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ABSTRACT


Peña, Eva, The Effects of a School-Based Intervention on the Physical Activity Behaviors of Latino High School Students. Master of Public Health (Community Health), May 2004, 66 pp., 5 tables, 2 illustrations, 6 titles.

The study was to determine if a culturally appropriate school-based intervention increases self-reported levels of physical activity (PA) in 9th grade Latinos. A culturally appropriate intervention could help Latino youth adopt and maintain PA. Students from two primarily Latino schools served as subjects. Experimental students received a modified form of *Salud Para Su Corazón*, a Latino community-based cardiovascular health initiative. Questions from CDC's YRBSS were used to measure PA changes. A 3-way mixed model ANOVA was used to investigate the effect of pre-post, treatment, and gender on self-reported days of participation in moderate (M) and vigorous (V) PA. Students reported increased M and V PA at the post-test compared to the pre-test. The experimental students tended to report greater increases in V PA following intervention compared to controls. Males reported higher levels of V PA than females. Results suggest some potential effect on student PA behaviors as a result of the intervention.

THE EFFECTS OF A SCHOOL-BASED INTERVENTION ON THE PHYSICAL
ACTIVITY BEHAVIORS OF LATINO HIGH SCHOOL STUDENTS

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ACTIVITY BEHAVIORS OF LATINO HIGH SCHOOL STUDENTS**

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CHAPTER I

INTRODUCTION

Physical activity is the first Leading Health Indicator of Healthy People 2010. As all Leading Health Indicators, physical activity reflects a public health concern in the United States (United States Department of Health and Human Services [USDHHS], 2000). There are many proven benefits of being physically active. These include reducing people's risk for heart attack, stroke, certain types of cancers, diabetes, and high blood pressure (USDHHS, 2003). According to the Centers for Disease Control and Prevention (CDC), it is recommended that people accumulate at least 30 minutes of moderate physical activity 5 or more days of the week. Despite the benefits of physical activity, more than 60% of American adults do not get the recommended amounts to provide health benefits (USDHHS, 2003). Lack of physical activity along with lack of proper nutrition, are factors associated with overweight and obesity. Over 60% of adults in the U.S. are overweight and obese, and obesity is currently the second leading cause of preventable disease and death (Zhang & Wang, 2004).

Lack of physical activity, overweight, and obesity is not only a problem among adults, but is now a primary concern among U.S. youth. Many American children and adolescents are living sedentary lives. More adolescents are being less physically active and are watching more television each day with a reported 43% watching more than 2 hours of television each day (USDHHS, 2001). According to the CDC 2001 Youth Risk

Behavior Surveillance System (YRBSS), 74% of youth between the ages of 10-24 do not participate in sufficient moderate physical activity and 35% of youth do not participate in vigorous physical activity. The CDC defines sufficient moderate physical activity as activity done that does not make a person sweat or breath hard for 30 or more minutes on 5 or more days of the week (2001). Sufficient vigorous physical activity is defined as activity done that does make a person sweat or breath hard for 20 or more minutes on 3 or more days of the week. The YRBSS also reports a difference in physical activity behaviors between genders demonstrating that male students are significantly more likely than female students to be more physically active (Sallis, Zakarian, Hovell, & Hofstetter, 1996; USDHHS, 2001). Adolescents are also not participating in physical education classes as much as they were before. Participation in high school physical education classes on a daily basis dropped from 42% in 1991 to 29% in 1999 (USDHHS, 2003). Among children and adolescents aged 6-19 years, an estimated 15% or about 9 million youth are considered overweight (USDHHS, 2000). The percentage of young people who are overweight has more than doubled in the last 20 years (Lissau et al., 2004; Ogden, Flegal, Carroll, & Johnson, 2002; USDHHS, 2003). As in adults, many young people suffer from health problems due to overweight and obesity. These health problems include the increased risk of heart disease, type 2 diabetes, high blood pressure, and some types of cancer (USDHHS, 2001). Children and adolescents who are overweight are more likely to have high cholesterol and high blood pressure, which are risk factors for heart disease. Overweight adolescents also have a 70% chance of becoming overweight or obese adults (USDHHS, 2001).

