (see Figure 1). Females lack interest, are not motivated, do not wear proper clothing which leads to nonparticipation, and simple refusal to participate. One teacher noted in their response that some females would ask "Can we do it tomorrow or the day after?" (see Appendix B and C).

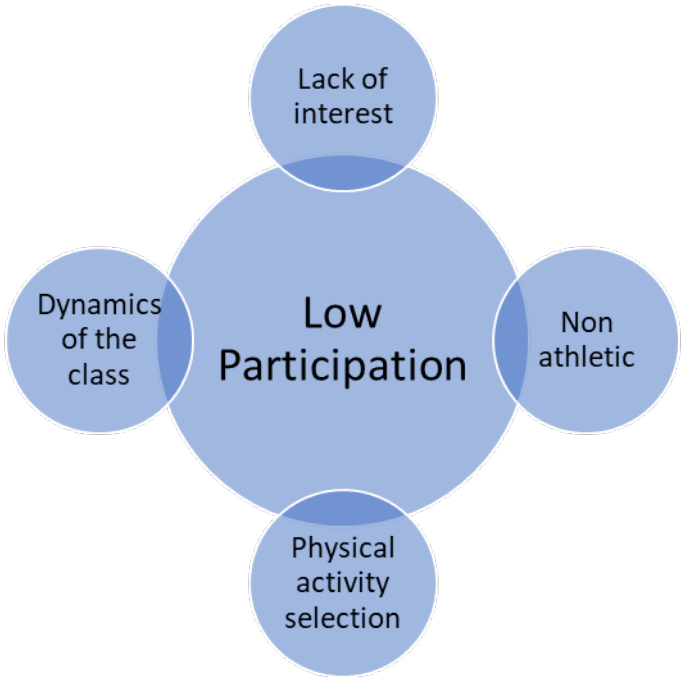

Figure 2. Low participation from females.

The second common theme to emerge from the first question was low participation (see Figure 2). Low participation in physical education classes were due to females not enjoying the activity selection, nonathletic, "depends on the dynamics of the group" and once again, "lack of interest" (see Appendix B and C). Teachers shared that if activities were contact sports, the females would not want to play. Also, if the classes involved friends, females could be more likely to participate or not participate, depending on the decision of the group of friends.

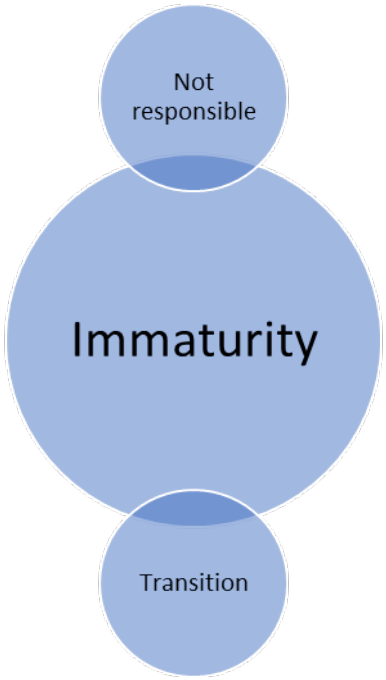

Figure 3. Immature females.

In middle school, physical education is not required to advance to high school. When females advance to high school, they must become acclimated to the high school environment and requirements. According to Interviewees 1, 3,4, 5 and 6, female students begin to show low level cardiovascular exercises in the 9th grade. Therefore, strategies for promoting cardiovascular exercises are important. Interviewee #6 stated, "Ninth grade is the first year of high school and many students are adjusting to high school". Due to the transition, students show "immaturity to the adjustment and may not take the responsibility of participating in physical education" as stated by Interviewee #6 (see Appendices B and C and Figure 3).

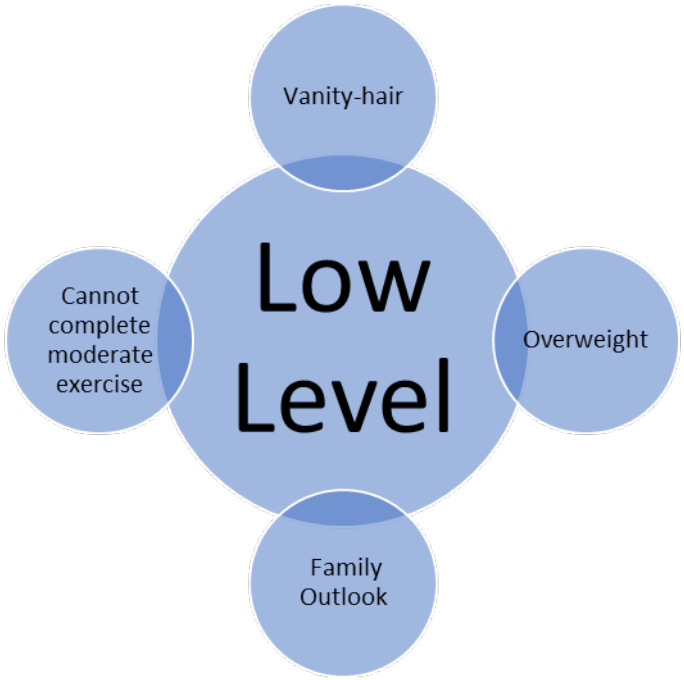

Figure 4. Reasons for low level cardiorespiratory endurance.

The common theme that emerged from the second question was low-level cardiovascular endurance (see Figure 4). Some females are concerned about the way they look, that it plays a major role in deciding whether they will participate in physical activities. Unfortunately, most females that are overweight do not participate, although in the health classes, teacher discuss how physical activity plays a role in losing weight. In addition, families who do participate in physical activities, can lead to low level cardiovascular endurance in their children.

The words and/or phrases that were coded in correlation from Interview Questions #5, #6, follow-up to question #8; #9, #10, and #12 with RQ2 included: “being overweight” (Interviewee # 1 and 5), “cannot complete moderate level of exercise”(Interviewee #2), stated a “low family outlook” (Interviewee #3), “breathing

hard" (Interviewee # 5 and 2), "unmotivated"(Interviewee #6), and "mid level cardiovascular levels" (Interviewees #1, #2, #5 and #6) (see Appendix B and C).

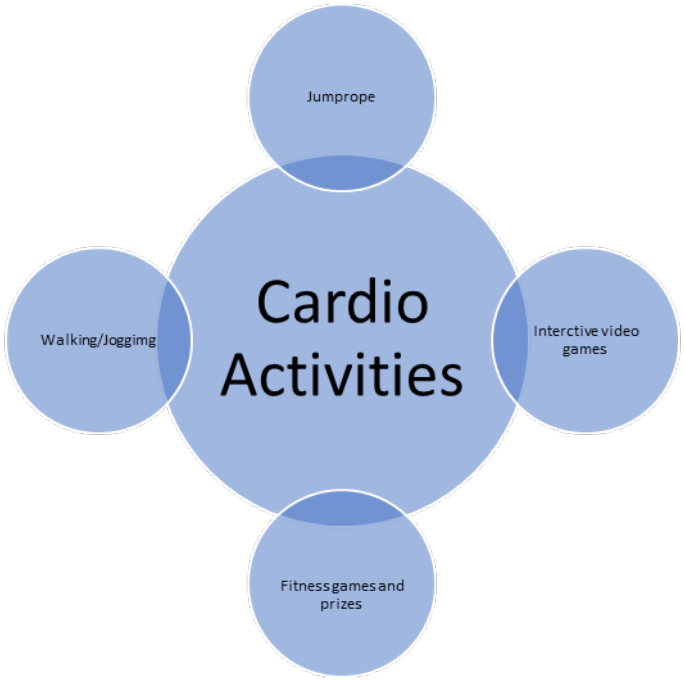

Figure 5. Cardio activities.

The first common theme that emerged from the third question was cardiovascular activities (see Figure 5). Teachers introduce and present different cardio activities to the PE classes such as power walking, interactive video games, jump rope, and fitness games. The words and/or phrases that were coded in correlation from Interview Protocol Questions #3, #4, #11, #13, #14 and #15 with RQ3 included; "games and prizes" (Interviewee #3), "videos to imitate" (Interviewee #4), "double-dutch jump rope" (Interviewee #5) (see Appendix B and C).

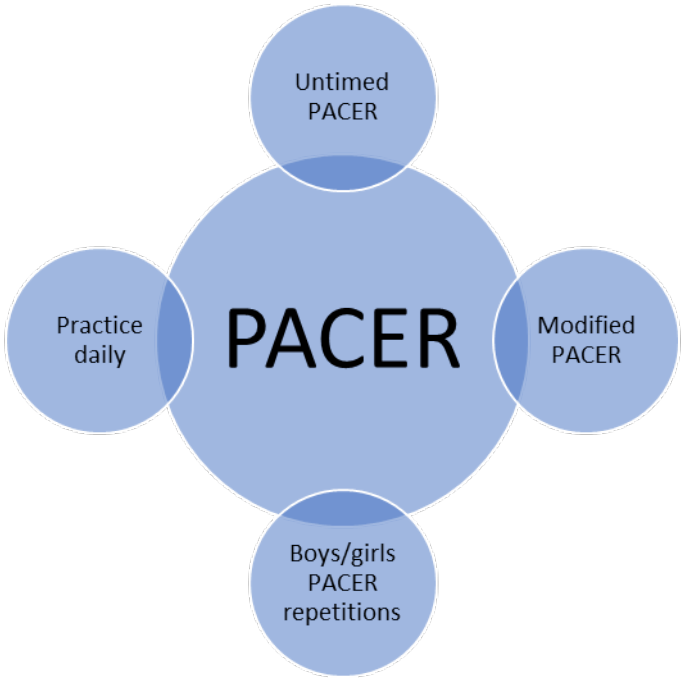

Figure 6. PACER variations.

The second common theme to emerge from the third question was using the PACER as an intervention to promote cardiovascular endurance (see Figure 6). The PACER test is a cardiovascular exercise that is typically used to measure cardiovascular endurance four times a year. Interventions of the PACER included "practicing it daily", "PACER modifications", "untimed PACER until the time restraint was met", and "taking turns between boys and girls with PACER repetitions" (see Appendix B and C).

Figure 7. Sports.

The third common theme that emerged from the third question was sport participation (see Figure 7). Teachers introduce and present different team sports to the PE classes such as basketball, soccer, and other sports. Teachers also presented individual sports such as tennis and lifting weights. While some females participate, others still

decide not to participate.

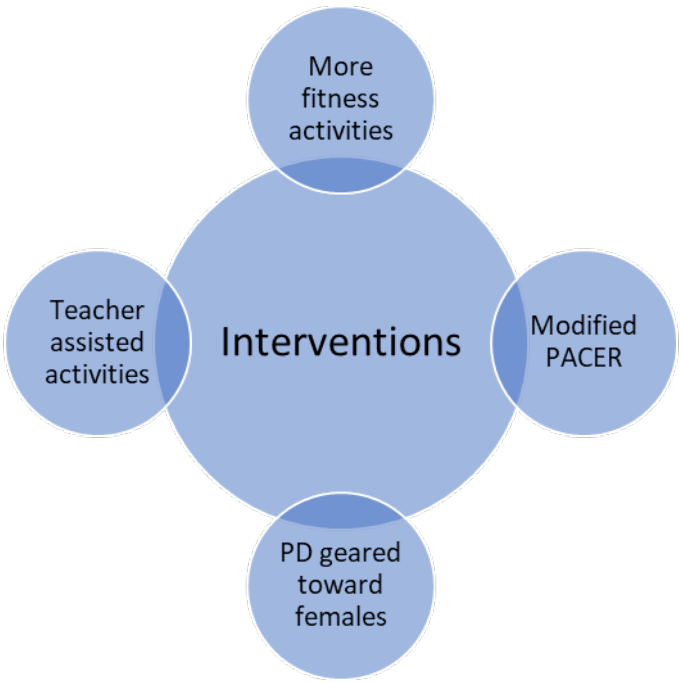

Figure 8. Cardiorespiratory activity interventions.

The fourth common theme emerging from the third question were interventions to help promote cardiovascular endurance (see Figure 8). Professional development "geared towards female cardiovascular endurance", "teacher assisted activities", "modified PACER", and "fitness activities" (see Appendix B and C).

Discrepant Cases

There was only one discrepancy found and it was because an answer was not transcribed correctly. Cresswell (2012) states that if discrepant data is found, the researcher may have to return to the interviewee interviewees and discuss answers in more detail. I had a discussion with the interviewee, and the mistake was corrected. This mistake was discovered by member checking.

Evidence of Quality of Research Findings

Validity and reliability help guide a researcher in assessing and examining the accuracy of a study (Creswell, 2012). Reliability indicates that results from an instrument are steady and reliable. It refers to the constancy of the conclusions made by researchers over time (Creswell, 2012; Lodico et al., 2010). Validity is the development of proof to show the tests measure what it is supposed to measure (Creswell, 2012). It refers to how correct the researcher's conclusions are based on data collected (Creswell, 2012).