Insufficient physical activity, overweight and obesity, is also a problem among all Americans regardless of race and ethnicity. Among Hispanic adults, 49% of men and 57% of women report no leisure-time physical activity (National Health Interview Survey [NHIS, 1997-98], CDC/National Center for Health Statistics [NCHS]). Low levels of physical activity among this population may contribute to the reported increase in overweight and obesity. Among Hispanic adults, 66.2 % of men and 56.6 % of women are overweight or obese. Overweight is defined as a Body Mass Index (BMI) of 25.0 kg/m² or higher, and obesity is defined as a BMI of 30 kg/m² or higher (NHIS [1997-98], CDC/NCHS). Among Mexican American adults, 75% of men and 72% of women are overweight or obese (National Health and Nutrition Examination Survey [NHANES, 1999-2000], CDC/NCHS). The high levels of overweight and obesity among the Latino population are risk factors for diseases that are prevalent among them such as cardiovascular disease (CVD) and diabetes (Alcalay, Alvarado, Balcazar, Newman, & Huerta, 1999). Cardiovascular disease is the leading cause of death among Latinos living in the United States. A large part of the Latino population is generally unaware of important lifestyle or behavioral changes that can help prevent CVD (Alcalay et al., 1999). Similarly, the age-adjusted prevalence rate of diabetes among Mexican-Americans and Puerto Ricans is two to three times greater than among non-Hispanic Whites (Alcalay et al., 1999). This population tends to have sedentary lifestyles as well as diets high in fat that eventually lead to health-related problems.

Latino youth in particular show an increased risk in overweight and obesity because of low physical activity, sedentary lifestyles, and high fat diets. According to the

2001 YRBSS results, Hispanic students are significantly more likely than White students to be overweight. Among Mexican-American adolescents ages 12-19, 27.5% and 19.4% of boys and girls respectively are overweight, based on the 95th percentile of BMI values on the CDC 2000 growth chart (NHANES [1999-2000], CDC/NCHS; Ogden, Flegal, Carroll, Johnson, 2002). The YRBSS also reports that Hispanic students participate in less sufficient moderate and vigorous physical activity when compared to White students (CDC, 2001). Hispanic students are also more likely than White students to watch television 3 or more hours a day during an average school day (CDC, 2001). These sedentary behaviors among the Latino youth puts them at risk for health problems such as diabetes, high blood pressure, and CVD (Urrutia-Rojas, Bayona, Ahmad, Alvarez-Garriga, Marrufo, Menchaca, 2002). Diabetes has rapidly been appearing in young Latino children. It is now estimated that approximately one in two Latino children will develop the disease (McConaughy, 2003).

Health Promotion Programs in School Settings

The reported health behaviors that occur among U.S. adolescents demonstrate a strong need for education and health promotion that includes benefits of being physically active. One way to accomplish this is through health promotion programs done in school settings. School settings are most capable of delivering health education to students because most all children and adolescents can be reached in schools, and because schools already have an existing infrastructure that includes health and physical education (Sallis et al., 1992). One of the objectives in Healthy People 2010 is to increase the proportion of schools that provide health programs to prevent health problems (USDHHS, 2001).