The interviews conducted related to the area of the study (Creswell, 2012). I covered all facets of the research questions with the interview questions (Creswell, 2012; Lodico et al., 2010). Audiotaped interviews ensured the accuracy of the data given by the participants. Transcript checking validated the accurateness of the transcribed data (Creswell, 2012). I will also use peer debriefing and an audit trail to ensure the accuracy and credibility of the collected data and findings (Merriam, 2009). Member checking is an approach used to strengthen validity and reliability was transcript checking. I included transcript checking of the data by having the participants evaluate the transcriptions to guarantee the truth of findings (Creswell, 2012). The participants checked to validate transcripts represented what was stated by them in the interviews. Each participant received a copy of his or her interview by email. I asked that the participants reply. "I Confirm" if the interview was valid. I had one interviewee to ask that I correct a transcribed answer. At that time, I made the adjustments, to the interview conducted, and confirmed the correction with the interviewee. When coding and placing data in themes,

discrepant or contradicting information will be presented in the research to add credibility (Creswell, 2009). Contradictory evidence helps research become more realistic and valid (Creswell, 2009).

Another method that I used to guarantee validity and reliability was peer review. Merriam (2009) defined peer review as a method that allows the researcher to ask a peer to review and comment on the results or conclusions. I asked the assistance of two coworkers to review the collected data. The two peer reviewers have doctoral degrees in education and will be unbiased when reviewing data. I asked my colleagues to sign a consent form

In addition, I conducted an audit trail by keeping a journal to keep a thorough account of the methods, procedures, reflections, questions I may have, and the reasons behind the decisions I made throughout the research. (Merriam (2009) stated that journals can also keep an account of how data will be analyzed and the justification for decisions made in the research. Merriam (2009) stated the audit trail is an extensive record of the techniques, methods, and decision points in doing the study. Reliability was increased through an audit trail because it allows thoughts and judgment to be outlined throughout the proposed study (Merriam, 2009).

Conclusion

In conclusion, Section 2 summarized the methodology research. More particularly, I discussed the research design; the criteria, selection, and protection of participants; the data collection process; the method of analyzing the data; and a discussion of the analysis of the data. In conclusion, the findings from the Interview

Protocol and Questions (see Appendix B), were presented using radial Venn graphs. The radial Venn graphs illustrated a category and within each category, several common themes developed. The diagrams illustrated the answers from the participants and how the answers correlated with the three RQs.

I invited six physical education teachers to participate in this qualitative study. They were asked to disclose perceptions of their feelings about adolescent females and their cardiovascular endurance levels. The problem that initiated this study was that adolescent females do not participate in physical activities in physical education classes that lead to low cardiovascular endurance levels. The study was important because females that have low cardiovascular endurance levels as adolescents, can lead to health problems later in life. Throughout my study, I discovered that physical education teachers felt that they were not exposed to physical activities that were more suitable for adolescent females to help increase physical activity in physical education leading to higher cardiovascular endurance levels. A professional development opportunity inclusive of physical activities more appropriate for adolescent females. In Section 3, I will discuss the proposed project which includes the rationale, literature review, project description, evaluation plan, and implications.

Section 3: The Project

Introduction

In this qualitative research study, I summarized the perceptions of secondary physical education teachers regarding the cardiovascular fitness levels of their female students. The results are important because low cardiovascular fitness levels can lead to one having health issues later in life (Davis, et al., 2016). The qualitative data were collected using interview questions. Conclusions revealed the necessity for (a) hands-on PA strategies, (b) clear school district expectations for PA for adolescent females, and (c) strategies to improve PAs for adolescent females.

In the following sections, I describe the project (a PD training) that I developed based on my research findings. Topics include the PD goals, justification, a strategy for implementation, possible hindrances and resources, and provisions that may help physical education teachers understand expectations and learn hands-on strategies. I include a review of literature to broaden the understanding of the study's conclusions and key components. In addition, I offer plans for formative and summative assessments and an overall plan for evaluating the PD's goals. I also reflect on the social implications of the project. Finally, I consider possible changes to the project in the future. At the end of this PD, it is expected that PE teachers will have knowledge of proven techniques to increase adolescent female cardiovascular fitness levels through engaging demonstrations, cooperating with other teachers using a variety of practices, and collaborating on activities.

Rationale

This study was prompted by the problem of many adolescent females not participating in physical activities in physical education classes. Low participation can result in low cardiovascular fitness levels that can lead to female adolescents being overweight and having health issues as adults (Carson Sackett & Edwards, 2019). The conceptual framework for this research was Bandura's (1977) social learning theory. The results of this study compelled me to develop a PD as the project because PE teachers in the study revealed that they needed more hands-on PA strategies, a better understanding of the school district's physical education expectations, and additional methods to increase adolescent female cardiovascular fitness levels. A PD was the most suitable choice to address study findings because it is an effective method to form skills among a large group (Hunuk, Tannehill, & Levent Ince, 2019). Those planning to offer PD in a school setting should first seek approval from the school's administrators because these individuals are gatekeepers to PD opportunities (Durden-Myers & Keegan, 2019). In addition, they should be receptive to teachers' context and needs; offer extensive, not limited, training events; and strive to have a long-term impact on teachers' education and grasp of physical literacy, as this offers clear evidence of the effectiveness of the PD (Durden-Myers & Keegan, 2019).

The link between teacher preparedness and student achievement is well known. PE teachers demonstrate how to perform skills essential to activities or sports, such as serving a volleyball, shooting a basketball, or kicking a soccer ball. These skills are necessary in leading a group of students during organized activities in sport class. Also,

physical education teachers need to meet certain requirements to assist in the promotion of PA explicit to the physical education profession (Badicu & Kovacs, 2017). I decided to design a PD program (see Appendix A) to offer physical education teachers' methods they can use to better promote PAs to adolescent females, motivate these students to participate and raise their cardiovascular fitness levels, and increase students' understanding of why participating in PA is important. PD, for both prospective and veteran teachers, is a critical element for incorporating any school initiative (Castelli, Carson, & Kulinna, 2017). Greenspan, Whitcomb, and Griffith (2019), the authors of GLSEN's 2015 School Climate Survey, argued that school stakeholders should engage in increased PD to improve the rates of intervention and increase the number of supportive teachers and other staff available to students. McKenzie and McKenzie (2018) recommended the following: "providing sufficient opportunities to actively learn over an extended time period, engaging external expertise, focus on engaging teachers in the learning process and in school-based initiatives having school leaders actively leading the professional learning opportunities" (p. 30). I made every effort to create a PD based on my results and incorporating these recommendations.

A high-quality PD could improve the chances of obtaining full-class PA participation from adolescent females. Full-class participation can lead to higher cardiovascular fitness levels, according to participants. The PD I developed reflects the themes and results from the study. Based on an analysis of answers to interview questions, I created a 3-day PD that will start in the summer before school starts and continue until after first semester, provide content knowledge, enable discussions with

other physical education teachers, and provide an opportunity for teachers to develop collaborative PAs and discuss the best approaches to address unmotivated adolescent females. I created presentations that offer information on hands-on PA strategies, a better understanding of the school district's PE expectations, and additional methods to increase adolescent female cardiovascular fitness levels. In addition, I incorporated activities in which physical education teachers work together to create physical fitness activities, discuss the best methods to deal with unmotivated adolescent females, reflect on various teachers' PE class experiences with adolescent females, and explore data.

During their one-on-one interviews, the participants offered their ideas of PD they felt would or would not be beneficial or helpful based on their experience. From those responses, I designed varied collaborative PAs that I purposefully integrated throughout presentations to discourage boredom, to keep the physical education teachers engrossed, and that made use of their collective experiences. The participants were very open about previous PD and how they catered to males and not to females.

PD that improves teaching and learning consists of effective, quality activities such as coaching/mentoring, observing and conversing about classroom practice, and collaborating with other teachers (Cardina & James, 2018). The last component of my PD includes conversation and reflection. I believe that conversations amongst new and veteran teachers as a method of promoting cardiovascular endurance will help promote physical activity for adolescent females. For this reason, I decided to integrate conversation and reflection into my PD. Physical education teachers need the opportunity

to have discussions with other physical education teachers to gather thoughts, corroborate insights, and increase support from those who have comparable experiences.

Review of the Literature

A review of literature related to teacher responses as it correlated to useful ways to increase cardiovascular endurance for adolescent females. The key words searched using the Walden University Library included *professional development/benefits, physical education, physical activity, and physical education teachers.* I referenced major databases from the Walden University Library. The major databases used were Thoreau multiple databases, EBSCOHost, Academic Search Complete, Education Research Complete, Academic Search Complete and Teacher Reference Center. The literature review increased my results and helped me recognize the key ideas that will be presented in the succeeding subsections.

Professional Development and Training

Professional development is defined as classes, sessions, continuing education, graduate courses, or any type of in-service for physical education teachers in a school district (Cardina & DeNysschen, 2018). Considerate facilitation is one of the characteristics of effective professional development (Hunuk, 2017). (Warehime, Snyder, Schaffer, Bice, Adkins-Bollwit, and Dinkel (2019) stated that although physical activity has shown to be beneficial, levels appear to decline as children become adolescents. (Matherson & Windle, 2017) stated teachers would like the following from professional development:

1. Teachers want professional development learning opportunities that are

interactive, engaging, and relevant for their students.

2. Teachers want professional development learning opportunities that show them a more practical way to deliver content.
3. Teachers want professional development learning opportunities that are teacher-driven.
4. Teachers want professional development learning opportunities that are sustained over time. (p. 30-31)

Efforts are required to diminish this decline and to guarantee that adolescents reach adequate levels of physical activity. Professional development and training can be essential to improving teacher effectiveness in physical education. Regardless of the conclusions that professional development enhances physical education teacher effectiveness, training opportunities for physical activities that promote cardiovascular endurance for females are not always offered. Subsequently, several physical education teachers wrestle with everyday tasks, such as developing activities that adolescent female find interesting to participate in over a long period of time and at the same time increase cardiovascular endurance. Cardina and DeNyssc-hen (2018) stated that specific to physical education, professional development should concentrate on concepts of quality PE instruction such as improving teaching methods and integrating national and state standards into the curriculum.

Equally as significant as achieving physical activity that advance cardiovascular fitness techniques is utilizing them constantly. Research in education and physical education has highlighted the necessity for continuing professional developments that are

aligned with best practices (Hemphill, Templin, & Wright, 2015). Escriva-Boulley, Tessier, Ntoumanis, and Sarrazin (2018) found that teachers who are involved in professional development have a greater toolkit of helpful ways to encourage student physical activity in PE. As noted by Cardina and James (2018), teacher professional development serves as a gamut that begins during teacher education programs, continues into the beginner years of teaching, and carries on through one's teaching profession. Professional development opportunities can support physical education teachers by offering physical education activities that teachers will continually use. Professional developments provide activities or workshops that advances one's abilities, wisdom, proficiency and other characteristics as a teacher (Cardina and James, 2018).

Successful professional development opportunities have certain characteristics. Professional development opportunities that focus on dynamic teaching, assessment, observation, and reflection are the most valuable (Matherson & Windle, 2017). Professional development has revealed methods to expand teachers' subject knowledge and training that are related with positive student results (Cardina and James, 2018). According to Hemphill et al. (2015), educational researchers have recognized several key principles to successful professional development programs are (1) longevity (2) active teacher participation and (3) activities should be coherent with the teacher's goals.

Cardina and James (2018) stated that generally, physical education teachers need professional development that develops their skills to create and uphold classroom behaviors, along with the capability to form classroom rules that teach students to control their behaviors. Additionally, physical education teachers require decision-making

expertise detailed to their teaching settings (i.e., outdoors or gymnasium) to sustain safe and healthy learning environments and to encourage student learning. Professional development opportunities are multilayered and involve teacher engagement. Physical education teachers require opportunities for professional development to improve their teaching abilities, in addition to learning new teaching practices, adjust to increasingly diverse groups of learners, and stay up-to-date with educational research (Cardina & James, 2018). Professional development that contains numerous types of physical activities engage and boost physical education teachers' abilities to promote cardiovascular endurance for adolescent females.

Importance of Teacher Collaboration During Professional Development

It is important that teachers collaborate during a professional development opportunity. (Greenspan, et al., 2019) found that teachers who received more than 14 hours of professional development showed higher achievement scores compared to teachers who attended less than 14 hours of professional development. In general, and physical education literature, significant consideration is paid to recognize useful learning communities as a helpful method of teacher professional development when teachers casually and collaboratively learn from each other (Hunuk, Tannehill, & Levent Ince, 2019). Others describe professional developments as helping to obtain greater content knowledge, form strong identities as professional teachers, developing a commitment to subject advocacy at a policy level, increasing teacher empowerment concentrating on student learning needs and allowing the sharing of teacher voice (Huunk et al., 2019). Continuing professional development such as quick workshops are intended to give

teachers knowledge and skills for instant implementation are essential (Huunk et al., 2019). Professional developments are chances to learn from and with one another through a collaborative, social culture concentrated on teachers' needs (Huunk et al., 2019). Professional development in public schools was recognized as a procedure for developing teacher skills and competencies needed to create excellent educational results for students (Pharis, Wu, Sullivan, & Moore, 2019). Teachers, focused on constant improvement of educator quality and student accomplishment, participate in an array of professional development activities to improve their abilities to deliver high quality instruction for each student (Pharis et al., 2019). Pharis et al. (2019) identified several common elements of valuable professional development programs including (a) length, (b) adequate number of contact hours, (c) implementation of numerous professional learning, (d) active learning activities, (e) cooperative participation, and (f) teacher collaboration. Traditionally, professional development has been thought of as trainings, classes, and teacher study groups, but have lately been more generally defined to include any activity intended to improve teacher instruction, abilities, and knowledge (Early, Berg, Alicea, Si, Aber, Ryan, & Deci, 2016). In some districts, professional development has been offered as options such as one -day, online semester courses, or a master's program (Dauenhauer, Carson, Krause, Hodgin, Jones, & Weinberger, 2018).