According to the CDC, schools can provide many opportunities for young people to engage in physical activity and can play an important role in motivating them to stay active (Burgeson, Wechsler, Brener, Young, & Spain, 2001). It is recommended that schools should “endure quality, daily physical education in all school grades in order to develop in students the knowledge, attitudes, skills, behaviors, and confidence needed to be physically active” (USDHHS, 2001). In order to address the importance of health programs in schools, in 1997, the CDC published research-based *Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People*. These guidelines list “a comprehensive approach to promoting physical activity through schools with daily physical education; classroom health education that complements physical education by giving students the knowledge and self-management skills needed to maintain a physically active lifestyle; and daily extracurricular physical activity programs” (Brugeson et al., 2001, p. 279). National standards for youth physical activity programs have also been developed and widely disseminated that describe what students should know and be able to do and what the content and skills physical education teachers and athletic coaches should have. It is especially important to impact youth because developing healthy behaviors can be adopted at an early age and maintained for years.

Physical activity-related health promotion programs in schools could benefit all adolescents of any race or gender. In many minority communities, schools are the most likely environments for successful health promotion programs that target children as well as family (Heath & Coleman, 2003). Various efforts to promote physical activity can

help increase exercise and decrease overweight and obesity in young Latino adolescents. Some programs may include culturally appropriate approaches in order to accommodate the targeted community. Health information messages including print materials, videos and television, developed for the majority population may be inaccessible or unsuitable for other cultural or ethnic groups. Not all materials are appropriate for various cultures, it is therefore important to develop culturally appropriate materials to accommodate them. Culturally appropriate health education materials are designed to both take into account differences in language and nonverbal communication patterns and to be sensitive to cultural beliefs and practices of the community of interest (Anderson et al., 2003).

Objective

The objective of this study is to determine if a school-based intervention has any effect on the physical activity behaviors of Latino 9th grade students.

Hypothesis

The hypothesis for this study is for the students that received the school-based intervention to demonstrate a significantly greater self-reported health behavioral change as related to physical activity after participating in the program. Both female and male students from the control group should demonstrate no change in health behaviors.

CHAPTER II

LITERATURE REVIEW

Many school-based interventions aimed at promoting healthy behaviors, such as physical activity, have been developed like the Child and Adolescent Trial for Cardiovascular Health (CATCH) program and the Sports, Play, and Active Recreation for Kids (SPARK) (Luepker et al., 1996; Sallis, McKenzie, Alcaraz, Kolody, Faucette, & Hovell, 1997). Some programs have been developed that provide cardiovascular health education in order to help reduce related risk factors. Various intervention strategies have been used to implement these types of school-based programs. Many studies have been conducted that have evaluated the various programs in order to learn of their outcomes. Some of the programs studied incorporate health related lessons into already established classroom curriculums. Lessons that focus on increasing physical activity and proper nutrition are incorporated into the curriculum and are usually taught by either trained teachers or undergraduate students. Evaluations of two such programs done with elementary school students have shown an increase in dietary behaviors and health knowledge, but found no significant improvements in physical activity behaviors (Coates, Jeffrey, & Slinkard, 1981; Walter, Hofman, Vaughan, & Wynder, 1988). One of the studies that took place in New York incorporated elements of social-learning theory into its curriculum. The physical activity component of this intervention was taught to elementary school students for approximately two hours per week throughout five school

years (Walter et al., 1988). The other program called the Heart Healthy Program, incorporated social learning strategies to encourage behavior change (Coates, Jeffrey, & Slinkard, 1981). The physical activity component of the curriculum was taught to 4th and 5th grade students. The lessons were delivered in six 45-minute classes that spanned one school year.

Other programs that also incorporate health related lessons into a classroom curriculum may have a focus on reducing the prevalence of obesity by reducing the amount of TV viewing. One such program called Planet Health that took place in Massachusetts was done with students from grades 6 to 8 (Gortmaker et al., 1999). Trained teachers from four major subjects and PE taught lessons that focused on increasing activity and decreasing inactivity. Approximately 32 lessons were implemented within a 2 year span and an additional lesson developed a 2-week campaign to reduce television viewing. The prevalence of obesity among girls in the intervention schools was reduced compared to control schools and no differences were found on boys. Television viewing was reduced among girls and boys in the intervention schools. Obesity prevalence was determined by measuring Body Mass Index (BMI), triceps skinfold, and self-reported TV viewing of the students and looking at pre to post changes.