One-day workshops are ideal for interested teachers who want to promote physical activities in schools, but who do not have time for long professional development opportunities. A one-semester online course is for more committed teachers to who want to additional knowledge and skill development but cannot or do not want to

earn another degree program. Finally, the master's program is intended for teachers who are interested in the promoting physical activity, fully dedicated to cultivating their physical activity leadership skills, and can enroll in a degree program (Dauenhauer et al., 2018). Staff members are engaged in many kinds of professional development associated to instruction, such as faculty center workshops and classes ranging from hours to days in duration (Knowlton, Fogleman, Reichsman, & de Oliveira, 2015). Professional development opportunities can happen when educators collaborate to share their shared knowledge, training, and content (Glazier, Boyd, Hughes, Able, & Mallous, 2017).

Professional development is one of the foundational categories of a highly qualified PE teacher, in addition to preservice preparation and designing and delivering a PE program (Cardina & DeNysschen, 2018). Teachers also have ideas about how effective professional development should look. (Parsons, Hutchison, Hall, Parsons, Ives, & Leggett, 2019) analyzed educators and discovered that educators thought these PD characteristics were beneficial: (a) feedback, (b) collaboration of teachers reviewing student work and (c) program follow up.

Essential Qualities of Professional Developments

Teacher collaboration has developed into a widely accepted form of professional development worldwide, and essential to the effective use of nationwide policy modifications (Zeng & Day, 2019). Collaboration is largely viewed as a method to increase collective responsibilities and contractual accountabilities for school development and improvement (Zeng & Day, 2019). Many researchers view collaboration as leading to competence building, social growth and greater teacher

identity, efficacy and expertise that has led to advances in teaching and learning, and student success (Zeng & Day, 2019). A study suggested effective professional development included essential qualities incorporating activity presentation, collaborative involvement by educators, length of activity, while the essential features of successful professional development included content expertise, engaging opportunities for educators to learn, and consistent with other professional development activities (Powell & Bodur, 2019).

These ongoing concerns prompted a standard shift to job-embedded professional development which is defined by its routine use of follow-up, on-going reflection, collaboration, and teacher support, all of which encourage ability-improving building professional development and focus on difficulties of conventional educator professional development in direct or indirect settings (Powell & Bodur, 2019). For example, Australia encourages educator professional development through regular collaboration with coworkers, teacher-student teams, and high levels of involvement in subject-area teams (Powell & Bodur, 2019). Explicit to physical education, the Centers for Disease Control and Prevention noticed that professional development programs should be created to aid physical education teachers in offering education directed to the interests and skill level of students and should concentrate on beliefs of valuable physical education instruction such as enhancing teaching approaches and integrating national and state standards into the curriculum (Cardina & DeNysschen, 2018).

Creating Physical Activity Expectations in Physical Education

Physical education programs have been labeled as being inadequate for achieving

outcomes in physical education, with the majority of physical education teachers recognizing the need for more physical education professional development (Miller, Eather, Gray, Sproule, Williams, Gore, & Lubans, 2017). In response to physical activity not meeting the 60 minutes 3 times a week for all students, to promote health and the increase of childhood obesity, several organizations have suggested that physical education curriculums play a fundamental part in raising the physical activity levels of children and adolescents (Sum, Wallhead, Ha, & Sit, 2018). Unfortunately, the interventions provided by schools have shown to be minimal (Sum et al., 2018). Although individuals know the negative impacts of not participating in exercise, such as gaining weight, having less energy, or increased risk of health problems, individuals indicated feelings of discomfort, such as soreness, as reasons not to exercise (Zhang, Moore, Gu, Chu, Gao, 2016). Studies show that most students know the benefits of exercise, such as higher energy levels and prevention of health disorders (Zhang et al., 2016). Although there are health benefits of exercise, it has not essentially led to higher levels of PA. In addition to feelings of doubt toward exercise, individuals identify many shared reasons for not participating in PA, such as no time, money, non-interest, and injury (Zhang et al., 2016).

Communication in Professional Development

Physical education teachers desire and need to communicate with others to better understand what works in physical education classes. Isik, Sunay, and Cengiz (2018) noted that individuals who have good communication skills, are usually self-confident, thoughtful, enthusiastic to cooperate and share, open to the difficulties of their own and

of others and problem solvers. General proficiencies are related to communication, collaboration, the ability to obtain and convey knowledge, and lifelong learning, while specific proficiencies are linked to individual teaching topics (Tul, Leskosek, & Kovac, Uni-li, 2019). A better understanding of the activities that adolescent females enjoy, physical activity expectations will help physical education teachers establish an active environment that is effectual and moderate to high levels of participation. Physical education classes may be an ideal setting to acquire the knowledge, attitudes, and skills necessary to integrate physical exercise into a person's life (Fin, Baretta, Moreno-Murcia, & Nodari Júnior, 2017).

Effective communication is vital for a teacher in conveying of education, classroom management and interaction with students in the class (Khan, Khan, Zia-Ul-Islam, & Khan, 2017). Through communication, teachers are given the courage to convey information in an effective way (Khan et al., 2017). Professional collaboration is an important aspect of any professional development. It allows for individuals to collaborate and show teamwork. The communication process is effective when teachers deliver material transparently and comprehensibly (Khan et al., 2017). Good communication is considered an effective tool for successful in the teaching profession (Khan et al., 2017). Cutton, Killion, and Burt (2015) suggested the habit of using cues, such as terms used by PE teachers, to inform students of the PE teacher's expectations (e.g., "bring your knees to your chest") or to specify the teaching elements needed to be addressed. Physical education teachers need to use phrases that are effective, rehearsed and a normal part of their teaching repertoire and self-directed speech to achieve goals (Cutton et al., 2015).

Weaver et al. (2018) found that by providing the following strategies for expanding physical activity opportunities increased physical activity to be utilized as interventions for PE. These methods offer a helpful means through which to consider extending physical activity opportunities:

1. Expanding physical activity opportunities (i.e., adding new physical activity opportunities)
2. Extending physical activity opportunities (i.e., allocating additional time for existing physical activity opportunities)
3. Enhancing physical activity opportunities (i.e., augmenting existing physical activity opportunities to maximize the amount of physical activity youth accumulate) (p. 360)

An effective professional development opportunity can help perfect teaching practice. (Dunn, Hemphill, and Beaudoin (2016) stated that professional collaboration is a major feature of any subject. It permits people to share thoughts and be part of a team. Knowledge of managing a classroom can be expanded during a well-planned professional development.

Project Description

Resources and Existing Supports

It has been found (Murphy Potential & O'Leary, 2012) that teachers who attend professional development are well prepared teachers that can have more of an impact on student achievement than "poverty, language background and minority status" (p. 298). Teacher professional development assists in teacher learning experiences which are equal

to student learning experiences (Murphy & O'Leary, 2012). Professional development is a vital part of any discipline because it permits teachers to collaborate on thoughts and opinions and to be a part of a team (Dunn et al., 2016). The goal of a professional development is to encourage teacher learning. Lesson study and video clubs are professional development strategies that support teacher learning by raising teachers' attention to student thinking and enhancing instructional development (Dunn et al., 2016). The professional development will present the physical education teachers in the district an opportunity to enhance their ability to promote physical activity in physical education classes and avoid, decrease, or successfully tackle low cardiovascular fitness in adolescent females. I will need assistance from important individuals and advocates to successfully execute this professional development. Beforehand, I will contact the physical education director to share the results of my research the plan for the professional development professional development. After the conversation and gaining approval from the physical education director to offer this professional development, I will e-mail each school's principal and physical education department chair to invite them to participate in this 3-day professional development (See Appendix A). After the schools agree to the invitation to participate, I will contact (by e-mail) the administrative teams and department chairs for each school to review the dates and times of the professional development, outline, and detailed requests. The assistant principal responsible for physical education and physical education department chairs will convey to the physical education teachers that the 3-day professional development will happen two days in August and then one day after the 2nd quarter of school. The 3–day

professional development will take place in the gymnasium and the cafeteria. I will need a multimedia, laptop, speaker, microphone, jump ropes, mats, the PACER CD, and stopwatch. All PE teachers will be given an agenda in the form of a brochure, refreshments at the beginning and end (lunch will be on their own). I will ask that participants sign up for the professional development on the district wide site for professional development registration.

Potential Barriers

A possible barrier for my project could be uninterested veteran teachers. When physical education teachers are notified that there is a required professional development to attend, many of the veteran teachers may feel that they have seen all professional developments and what they have to offer. The veteran physical education teachers could be a hindrance to the novice teachers rather than proactive participators. I would remind veteran teachers that the participation hours count toward yearly hours required for professional development. Also, I would add that new teachers need their support to implement activities to increase physical activity participation from females. Finally, I would emphasize the importance of showing their continued confidence of their decision to be PE teachers.

Another barrier may be that the physical education director does not feel that the professional development topic concerning adolescent females' cardiovascular endurance is not necessary. Not only do I feel that the topic of low cardiovascular endurance from adolescent females have not been a focus for previous professional development, but the collected data/feedback from physical education teachers state the same. I would

emphasize my study findings to validate to him what physical education teachers in the school district expressed their low participation from adolescent females leading to low cardiovascular endurance physical education and demand for supplementary professional development.

The time needed to conduct the professional development has the potential to be an issue, but every year, time is allocated for a professional development for all departments before school starts. There are two days available, if I have approval. The only concern is the 3rd day, but instead of having a 3rd day face to face, I could send a survey out to everyone in attendance for the first two days.

Eliminating barriers would be an important achievement for the professional development. Having the physical education director and veteran teachers aboard would be a great accomplishment for this professional development. Typically, the physical education director conducts the professional development held at this time of the year, so I would intercede and lead the professional development, with assistance. The veteran teachers would be very helpful and supportive of the project. By having the teachers' endorsement, they have a vested interest and buy in even before implementing the project. Although these barriers could come from various viewpoints, addressing them is vital to the achievement of the project.

Proposal for Implementation and Timetable

Table 3 includes the proposed timeline for the implementation of the PD. When planning an effective professional development, collaborating with others is very important. Bradshaw (2015) noted great professional developments have teacher

participation, interaction, reflection, and conversation. In a collaborative environment, professional development participants gain knowledge by asking questions and exchanging thoughts (Bradshaw, 2015). When teachers collaborate to help each other, professional developments are more prone to be appropriate to the needs of the teachers involved (Bradshaw, 2015). I will collaborate with the physical education director, the building principal, and department chairs via email in May (the professional development will be in August and October) with details of when the timeline will be sent out to everyone. I will begin planning at the end of the school year.

Table 3

Proposed Timeline

Date	Task	Person	Location	Deliverable
May	Send e-mail	Administrator, department chair, and PE director	Online	E-mail/PowerPoint
June	Meet	Administrator, department chair, researcher, and PE director	Central office	PowerPoint/Face-to-face
July	Send e-mail	Administrator, department	Online	E-mail

		chair, PE director, and PE teachers		
August	Conduct PD Session 1 and 2	Administrator, department chair, PE director, and PE teachers	Reserved building	Face-to-face/Handouts
October	Conduct Session 3	Administrators, department chairs, and PE teachers	Reserved building	Face-to-face/Handouts

Roles and Responsibilities

Several people will have responsibilities for this professional development opportunity to be successful. My position and responsibilities include organizing the activities, communicating my requests and expectations, and facilitating. My role as a communicator will be to identify the goals and expectations of the professional development. As a facilitator, I will create and present each presentation and activity. Each presentation and activity will be designed and implemented to make sure they are easily understood, through the professional development, the female students will know what is expected of them in regards to increasing cardiovascular fitness, the different

physical activity exercises available, and how other physical education teachers are managing adolescent females who do not participate in adequate physical activity to raise cardiovascular fitness. The administrator (assistant principal responsible for physical education) will be accountable for reserving the building gym, supporting teachers as they learn new strategies to implement physical activity catered more towards adolescent females and cardiovascular fitness, and supervising professional development teacher participation. In addition, the administrator will monitor that these strategies are used throughout the school year. The department chairs will be responsible for assisting in setting up the PE equipment and support the teachers as they learn new strategiesEnter text here.

Project Evaluation Plan

Formative Evaluation

Andersson and Palm (2017) noted that significant student achievement advances are likely when formative assessment is utilized in the classroom. Andersson and Palm (2017) defined formative assessment as "encompassing all those activities undertaken by teachers, and/or by their students, which provide information to be used as feedback to modify the teaching and learning activities in which they are engaged" (p. 92). The ongoing advice or criticism (before, during, and after) is appreciated during learning and is used to guide the development of learning. I will use formative assessments during this professional development. These formative assessments will measure prior gained knowledge, check for understanding, give constructive criticism/feedback about the professional development.

I will use questioning, exit/admit tickets, and via email, I will ask if the given strategies were used and if so, to share how their experiences. The questions will be higher end questions of "why" and "how". For example, I may ask, "Why do you think incorporating a game scenario while running/walking on the track encourages higher physical activity than running a lap on the track?" Another formative assessment method is the "exit/admit ticket" which allows the participants to express what they expected and if the expectations were met. As the "admit ticket", physical education teachers will be given a piece of paper as they enter the professional development session. As the "exit ticket", PE teachers will be given a piece of paper as they exit the professional development session and will be asked if their expectations were met. I will evaluate the teachers' responses to gain insight as to which activities were well received and those that were not. The information attained can be used to improve the activities presented during the sessions. A continuous evaluation of how the professional development progresses will be evaluated by implementing the final formative assessment by sending emails to the participants in the middle of the school year to evaluate how the activities were implemented and feedback on how the females responded to the activities.

Summative Evaluation

Summative evaluation is completed at the conclusion of a professional development and assists in making decisions because it gives across the board information about whole sessions of given information from the presenter and what teacher have learned (Saeed, Tahir, & Latif, 2018). Summative evaluation objective is to provide thorough information about teacher learning activities after the completion of

professional development (Saeed et al., 2018). The purpose of summative evaluation is to determine how much a learner recollected over a period (Saeed et al., 2018). The summative evaluation for this professional development was intended to evaluate the objectives of the professional development, the teachers' gain of knowledge, and how the new activities will influence the teachers' knowledge on physical activity to increase cardiovascular endurance in adolescent females. A summative assessment will be administered at the conclusion of this professional development. I will email questions to the participants at the end of the professional development (See Appendix J). When I examine both evaluations collectively, the data provided will assist in improving and executing forthcoming professional development opportunities to support an active cardiovascular lifestyle.

Key Stakeholders

A stakeholder's position is important in the implementation of professional development because when they play their role effectively, there will be positive outcomes (Quan-Baffour, & Arko-Achemfuor, 2018). Respectively, each stakeholder provides the professional development with a required element. (Greenspan et al., 2019) recommend that school stakeholders engage in increased professional development to "improve the rates of intervention and increase the number of supportive teachers and other staff available to students" (p. 69). A stakeholder's position can be continuous or sporadic. Administrators, department chairs, and especially teachers play important roles in the success of the professional development. The results from the teachers' responses showed that previous professional development presented by the physical education

director did not meet the needs of adolescent females and physical activity. The stakeholders mentioned will have different positions in the professional development. Administrators support and set the expectation of the professional development based on summative evaluations from the previous year, reserving the time and building, and being present for the beginning of the professional development. Department chairs assist in setting up supplies and handing out paperwork (exit and admit tickets) at the beginning and end of the professional development. Teachers are in attendance, work together, and try to incorporate strategies acquired from the professional development to their own students and gym settings.

Administrators. Administrators are important in the effective management of a school and supporting teachers and staff. Without the permission of an administrator to use a building, the professional development would not be possible. Throughout the school year, based upon information given in the professional development, administrators can provide insight on expectations of physical activity used to increase cardiovascular endurance for adolescent females. The administrator typically is present in the beginning of the professional development and occasionally sit in on sessions throughout the professional development to show support. Undoubtedly, an administrator is the stakeholder that will provide feedback to the physical education teachers as they use new physical activity to increase the cardiovascular fitness for adolescent females from the professional development.

Department chairs. Department chairs play an important role in the daily lives of PE teachers by leading by example through demonstrating great lessons, furnishing PE

equipment and supplementary physical activity ideas, examining data, and offering informal observations of a PE teacher's environment. They will reserve equipment for the professional development. Since department chairs work with PE teachers daily, they can help save time by forming groups for team activities and participate in conversations. Department chairs also give support to physical education teachers as they attempt to utilize new physical activity to increase cardiovascular fitness following the professional development. Incidentally, department chairs can be more productive than an administrator because they can help a teacher become more proficient without fear of formal administrative action.

Teachers. The focused audience for this professional development is physical education teachers. The results of my study show that physical education teachers promote physical activity to stimulate exercises to increase cardiovascular fitness for not only male, but also for adolescent females and they need more equipment and activities to assist in these exercises. Based on the findings, this professional development is intended to give stakeholders physical activity presentations, physical education teacher collaborations, group conversations, thoughts or reflexivity, and pertinent activities to help increase cardiovascular fitness for adolescent females. Genuine reflexivity entails an honesty and willingness of the teacher to make themselves susceptible to other teachers' scrutiny and assessments of their class teaching methods (Mooney & Hickey, 2017). The sessions provided through this professional development has elements that provide PE teachers the chance to increase their knowledge and work with other PE teachers to consider the best physical activity to increase cardiovascular fitness for adolescent

females. This professional development was created specifically for physical education teachers.

Project Implications

Social Change Implications

Physical education teachers have the potential to be the beginning of social change and improving the outlook of obesity and increasing cardiovascular fitness in females across the United States. Physical education teachers interact with students on a more relaxed level than the average teacher. In the physical education environment, teachers not only can talk, but demonstrate a healthy lifestyle for their students daily. Physical education teachers serve as mentors, counselors, and sometimes just someone to lean on for support. This project is being designed to increase the benefits of increased cardiovascular fitness. This project has social change for other physical education teachers, administrators, department chairs, and most importantly, the adolescent females. By encouraging their students, physical education teachers can decide to lead social change to literally reshape the world we live in. The results from my research has shown that PE teachers believe that adolescent females need more physical activity to increase cardiovascular fitness levels that can decrease high obesity rates in females. These results have directed me to design a professional development that will help physical education teachers develop additional physical activity to increase cardiovascular fitness in adolescent females and a better grasp of what administrators require from physical education teachers.

Through the improvement of cardiovascular fitness amongst adolescent females, PE teachers can possibly reduce the number of overweight or obese adult females, decrease heart disease, and the chance of diabetes (Stewart & Webster, 2018). In addition, PE classes that have students, more importantly adolescent females, participating in physical activity to increase cardiovascular fitness, may also improve academic performance and create an environment that will increase adolescent female student performance in cardiovascular endurance activities (Abildsnes, Stea, Berntsen, Omfjord, & Rohde, 2015; Donnelly, Hillman, Castelli, Etnier, Lee, Tomporowski, Lambourne, Szabo-Reed, 2016). Increase levels of adolescent females participating in physical activity to increase cardiovascular endurance can lead to higher physical activity participation and promotion of lifetime physical activity (Gruno & Gibbons, 2016). Higher participation can lead to a healthier body, high cardiovascular fitness, which can lead to more females actively participating in sports and lower the occurrence of girls engaged in risk behaviors and protect girls from the social problems possibly encountered in their neighborhoods, such as gang activity and teen pregnancy (Rauscher & Cooky, 2016). Students that participate in high school sports can continue sports activities on the college level on a possible scholarship, which would assist the student athlete with finances in college (Edelman, M. (2017). In addition, a healthy body leads to less doctor visits and less medications throughout a lifetime (Lee, Chang, & Du, 2017). In turn, this also leads to more money saved over a lifetime (Lee, Chang, & Du, 2017). By saving money, individuals are more secure and have a more positive influence on our society.

This could mean an increase of self-esteem, better self- image, and a society that is happier and treats each other respectfully.

Importance of the Project to Local Stakeholders

This project could have a positive impact on the local stakeholders such as administrators, department chairs, teachers, and students. All physical education teachers in this school district could profit from this PD on PA to increase cardiovascular endurance by creating a better understanding of cardiovascular endurance expectations and participation levels from adolescent females. Given the approval of the physical education director, I could contact and meet with administrators and department chairs to develop a strategy to organize this PD at their earliest convenience. This PD could apply to whole schools, new physical education teachers, or even teachers whose department chairs or administrators have recognized them as having low scores from adolescent females in participation and cardiovascular endurance activities.

Importance of the Project in the Larger Context

This PD has the potential to influence a new PE teacher orientation program, physical education teacher mentoring, school-wide effectiveness, or even beyond the boundaries of the local district. A PD that concentrates on improving cardiovascular endurance for adolescent females through PA presentations, physical education teacher collaborations, group conversations, thoughts or reflexivity, and pertinent activities could become a very advantageous. All schools could be influenced by a PD early school year teacher planning or a continuous PD as new participants add to the existing ideas with their knowledge and additional PA methods.

This project was designed so that any district, with added content, additional research, and minor modifications, could be personalized to be suitable to the desires of their district or a preservice teaching curriculum for students training to become physical education teachers. Additional research could bolster this professional development program. The resulting program might lead to a regular component of a physical education teacher preparation program or a cardiovascular endurance enhancement class for physical education teachers in training. Ultimately, I would like to add adolescent females to the program to assist physical education teachers to help better understand what they desire or what they think a physical education class should look like. With suggestions from adolescent females, this PD could better accommodate the needs of these students and possibly increase participation in PA to increase cardiovascular endurance.

Summary

Section project consisted of a comprehensive outline of the project I designed for the fidelity 3 entailed the framework implementation of instructional coaching. Derived from the intrinsic qualitative data in Section 2, this project consists of a 3-day professional development training (Appendix A) and virtual PLCs as follow-up support. This section is compiled of the description and goals, a rationale, and a literature review. It also includes a description, evaluation, and identified the potential for the project. In Section 4, I will discuss my reflections and conclusions regarding the completed intrinsic qualitative project study.

Section 4: Reflections and Conclusions

The purpose of this research was to explore the perceptions and experiences of secondary physical education teachers about the low cardiovascular endurance levels of adolescent females. The following section will include my reflections of the completed research, the PD I created, and the conclusions I obtained. Low cardiovascular endurance in females has led to low participation levels in PA (Chen, Hammond-Bennett, Hypnar, & Mason, 2018). This problem hindered the ability of the physical education teachers at the research site to promote PA in physical education. This study's results showed that physical education teachers need captivating hands-on PA strategies, a better understanding of the school district's physical education expectations, and additional methods to increase adolescent female cardiovascular fitness levels. Based on each of these findings and the literature review I conducted, I created a PD that provides physical education teachers with presentations and activities over a 3-day period to encourage adolescent female engagement in physical education, collaboration, and reflection.

Project Strengths and Limitations

Project Strengths

The project is strengthened because it is data-driven, using information gathered from the semistructured interviews I conducted with physical education teachers. The goal for this PD is to develop and provide physical education teachers with ideas to increase cardiovascular endurance amongst adolescent females. Physical education teachers will be given the chance to enhance their teaching expertise through collaborative efforts and sharing of knowledge that may influence teaching and increase

students' motivation. In addition, it is expected that any administrators who attend the PD will gain a better grasp of how to better work with department chairs and physical education teachers in forming progressive benchmark learning environments (see Ketterlin-Geller, Baumer, & Lichon, 2015). This project will assist physical education teachers and ultimately, adolescent females exposed to PA strategies.

The PD will provide physical education teachers physical activity strategies, collaboration opportunities, and the ability to observe how each implements cardiovascular activities. The main objective of this PD is to introduce and support new and veteran teachers on how to continue to encourage adolescent females to participate in PAs to increase cardiovascular endurance. In doing this, adolescent females may have reduced chances of adult obesity (Sackett & Edwards, 2019).

Project Limitations

A limitation for this project might be the difficulty of spurring collaboration between PE teachers to share their experiences. In my experience, during PD programs, physical education teachers tend to socialize with others they already know. Patton and Parker (2015) stated that attending PDs could enhance the knowledge and self-concept of physical education teachers and urges them to continuously use new strategies.

An effective PD includes collaboration amongst teachers and administrators, related information, and consistent meetings (Patton & Parker, 2017). PDs can build efficiency and help teachers advance their careers (Sum et al., 2018). As Sum et al. (2018) noted, self-efficacy is a significant characteristic of social cognitive theory, which was the conceptual theory for my research. The PD opportunity that I created is designed

to have teachers collaborating on different PAs to increase cardiovascular endurance in adolescent females, sharing insight about how the teachers and adolescent females feel about the effectiveness of these activities, and considering the effectiveness of using the new PAs. The success of the PAs in the training will be dependent upon the discussions amongst the PE teachers and how the activities are implemented in class.

During the PD, I will share my experiences with low participation that has led to a decrease in cardiovascular endurance in the hope that doing so will encourage teachers to share their experiences. An additional limitation of this study is the difficulty in encouraging PE teachers to continue to use the new PAs to increase cardiovascular endurance amongst adolescent female once the first two days of the PD are completed. The success of the new PAs to increase cardiovascular endurance is dependent upon consistency from the teachers and not reverting to PAs that did not show success in the past. The assistant principal and department chairs, who conduct classroom observations throughout the year, will monitor the use of the new PAs presented in the professional development. Because administrators take on an instructional, transactional, and/or transformational leadership role, they play an important part in PDs (Naidoo, 2019).

Enter text here. For more information on the content of Section 4, see the checklist appropriate for your study on the EdD page of the Center for Research Quality website.

Recommendations for Alternative Approaches

Because one of the named limitations for the PD is the required collaboration of all PE teachers in the district to discuss the new PAs, some teachers may have difficulty

disclosing disappointments or flaws in their implementation of the activities or how the adolescent females responded. If collaboration with all teachers in the district is an issue, an alternate approach to PD could be considered. An alternative approach to the project could be to have a smaller PD environment named a professional learning community (PLC). Hunuk, Tannehill, and Levent Ince (2019) noted that a PLC involves having a group of teachers dedicated to collaborating thoroughly and participating in relationships that encourage one another to improve student achievement (see also Vanblaere & Devos, 2018).

A PLC allows teachers to meet on a regular basis to enhance teaching and learning (Hunuk et al., 2019). PLCs also meet regularly throughout the year, so they provide an ongoing learning opportunity for teachers (Patton & Parker, 2015). A PLC can also be seen as a community of teachers in the same department or grade level that work together and share ideas to improve student learning (Brown, Horn, & King, 2018). The same hands-on PA strategies used to increase cardiovascular endurance, clarify school district expectations for PA for adolescent females, and offer strategies to improve physical activities for adolescent females could be presented. The PLC members could also review and examine the midyear cardiovascular endurance levels of adolescent female students. Another way to share the PAs with the physical education teachers in the district would be to produce a podcast or YouTube video. The podcasts or videos can be uploaded to these online platforms and available to teachers at any time, day or night.