One study done with high school students found that a health education curriculum improved physical activity (Killen, Telch, Robinson, Maccoby, Taylor, & Farquhar, 1988). The students who were enrolled in California high schools, attended intervention sessions three days a week for seven weeks. The sessions were delivered as part of the physical education curriculum and included lessons on physical activity,

nutrition, cigarette smoking, stress, and personal problem solving. Results for this study reported that changes in self-reported behavior and knowledge scores for students who received the curriculum were greater than for the students in the control group who did not receive it. Students who received the intervention who were not exercising regularly before also reported regular exercise at follow-up.

Studies have also been done on programs that use multiple intervention strategies. These programs not only incorporate health related curriculum but also use other methods to carry out the intervention. An example of this is the Go for Health Program carried out in a Texas elementary school with 3rd and 4th graders (Simmons-Morton, Parcel, Baranowski, Forthofer, & O'Hara, 1991). The three intervention components used in this particular program were the health educational curriculum (6 lessons), fitness-oriented PE, and lower fat and sodium school lunches. PE teachers were trained to deliver the school-based curriculum. After two years of intervention, the percent of PE class time that students engaged in moderate-to-vigorous physical activity increased from the baseline of 10% to 40% at post-test.

Another program that involved the training of PE teachers was the Sports, Play, and Active Recreation for Kids (SPARK) (Sallis, McKenzie, Alcaraz, Kolody, Faucette, & Hovell, 1997). The teachers from California schools were trained to implement a health related PE curriculum that incorporated health and skill-fitness activities. Intervention schools were assigned either certified PE specialists or trained PE teachers. The PE classes took place for 30 minutes approximately 3 times a week for two years. Results reported that students in schools that were assigned certified PE specialists (40

min) and trained PE teachers (33 min) all spent more minutes per week being physically active than in control classes. Girls from schools that were assigned certified PE specialist reported a significant intervention effect in two fitness measures including one mile run time and sit-up tests.

Some studies done on school-based interventions reveal short term outcomes while others report long-term outcomes. One study called the Class of 1989, began in 1983 with 6th grade students and conducted an intervention through their 10th grade year (Kelder, Perry, & Klepp, 1993). The study conducted measurements (self-reported surveys and physical activity score) each year and had follow ups through the students' senior year. The intervention included a peer-led curriculum intended to promote regular physical activity and healthy eating in and outside of school. Girls from the intervention schools had significantly higher physical activity levels throughout most of the follow-up periods as compared to the boys.

One of the most studied programs that use multiple component interventions to increase physical activity among students is the Child and Adolescent Trial for Cardiovascular Health (CATCH) program. Students from public schools located in California, Louisiana, Minnesota, and Texas, participated in the intervention from their 3rd to their 5th grade year. The intervention components included a classroom health curriculum, enhancement of PE, and modifications of school food service (Luepker et al., 1996). The intervention also had family-based components that included home curricula and family fun nights. Both the classroom and home curricula were implemented by classroom teachers over a fixed time period during each school year and included topics

on physical activity, nutrition, and cigarette smoking. Students in the intervention schools reported significantly more daily vigorous physical activity than control school students. The students in the intervention schools reported increased vigorous physical activity in PE classes and decreased percentage of energy intake from fat in school lunches when compared to control schools.

Many studies have been done on CVD intervention programs for the general population, but not many have been done that target minority populations. In addition, not many CVD intervention programs have been done on the Latino community. Programs for the general population can often be too broad and have failed to address specific cultural determinants and characteristics. These determinants and characteristics for the Latino population can include language, traditional diets, traditional beliefs in illness and death, socio-economic status, and health insurance availability. In contrast, previous studies have demonstrated that “intensive health education and promotion programs specifically designed to meet the needs, values, and circumstances of Latinos, can be effective tools for communicating essential health information” (Alcalay et al., 1999, p. 361). There specially have not been many CVD-related intervention programs done on Latino students to help increase physical activity levels. One intervention program called Dance for Health was designed to help Hispanic and African American adolescents increase physical activity levels and reduce BMI. The intervention incorporated a culturally sensitive health curriculum twice a week and a dance oriented physical education class three times a week (Flores, 1995). The 25-lesson curriculum was revised from another program and included topics on physical activity, nutrition, and

unhealthy weight regulation practices. The dance-oriented physical education class replaced the student's regular education class. Results reported a significant decrease in BMI and heart rate, decrease in one mile run times, and positive attitudes about physical activity on the girls that received the intervention as compared to the boys.

The CATCH program also implemented its intervention to schools in El Paso, Texas. The schools had mostly Hispanic children of predominantly Mexican heritage. The intervention was done as previously mentioned in other states with the components including classroom, PE, cafeteria, and home (Heath & Coleman, 2002). Results reported a significant increase in moderate-to-vigorous physical activity for most intervention schools. Results also reported that no schools increased vigorous physical activity in PE classes or decreased sodium in school lunches. Results suggested modifying the curriculum and family material to cater to the Hispanic community. The modifications to the materials would include translation into Spanish and addition of culturally appropriate activities.

Another more recent program called Project Participation and Training in Health (PATH) was done targeting Latino 9th grade students in Dallas, Texas. The school-based intervention used a curriculum that was modified from a CVD education program that incorporated culturally-appropriate materials. The lessons involved topics that focused on increasing physical activity behaviors, proper nutrition, and reducing smoking. 9 lessons were delivered by near-peer mentors throughout one school year. A summary of the results of the school-based intervention described in this literature review is shown in Table 1. The summary of the description for this project is also included.

Table 1

School-Based Interventions

Intervention	Methodology	Results
Heart Healthy Program	4 & 5 th grade students. PA curriculum. 6-45 minute lessons. 1 year	No significant improvement in PA behaviors
Go For Health Program	3 & 4 th grade. Trained PE teachers taught 6 lessons, fitness-oriented PE, lower fat & sodium lunches. 2yrs.	MVPA time in PE increased 10% to 40%
SPARK	PE curriculum taught by either PE specialists or trained PE teachers	PE specialist-taught students spend 40 min more/wk being PA
Class of 1989	6 through 10 th grade year. Peer-led lessons on PA/nutrition	Girls had significantly higher PA levels compared to boys
CATCH Program	3 through 5 th grade yr. Health lessons, PE enhancement, school lunch service modifications	Increase in daily VPA. Increase VPA in PE
Dance For Health	25 Culturally sensitive health lessons 2 times/week, dance-oriented PE	Decrease in 1-mile run, BMI & heart rate in girls
El Paso CATCH Program	Same intervention as CATCH	Increase MVPA for most schools. No increase in VPA in PE
Project PATH	9th grade Latino students. 9 Culturally appropriate health lessons taught by near-peer mentors. 1 yr.	Increase in MVPA. Higher levels of VPA for boys.

CHAPTER III

METHODOLOGY

Intervention

Project Participation and Training in Health (PATH) was a school-based health promotion intervention delivered to students in a school with approximately 80% Latino students (Greatschools.net, 2003). Project PATH was funded in part by a grant from the Texas Higher Education Coordinating Board. The program was delivered at an urban high school in Dallas, Texas. Project PATH was delivered to 9th grade students who were enrolled in Career Connections classes in the fall and in Health classes in the spring during the 2002-2003 academic year. Project PATH's main goals were to increase the amount of physical activity in which students engage, reduce the number of overweight students, reduce student cigarette smoking, and to increase awareness of health professions among minority students. Another objective for the project was to train university students in the delivery of a health promotion program to Latino students who are members of an underserved ethnic population that suffers from health disparities. The project was conducted at a high school that had a high Latino enrollment in order to help address some of those health issues facing the Latino community, such as cardiovascular disease and diabetes.