Scholarship, Project Development and Evaluation, and Leadership and Change

During my research of physical education teachers' perceptions about adolescent

females' cardiorespiratory fitness, I gathered and analyzed data that helped discover what physical education teachers felt essential to promote physical activities to increase cardiovascular fitness amongst adolescent females. My completion of this research has been a factor in the development of a better scholar, project developer, and agent of change as they relate to promoting cardiovascular fitness.

Personally, I feel that nobody likes the idea of change. Change requires a different way of looking at things to make the result different than it has been in the past. Changing requires a person or a group of people to conduct themselves or behave in a different way. In past professional developments, suggestions to change have been made, but execution of these suggestions never developed. The research revealed that based on fitness scores and physical education responses about activities, there needed to be a change. The responses from the participants also showed what changes the professional development could bring.

This study has influenced to my desire become scholar in my field. In the beginning of my research, I understood that participation in physical education amongst adolescents on the secondary level was decreasing, but as I thought and observed more of the classes, watched television, and even while out shopping, I realized that there was an epidemic in American society particularly amongst females. Professional development to assist in reducing the problem of overweight females or obesity by those of that sex, by means of physical activity to increase cardiovascular fitness, has led me to scholarship.

I have developed the ability to create a professional development as a result of

this study. During my study, I developed a project to help physical education teachers increase cardiovascular fitness amongst adolescent females. I used the data found throughout my research to build the professional development. The effort that I put towards working to find physical activities based on the responses of the participants assisted in my ability to create the professional development.

This research has increased my knowledge of hands-on physical activity strategies used to increase cardiovascular endurance, clear school district expectations for physical activity for adolescent females, and strategies to improve physical activities for adolescent females. Now, because of the methods used to data gather data, particularly the one-on-one interaction with the participants. I feel that I am a better communicator, which will help in delivering information during the professional development. I have always been an organized person, but this research has helped me in development, facilitation, and delivering information found in the research process. Hopefully, the completion of my study will help me persuade others in the physical success of adolescent females outside the area.

Reflective Analysis about Personal Learning

Throughout the course of this study, I learned a lot and grew personally. While I was interviewing, transcribing, reading journal responses, forming follow up questions, and examining documents for my study, I was also accumulating skills that I could use in other facets of my life. While learning to become a more effective interviewer and transcribe responses to interview questions, I also learned to listener better and not lead the person I was interviewing. Now when I have a conversation with people, I am not

looking for what they say that agrees with my thoughts, I am listening for what they have to offer because of the experience interviewing in my study. When I take notes, I spend more time trying to decipher the important concepts than a person states rather than trying to capture every detail. When I read or listen to people's responses, I am now simultaneously thinking of follow up questions to elicit more from the person being interviewed, while before I would just take everything I read or heard, without thinking about what it could possible mean or what was it related to. Now when I look at different documents, I am scrutinizing them more and trying to see how everything fits together, while before I would read a document and determine whether or not a really understood what it was saying. While I was becoming a better researcher, I managed to become a better person or at least a more aware person. While I am proud of how far I have come as an interviewer, researcher, and scholar, I am equally as surprised by the impact my work has had on me in other areas of my life.

I started this doctoral journey 7 years ago. Although, I never thought about not completing this journey, there were many times that I questioned why or when I would finish. Now, that I can see a light at the end of the tunnel, I can understand how I have grown from a student to a scholar. In the beginning of conducting interviews, I felt somewhat uncomfortable because I was not accustomed to listening and waiting for answers to questions asked. In the past, during general conversation, I used to have a habit of not allowing the other person to complete their thought without interrupting. During the process of gathering data, I have found patience in conversation and allowing the other person to finish their thought. As I listen to what they are saying, and not trying

to get my point across, but allowing myself to be open to respond to what they say and not find a way to intervene with my thoughts, if my point of view was still important. Ultimately, the times that I did not understand, self-doubt, and the difficulties to manage time management were overcome with knowledge, self-assurance, and determination. In addition, I have also become more patient in the teaching and learning process.

Growth as a Scholar

From creating research questions to developing a professional development to promote knowledge amongst fellow physical education teachers in the district. Once I determined what I wanted to study, I was able to form research questions. Next, I created interview questions that supported my research questions, selected and learned how to treat participants ethically, conducted interviews and carefully analyzed the participants' responses. Finally, I analyzed the obtained data, found patterns, then themes, and ultimately reached my results, without bias. This study has helped me to become a better scholar, supervisor or leader, and a transformer as it relates to physical activities to increase cardiovascular endurance for adolescent females. During this research, I had to determine what was more important to me, finishing my degree or entertainment. Many times, I had to forego plans to be with friends and to maintain an academic schedule to meet deadlines.

Growth as a Practitioner

As a practitioner of my profession, I have assisted my department chair in ways such as lesson and curriculum planning, supporting the promoting the district's curriculum and instructional programs at the district and building level; and collaborating

with other teachers on the building leadership team. I feel my communication, as well as listening skills have been improved and I feel more confident in my ability to voice opinions. In addition, I feel that I can express myself more clearly in writing, particularly scholarly writing, especially where data are used. Earlier in my teacher career, when in a summative about my year's progress in teaching, I would not argue against an administrator's opinion of what they thought they saw in my classroom. This year in my summative evaluation, I approached the meeting differently. As the assistant principal and I discussed the evaluation, I confidently countered a statement and she changed it based on my input.

Growth as a Project Developer

As I created this professional development, I realized the importance of time and responsibility of completing a project on time. I had to keep in mind the audience, the implementation of physical activities used to increase cardiovascular endurance, and that the goal was met at the completion of the professional development. In developing this professional development or any project, it is important to gather all the information that is available to move forward.

The data found in my study assisted in determining what physical activities should be included in the professional development. In my growth throughout the development of this project, I have realized that obtaining as much information as possible for an idea for a project, in this case, the professional development, could be the most important information needed as a project developer. The findings from this study informed me that physical education teachers needed hands on physical activity strategies

to increase cardiovascular endurance, clear school district expectations for physical activity for adolescent females, and strategies to improve physical activities for adolescent females. Because data from my study indicated that more physical activities for adolescent females are needed, I created physical activities that promoted fun and engaging activities to increase cardiovascular endurance. Professional development conducted in the past were more focused on physical activities in general, male or female. The professional development I created is more focused on what I discovered from both the data I collected and the literature, what physical education teachers need. Because of this experience of creating this professional development, I will be more efficient when designing professional development opportunities for education in the future.

Reflection on Importance of the Work

Overweight and obesity are the leading cause of heart disease, diabetes, and other health conditions (Draper et al., 2015). This study was significant because it would determine if physical education teachers felt that the current physical activities were adequate for adolescent females and if new physical activities would make a difference. The results from the research showed that physical education teachers felt that they physical activities currently used do not necessarily support the physical needs of the adolescent females in the district. In addition, the data indicated that they needed hands on physical activity strategies to increase cardiovascular endurance, clear school district expectations for physical activity for adolescent females, and strategies to improve physical activities for adolescent females. Cardiovascular endurance is important for a healthy lifestyle of not only adolescent females, but students in general. A solution to this

problem, I formed a professional development to address the requests or needs of the physical education teachers.

This study is also significant because it will bring attention as to how physical education teachers can become more equipped. According to the results of this doctoral study, physical education teachers showed they needed more developed physical activities for adolescent females to increase cardiovascular endurance. Through the creation and implementation of the professional development, collaboration with other physical education teachers is available to share how new physical activities worked in the physical education classes.

Implications, Applications, and Directions for Future Research

This project can support physical education teachers, department chairs, and administrators by offering research-based approaches for the effective implementation of physical activities to increase cardiovascular endurance amongst adolescent females. The data obtained from the six participants from my research made it possible for me to summarize the physical education teachers' perceptions of physical activities to increase cardiovascular endurance in adolescent females. The analysis of the obtained date through physical education interviews, led me to create a professional development that provided hands on physical activity strategies to increase cardiovascular endurance, clear school district expectations for physical activity for adolescent females, and strategies to improve physical activities for adolescent females. During the professional development, teachers viewed enlightening presentations and interactive physical activities to increase cardiovascular endurance in adolescent females.

Potential Impact for Social Change

This professional development was created to provide physical education teachers hands on physical activity strategies to increase cardiovascular endurance, clear school district expectations for physical activity for adolescent females, and strategies to improve physical activities for adolescent females. The social change potential for this study can occur with physical education teachers, students, schools, and individuals in the community. The data presented and the proposed project both have the potential to enrich knowledge as it pertains increasing physical activities to increase cardiovascular endurance. This knowledge can be used to assist youth who are currently overweight or who are in danger of becoming so. In addition, a social change will occur as adolescents reduce their chances for heart disease and diabetes throughout the community as well as other school districts. Physical student achievement is just as important as academic student achievement. Once cardiovascular fitness test scores amongst females improved from school to school, then district to district, the efficacy of the professional development program I designed will seem even clearer. The influence of this professional development could possibly spread from state to state leading to social change, and as stated earlier, a healthier community.

Recommendations for Practice and Future Research

The focus of this research was physical education teachers' perceptions of adolescent cardiovascular fitness. The data collected led to the creation of a professional development that provides physical activities that encouraged teachers to collaborate, evaluate, and encourage one another as they were provided hands-on physical activity

strategies to increase cardiovascular endurance. Future research on specific strategies that promote physical activities to increase cardiovascular fitness levels could go a long way toward improving increasing participation levels. In addition to increasing quality of instruction in the gym environment, the increase in engaged physical activity amongst adolescent females could be an improvement in fitness test scores.

For this research, I used interviews with physical education as my source of data. In future research, this project could use observations, interviews from female adolescent students, or surveys. Finally, the project could have a group of physical education teachers meet once a month to follow the success or failure of physical activities introduced in the 3-day professional development. The members of the group could be a mixture of physical education teachers and department chairs. A veteran teacher could be paired with a new teacher throughout the year. During the year, the veteran teacher will meet with the new teacher and discuss physical activities that worked and did not worked in the promotion of cardiovascular fitness.

Conclusion

Overweight and obesity amongst females is prevalent in our society. Eating healthy foods and exercise are well known as strategies to help in the prevention of the disease (Amadid et al., 2018). This qualitative study involved interviewing six physical education teachers on their perceptions of physical activities to increase cardiovascular fitness in adolescent females. I used interviews to collect and analyze data from the participants to determine the basis of their perceptions. The study was driven by the problem that adolescent females have low cardiovascular fitness levels which can lead to

an unhealthy lifestyle and diseases. Based on three research questions, I analyzed collected data to help describe teacher perceptions of adolescent female cardiovascular fitness, instructional practices used to increase cardiovascular fitness in adolescent females, how PA plays a role in cardiovascular fitness, and challenges physical education teachers face when trying to promote cardiovascular exercises to increase cardiovascular fitness. Physical education teachers that feel that it would be beneficial from a training in physical activities to promote cardiovascular fitness, may be inspired to discuss and collaborate with other physical education teachers who desire the same. When physical education teachers share methods to create physical activities to promote cardiovascular endurance for adolescent females, other teachers could also benefit from these resources.

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Appendix A: The Project

Goals: The professional development will last 3 days and offer physical education teachers the opportunity to obtain knowledge, participate and create physical activities that will increase cardiovascular fitness amongst adolescent females. Participants will create additional hands-on physical activity strategies, gain a clear understanding of the school district expectations for physical activity for adolescent females, and strategies to improve physical activities for adolescent females. Using informative presentations and collaborative activities, the professional development facilitator will help guide teachers toward a better understand of what is required to effectively manage a classroom. The first 2 days of the professional development will help physical education teachers plan and implement their physical education cardiovascular lesson plans. The third day will allow physical education teachers to reflect on the accomplishments and disappointments of their initial physical activities' strategies to increase cardiovascular fitness, and if possibly adjust methods to better increase cardiovascular fitness.

Learning Outcomes: During the first two days of the professional development physical education teachers will participate in power point presentations and create hands on presentations focused on providing a more complete understanding of how to use physical activities to create additional hands-on physical activity strategies to increase cardiovascular fitness amongst females, gain a clear understanding of the school district expectations for physical activity for adolescent females, and strategies to improve physical activities for adolescent females. Finally, at the end of the second

semester, after using the created physical activities of the first two days of the professional development, the third day will consist of physical education teachers sharing their first semester data reflecting cardiovascular fitness achievements, disappointments, and scores.

Target audience: The target audience for this professional development would be physical education teachers in the district. Assistant principals would also be asked to be in attendance and share input on the district's cardiovascular fitness expectations amongst adolescent females and the physical activities that the physical education teachers collaborations. Finally, department chairs will assist in the organization and use of equipment, facilitating collaborative groups, and following up with teachers as they use their cardiovascular fitness activities in the classes.