Project PATH implemented culturally appropriate health lessons and conducted a health club for the students. The lessons were delivered by four university undergraduate and graduate students, who served as near peer mentors to the high school students. The part time employed near peer mentors or teacher assistants were all bilingual Latinas who had similar cultural backgrounds as the high school students and who were between the ages of 19 to 24. The nine lessons taught were modified from the *Salud Para Su Corazón* (Health for Your Heart), a Latino community-based cardiovascular health education program developed from the National, Heart, Lung, and Blood Institute. The lessons were comprised of hands-on activities, role-playing, demonstrations, videos, visuals, handouts, brochures, and comic books. The *Salud Para Su Corazón* (SPSC) program utilizes culturally appropriate health promotion strategies to increase awareness about heart disease, increase knowledge about CVD prevention, and to promote heart-healthy lifestyles in Latino communities (Alcalay et al., 1999). Project PATH incorporated many of the educational materials from the SPSC program that included: 1) *Su Corazón, Su Vida* (Your Heart, Your Life) Health Educator Manual; 2) *Mas Vale Prevenir Que Lamentar* (An Ounce of Prevention); a fotonovela (comic book) and workbook; 3) Bilingual educational booklets and Recipe book; and 4) Educational videos including mini telenovelas (public service announcements). The educational materials were donated to Project PATH by the North Texas SPSC program. Lessons from the *Su Corazón, Su Vida* were adapted to the ninth grade level for a school curriculum. The PATH Health Educator's Manual table of contents with all lessons and the physical activity sample lesson are presented in Appendix A

The first four lessons were taught in the fall semester of the school year in the student's Career Connections classes and the last five were taught in the spring semester in their Health classes. Career Connection classes taught life and study skills to all the ninth grade students. The lesson topics included heart disease education and risk factors, making healthy eating choices, and the benefits of being physically active, maintaining a healthy weight, and not smoking (see Appendix A). The lessons were incorporated in the class curriculum and each lesson was taught in one class period. The content of the lessons were reinforced throughout the students' classes and were delivered to influence student lifestyle behaviors.

Many culturally competent aspects were provided by Project PATH, which included:

- Culturally appropriate materials modified from the SPSC program
- Bilingual health booklets/recipe books, fotonovelas, telenovelas
- Lessons that included examples of Latino foods
- Continuous encouragement of family involvement
- Bilingual Latina near-peer mentors with similar educational/cultural backgrounds as students, who also served as role models
- Staff member that helped with the original development of the SPSC program
- Latino guest speakers at Health club meetings and field trips
- Cooking classes at Health club meetings that included Latino dishes

Statistical Analyses

Secondary data were analyzed from the results of the Project PATH YRBSS questionnaire. The analysis was conducted on the questions pertaining to physical activity behaviors to determine the effectiveness of a school-based intervention on Latino 9th grade students. The questionnaires were administered at the beginning of the school year (fall) and once again toward the end of the school year (spring). The same questionnaires were administered around the same time to ninth grade students at a school that served as the control school. The control school had a similar demographic and ethnic background as the school that received the intervention.

The questionnaire was a partial reproduction of the YRBSS, a survey for youth from the CDC that asks questions about health behaviors. The CDC YRBSS was developed to monitor priority health risk behaviors that contribute to the leading causes of death, disability, and social problems among youth in the U.S. (CDC, 2003). The data obtained for the analyses included demographic characteristics and the results from the self-reported physical activity questions for the students from both the intervention and control schools. Physical activity questions (10) include such questions as amount of days in a week spent participating in moderate and vigorous physical activity, minutes spent exercising during physical education class, and hours spent watching television (see Appendix B). The sample 330 students from whom the data were collected, were between the ages of 14 through 16, and self-reported their ethnicity as Hispanic or Latino (see Table 2). A 3-way mixed-model factorial analysis of variance design with repeated measures was used to determine the main effect for occasion (pre/post), treatment

(experimental/control), and gender. The dependent variables included in the analysis were moderate physical activity (Question 9) and vigorous physical activity (Question 8, see Appendix B).