Components: The professional development consisted of three days and with each day focusing on different components of the three findings. The following is the outline of the professional development:

Day 1

Physical activities (PA) to increase cardiovascular fitness (CF) amongst females

Time	Topic	Method
8:00 – 8:30	Breakfast & Sign-in	Breakfast & Sign table
8:30 – 8:50	Welcome, Introductions Overview, and Expectations	Facilitator
8:50 – 9:00	Formative assessment	Entrance Ticket
9:00-9:30	Ice Breaker	Collaborative
9:30 – 10:00	Problem/importance of CF	Facilitator (PPT)
10:00-10:15	Break	
10:15-10:30	District/ School PE Expectations	Director of PE (PPT)
10:30-11:15	Team/Individual/Games	Teacher Collaboration
11:15 – 12:30	Lunch	On your own
12:30 – 1:00	Discuss non-participation reasons from females	Teacher Collaboration
1:00 - 1:30	Open discussion of reasons for non-participation from females	Facilitator
1:30-2:00	Past PE strategies	Facilitator
2:00-2:45	New strategies for CF	Teacher Collaboration
2:45-3:00	Formative Assessment	Exit Ticket

Day 2

Hands on PA to increase CF amongst adolescent females

Time	Topic	Method
8:00 – 8:30	Breakfast & Sign-in	Breakfast/Sign-in table
8:30 – 8:40	Formative assessment	Ticket in the Door
8:40 – 9:00	Day 1 Review	Facilitator
9:00 – 9:30	Example of warm up exercises	Facilitator
9:30-10:15	What kind of teacher are you?	Facilitator
10:15-10:30	Break	
10:30-11:30	(Cont.) New PA Strategies for CF	Grade level collaboration
11:30– 12:45	Lunch	On your own
12:45 – 1:00	Cardiovascular Test Scores	Facilitator
1:00- 2:15	PA developed	Teacher collaboration
2:15 – 2:45	PD End	Reflection: What did you learn? What do you have questions about? Critique of PA presented Next steps: Online Activity midyear: How did the physical activities learned, work in your class?

		(Summative Assessment)
2:45 – 3:00	Formative assessment	Ticket Out the Door

Day 3

Follow up/Second semester tune-up

Time	Topic	Method
8:00 – 8:30	Breakfast & Sign-in	Breakfast/Sign-in table
8:30 – 9:00	Formative assessment	Ticket in the Door
9:00 – 9:20	Previous PD Review	Facilitator
9:20 – 9:45	1st semester reflections	Teacher Activity
9:45-10:00	Break	
10:00-11:00	Physical Activities /Interventions	Teacher Collaboration
11:00 – 11:30	PD End	Evaluation

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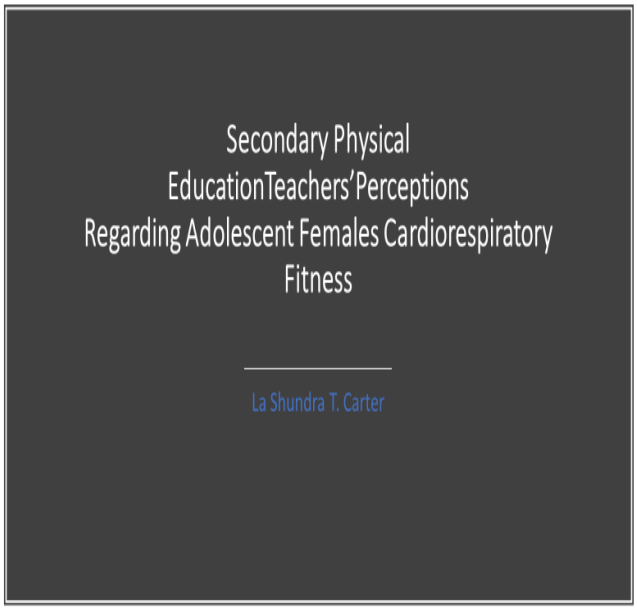

Slide 2

Day 1

Physical activities (PA) to increase cardiovascular fitness (CF) amongst females

Time	Topic	Method
8:00 – 8:30	Breakfast & Sign-in	Breakfast & Sign table
8:30 – 8:50	Welcome, Introductions Overview, and Expectations	Facilitator
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1:00 - 1:30	Open discussion of reasons for non-participation from females	Facilitator
1:30-2:00	Past PE strategies	Facilitator
2:00-2:45	New strategies for CF	Teacher Collaboration
2:45-3:00	Formative Assessment	Exit Ticket

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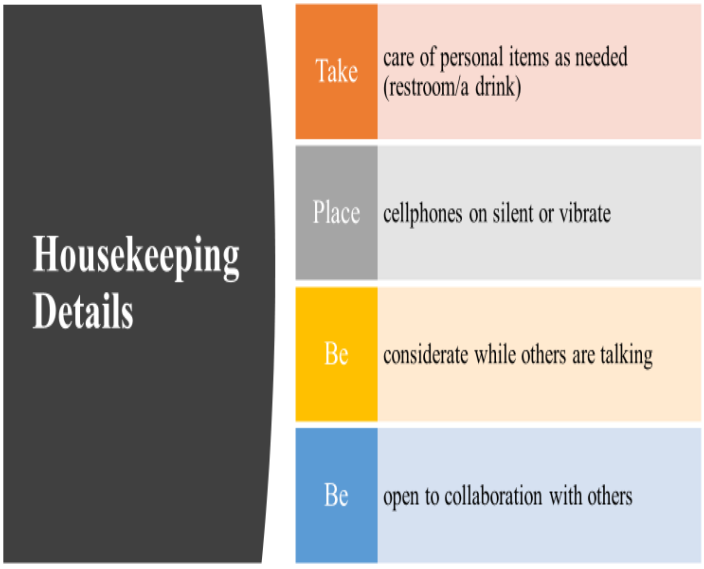

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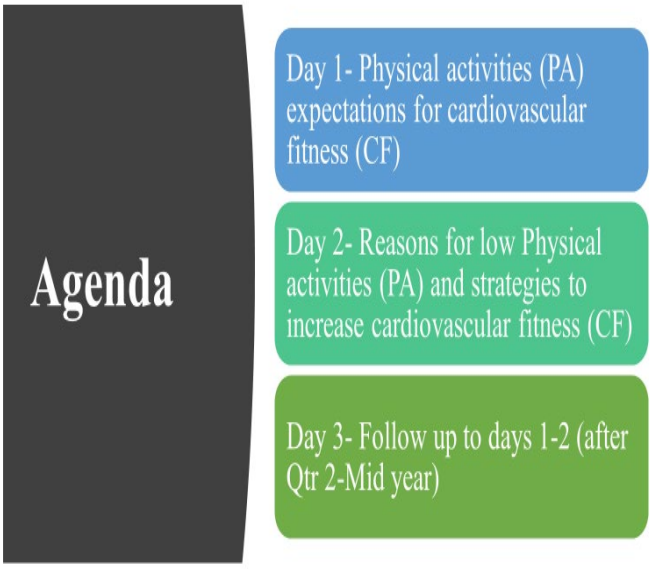

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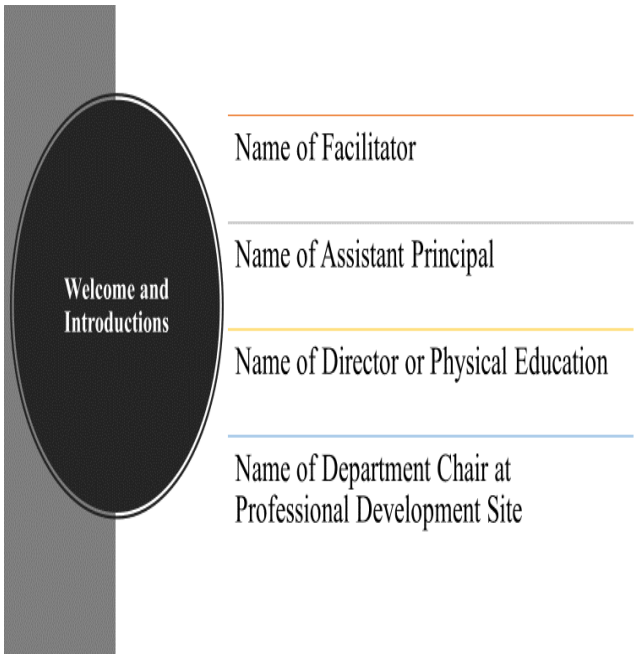

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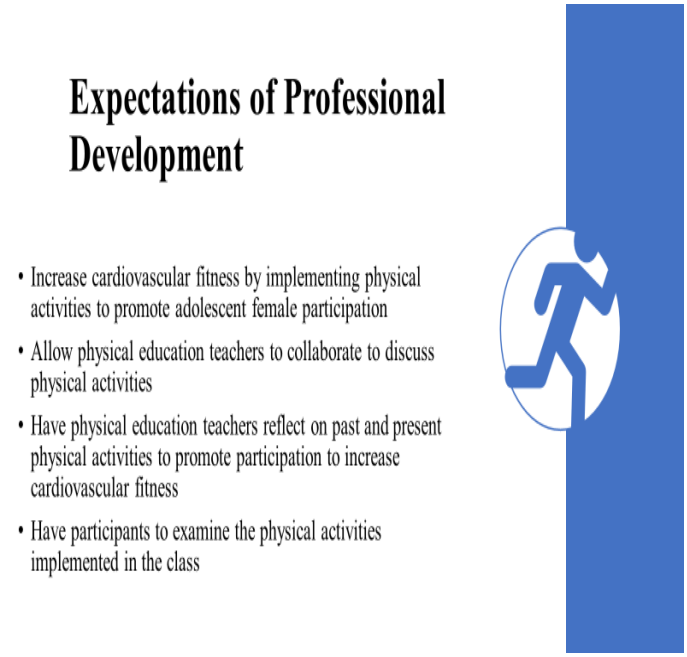

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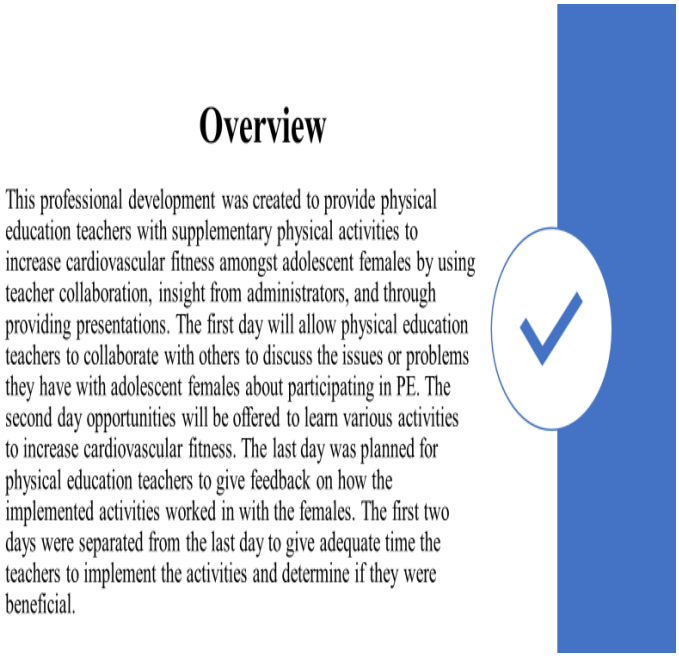

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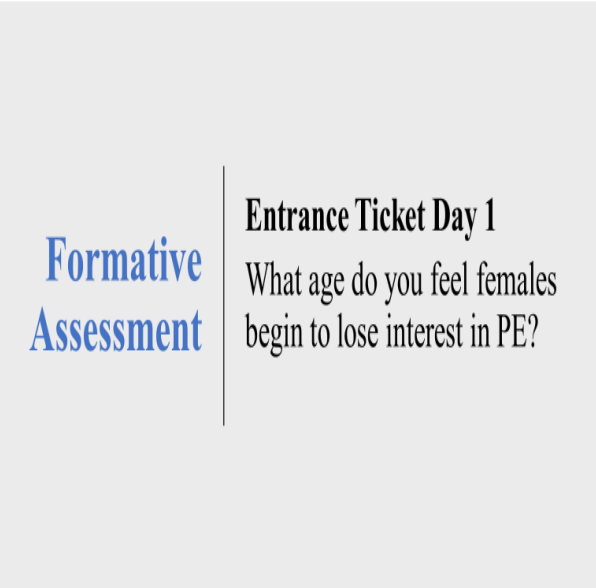

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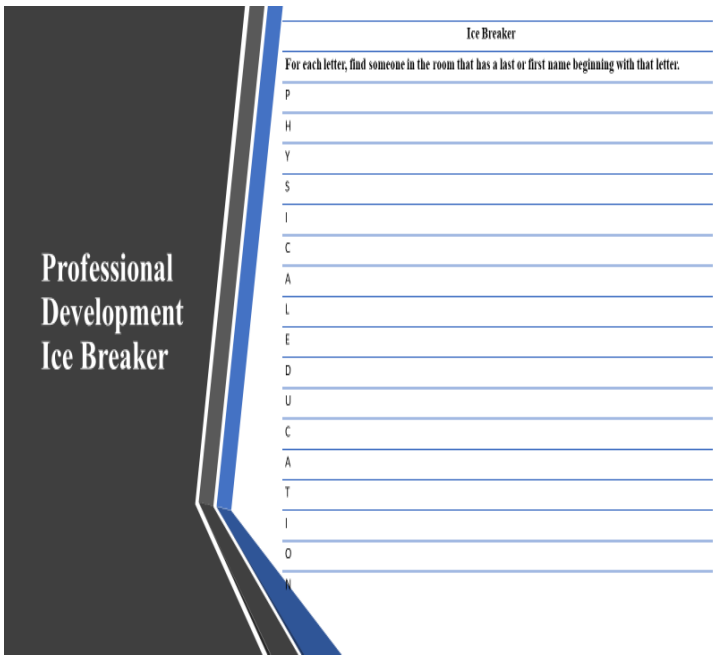

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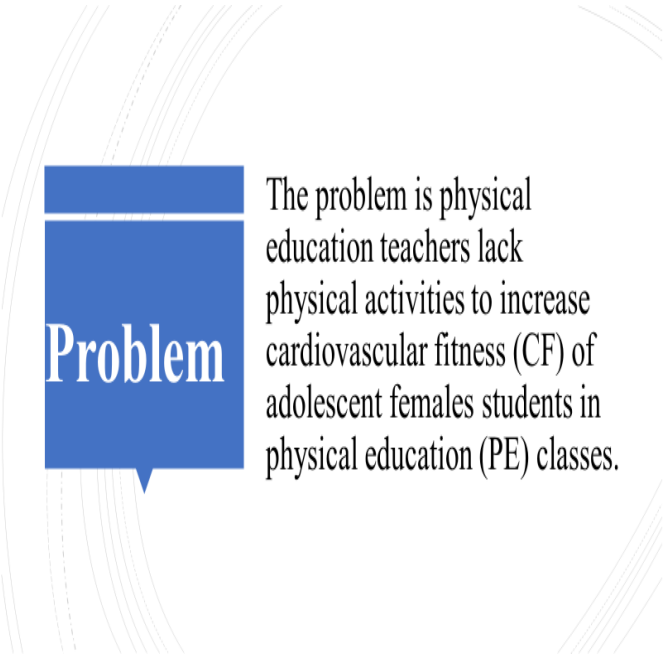

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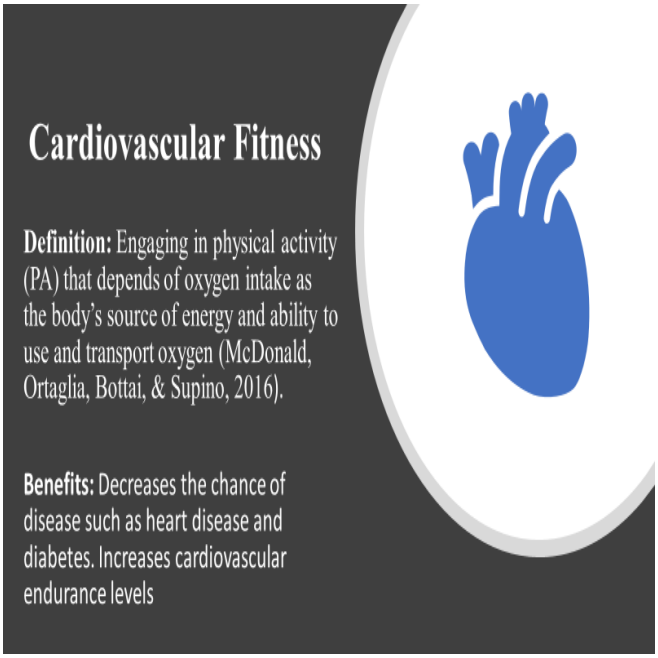

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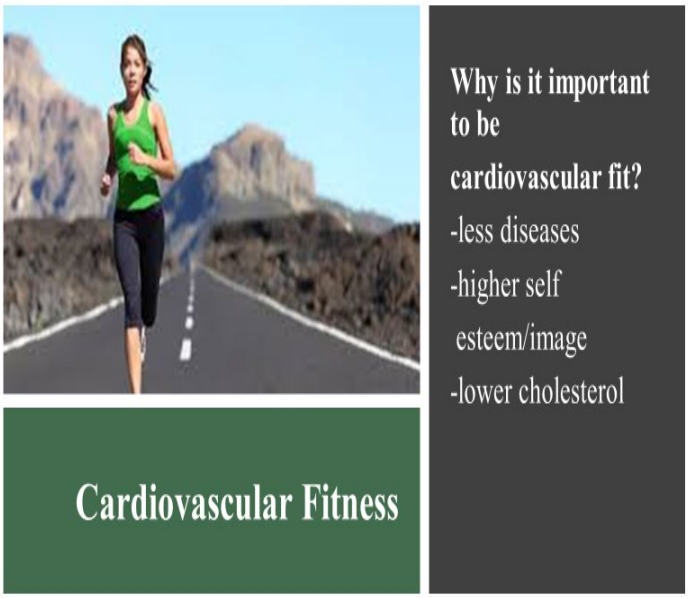

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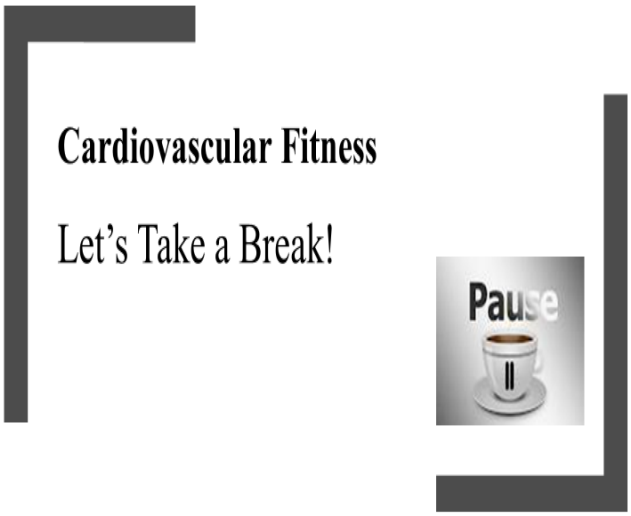

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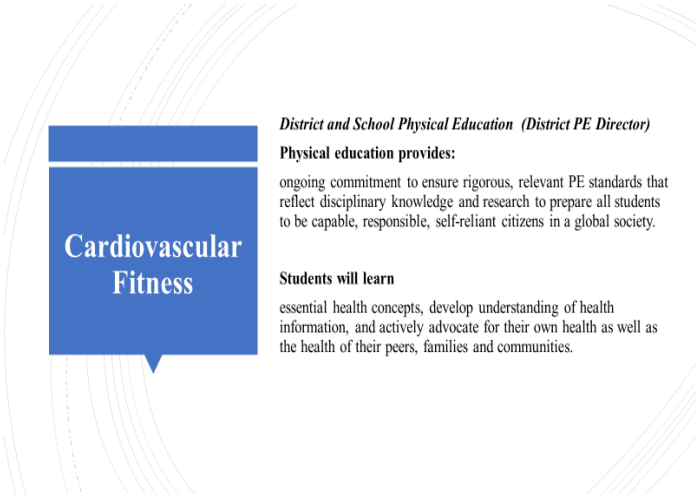


Slide 18: The teachers will discuss these three types of activities amongst themselves. After 10-15 minutes, each school will have a spokesperson from the school to give reasons as to why they like one over the other or why they can see a need for all three in their classes.

Cardiovascular Fitness

Team Sports: All sports that allow students to play together on offense and defense (

Individual Sports: Sports where students can play

Physical Education Games:

Slide 19

Cardiovascular Fitness

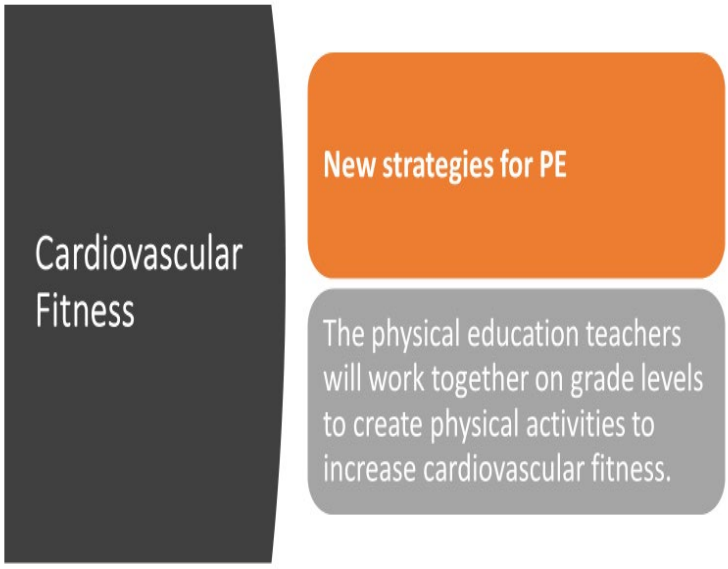
Lunch Time!

Slide 20

Slide 21: The physical education teachers will be asked to discuss the reasons that they have had to deal with when it comes to females not participating in PE. After 5-10 minutes the facilitator will bring the group back together and discuss the reasons as a whole.

Slide 22

Slide 23



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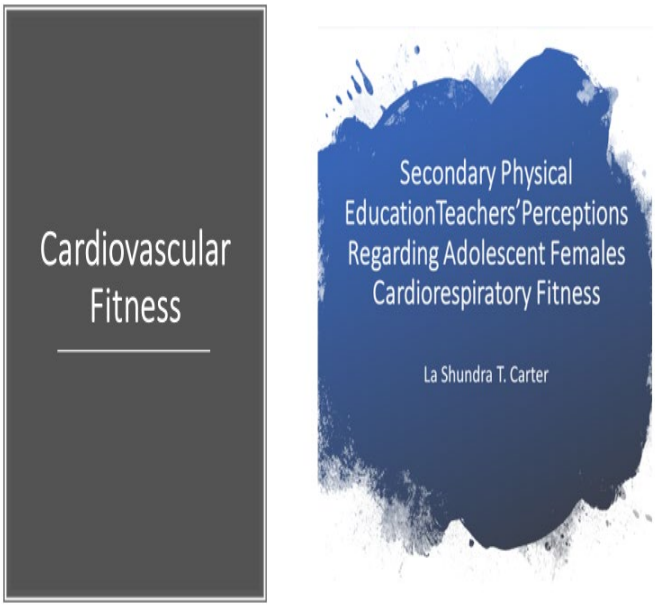


Slide 26

Day 2

Hands on PA to increase CF amongst adolescent females

Time	Topic	Method
8:00 – 8:30	Breakfast & Sign-in	Breakfast/Sign-in table
8:30 – 8:40	Formative assessment	Ticket in the Door
8:40 – 9:00	Day 1 Review	Facilitator
9:00 – 9:30	Example of warm up exercises	Facilitator
9:30-10:15	What kind of teacher are you?	Facilitator
10:15-10:30	Break	
10:30-11:30	(Cont.) New PA Strategies for CF	Grade level collaboration
11:30– 12:45	Lunch	On your own
12:45 – 1:00	Cardiovascular Test Scores	Facilitator
1:00- 2:15	PA developed	Teacher collaboration
2:15 – 2:45	PD End	Reflection: What did you learn? What do you have questions about? Critique of P presented Next steps: Online Activity midyear. How did th physical activities learned, wo in your class? (Summative Assessment)
2:45 – 3:00	Formative assessment	Ticket Out the Door

Cardiovascular Fitness

Slide 27

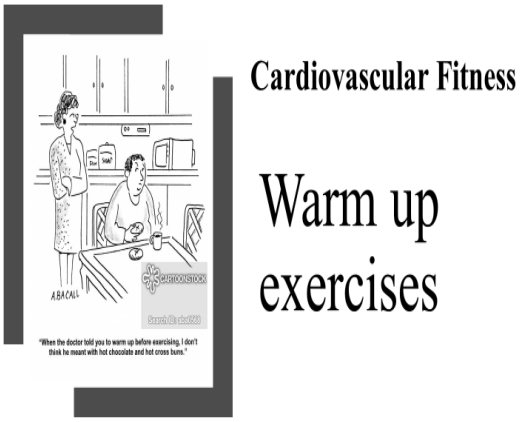
Cardiovascular Fitness

Entrance Ticket Day 2

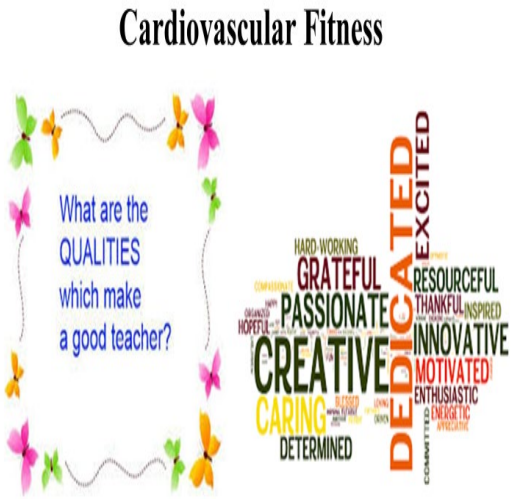
What activities have you used in the past, to increase the participation of females in your PE classes?

Slide 28

Slide 29: A handout will be passed out for the teachers review an example of a warm up strategy.



Slide 30: The physical education teachers will discuss the qualities that make a good PE teacher. They will discuss different qualities of a good teacher and will discuss with the entire group.



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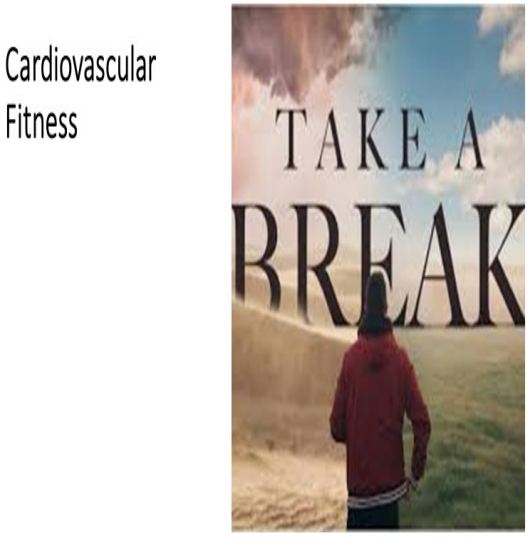


Slide 32: The physical education teachers will get back in the groups from the previous day and continue to develop activities to use during the 1st semester of school.

Cardiovascular Fitness

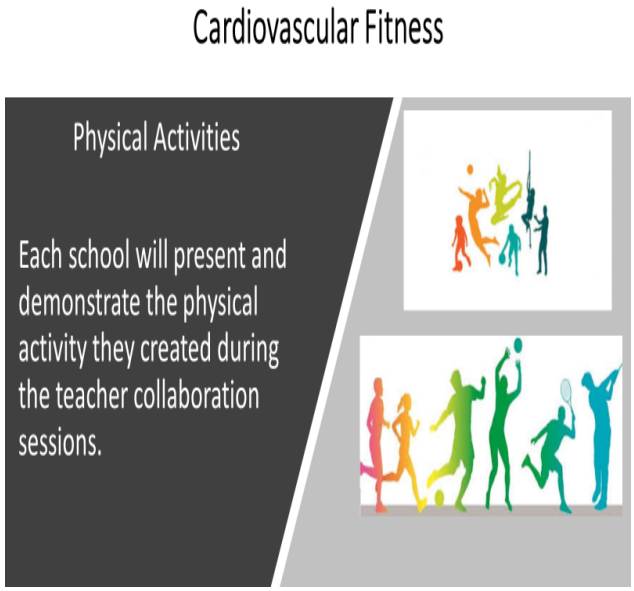
Physical Education Teacher Collaboration

Strategies for Cardiorespiratory Fitness

Slide 33

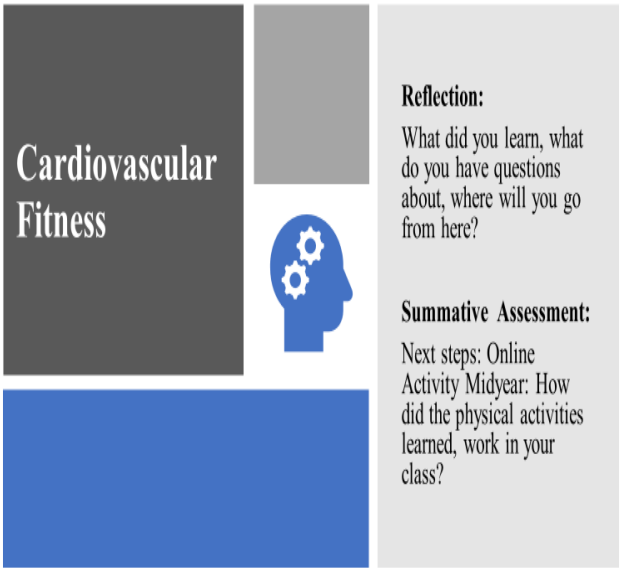
Slide 34: The cardiovascular test scores from the previous school year will be discussed.

Slide 35: The physical education teachers from each school will present the physical activities that they created to the rest of the group of teachers.



Slide 36: The physical education teachers will talk in an open session reflecting what they

learned and ask questions?



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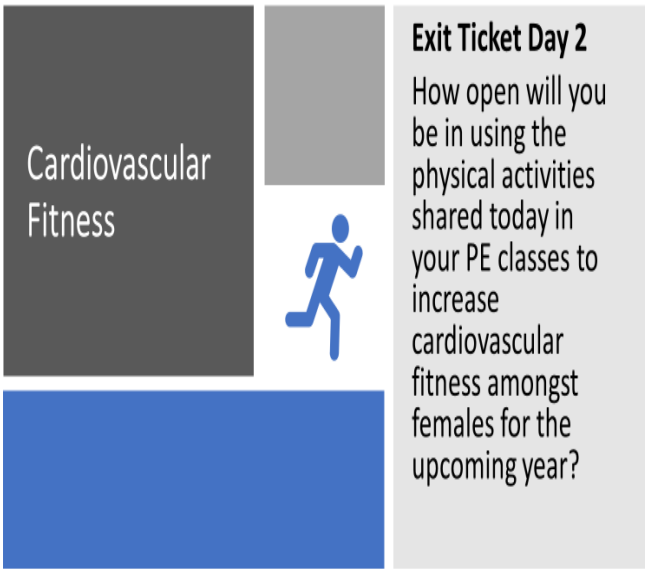

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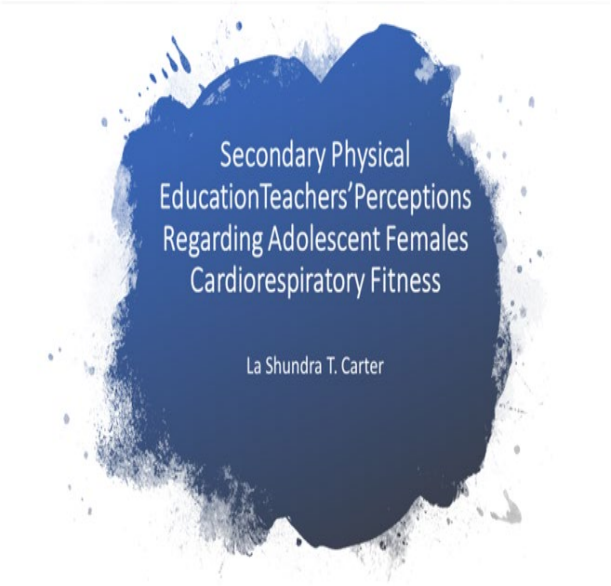

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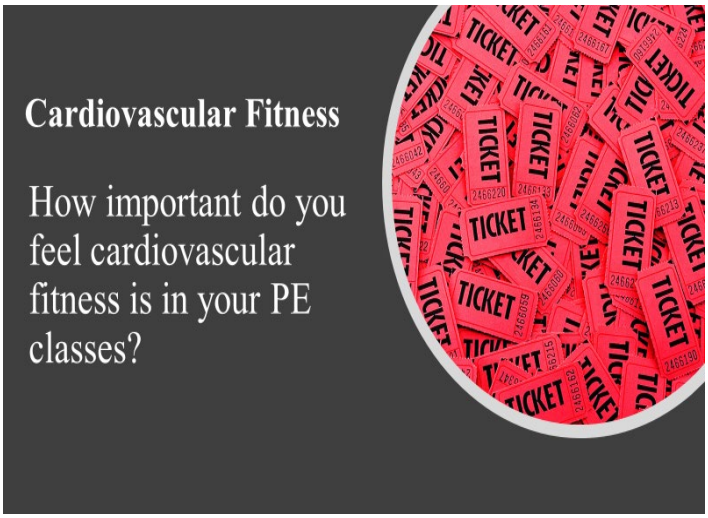
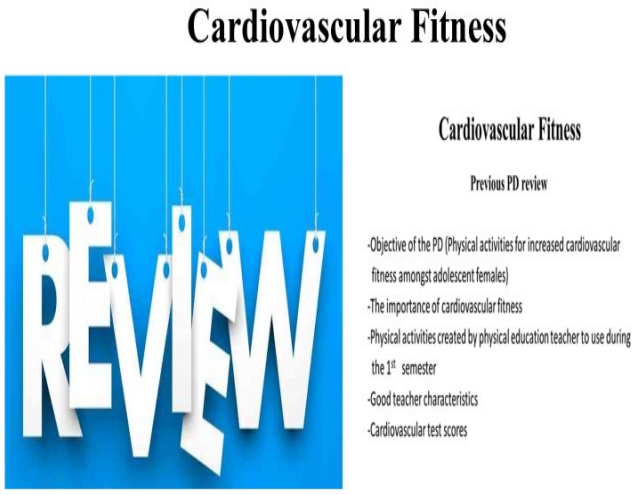
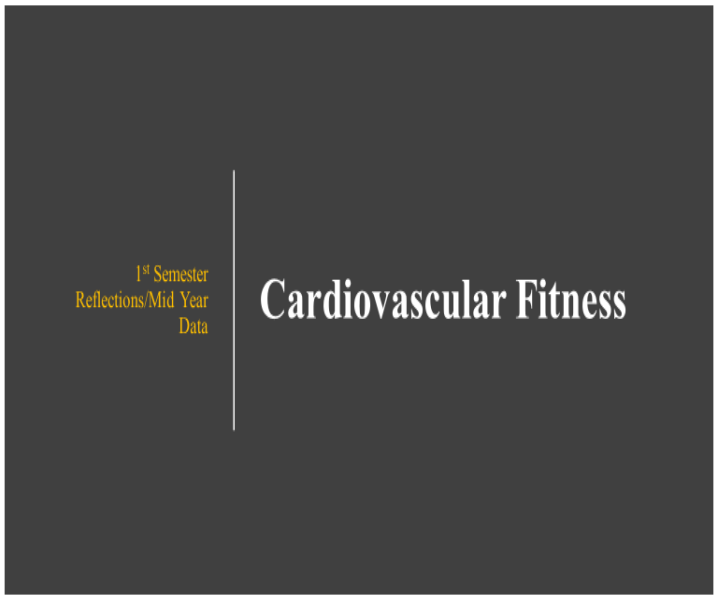


Slide 40: The first two days of the professional development will be discussed as a group.



Slide 41: The mid-year test scores will be discussed



Slide 42

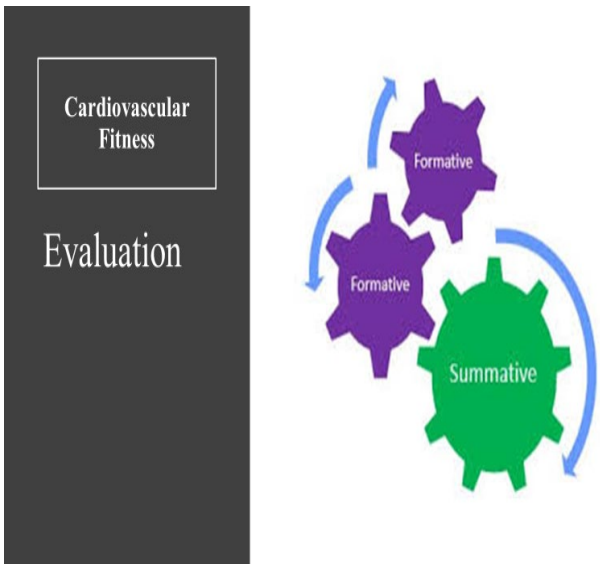
Cardiovascular Fitness

Slide 43: The physical education teachers from each school will discuss how the physical activities worked 1st semester. In addition, what would you change?

Cardiovascular Fitness

Physical Activities –How did they work the 1st semester

Slide 44: An evaluation will be given to rate the 3-day professional development. The physical education teachers will fill out the form and turn in at the end of day.



Professional Development Summative Evaluation

1. Did this professional development have an influence on your ability to encourage adolescent female participate in PA to increase cardiovascular endurance effectively? Why or why not?
2. Where did this professional development fall short in better preparing you to encourage adolescent females to participate in PA to increase cardiovascular endurance?
3. Which session, presentation, discussion, or activity influenced you to encourage adolescent females to participate in PA to increase cardiovascular endurance?
4. Which physical activity approach influenced you to encourage adolescent females to participate in PA to increase cardiovascular endurance, the presentation or the collaborative activities?

5. What would you improve about this professional development?

Appendix B:

Study Topic: Secondary Physical Education Teachers' Perceptions Regarding Adolescent Females Cardiorespiratory Fitness

Introduction

You have been asked to participate in this interview based on you volunteering to assist in this research. It is believed that you have a great information to disclose about teaching and providing instruction to adolescent females. The objective of this research project is to help physical educators improve physical education instruction to promote cardiovascular exercise to increase cardiovascular fitness. I will try to illustrate physical education teachers' perceptions in regard to providing cardiovascular exercises to adolescent females, and hopefully learn about different methods to help improve adolescent females' cardiovascular fitness.

Interview Questions:

1. At what grade levels have you noticed low cardiovascular fitness in females?
2. How many years have you been instructing adolescent females?
3. What was the focus of professional developments you attended in the last three years?

   Possible Follow-Up Prompt:

   - Describe trainings offered by the school district.
   - Have there been any trainings offered within your school.
   - Describe
4. Please describe any trainings or professional developments that improved

your instructional practices.

Possible Follow-Up Prompt:

- Describe how the improved instructional practices look in your class.

5. What is your definition of an adolescent female with low cardiovascular fitness?
6. Describe adolescent female participation in PE.
7. What cardiovascular exercises do you use to promote cardiovascular endurance?
8. If a female student continues to struggle with passing the PACER, what have you used to promote cardiovascular endurance?

   Possible Follow-Up Prompt:

   - On average, what cardiovascular endurance levels do you think most of the adolescent females are in your PE classes?

9. Do you think the curriculum that you use is designed to improve adolescent females' cardiovascular endurance?
10. How often do you assess the cardiovascular endurance level of your adolescent females?
11. Are the results from the PACER fitness test useful for you when planning instruction?
12. What difficulties do you routinely face when giving the PACER fitness test?

    Possible Follow-Up Prompt:

    - What methods did you implement to address those

difficulties?

13. Do you think female adolescent students who have low cardiovascular endurance can ever increase their cardiovascular fitness? Please explain.
14. Are there cardiovascular strategies in place successful at promoting CF with your adolescent female students? Please explain.
15. What supports should be offered to you to assist with improving cardiovascular fitness for adolescent females?