CHAPTER IV

RESULTS

As previously mentioned 333 total students participated in the study. 240 students were from the intervention school and 93 from the control school. The average age for all students was 14. For the intervention school, 48% were males and 52% were females. For the control school, 45% were males and 55% were females. All of the students participating in the study were Latino. The intervention school students spent an average of 3.23 days per week engaging in moderate physical activity at pre-test and 3.93 days per week at post-test. The control school students spent an average of 3.69 days per week engaging in moderate physical activity at pre-test and 4.20 days per week at post-test. The intervention school students spent an average of 3.73 days per week engaging in vigorous physical activity at pre-test and 4.46 days per week at post-test. The control school students spent an average of 4.30 days per week engaging in vigorous physical activity at pre-test and 4.53 days per week at post-test (see Table 2).

Table 2

*Demographics of Participating Students and
Averages for Moderate and Vigorous Physical Activity*

Variable	Intervention School	Control School
Age	14 (Mean)	14 (Mean)
Gender		
Males	124 (48%)	42 (45%)
Females	116 (52%)	51 (55%)
Ethnicity	Latino	Latino
Average Days/Week of Moderate Physical Activity		
Pre	3.23	3.69
Post	3.93	4.20
Average Days/Week of Vigorous Physical Activity		
Pre	3.73	4.30
Post	4.46	4.53

Moderate Physical Activity

For the question pertaining to moderate physical activity, the occasion effect was significant ($p < .001$), indicating that moderate physical activity increased from the pre-test to the post-test, across gender and treatment (Table 3). The mean for pre-test was 3.5 and for post-test was 4.1 ($p < .001$). There was no significant occasion by treatment interaction ($p < .543$) (Figure 1). The means for treatment school pre-test was 3.2 and post-test was 3.9 ($p < .543$). The means for control school pre-test was 3.7 and post-test was 4.2 ($p < .543$). There was no significant occasion by gender interaction ($p < .537$) and occasion by treatment by gender interaction ($p < .122$). There was no statistically significant difference between schools ($p < .093$) (Table 3). There was also no statistically significant difference between genders ($p < .256$), and no significant interaction between treatment and gender ($p < .251$). The observed powers for the tests associated with the treatment effect were very poor ($< .40$). The effect size from pre to post measurement was .31 for the treatment students and .18 for the control students.

Vigorous Physical Activity

For the question pertaining to vigorous physical activity, the occasion effect was significant ($p < .001$), indicating that vigorous physical activity increased from pre-test to post-test, across genders and treatment (Table 4). The means for pre-test was 4.0 and for post-test was 4.5 ($p < .001$). There was no significant occasion by treatment interaction ($p < .078$) (Figure 2). The means for treatment school pre-test was 3.7 and post-test was 4.6 ($p < .078$). The means for control school pre-test was 4.3 and post-test was 4.5 ($p < .078$). There was no significant occasion by gender interaction ($p < .889$) and occasion

by treatment by gender interaction ($p < .806$). There was also no statistically significant difference between schools ($p < .120$) (Table 4). There was a statistically significant difference between genders ($p < .047$), with males reporting higher vigorous physical activity than females (Figure 3). The mean for the males was 4.5 and for the females was 4.0. There was no statistically significant interaction between treatment and gender ($p < .467$). The observed powers for the tests associated with the treatment effect were very poor ($< .5$). The effect size from pre to post measurement was .30 for the treatment students and .09 for the control students.

CHAPTER V

DISCUSSION

The results indicate that 22% of the students reported being moderately physically active five or more days per week (Table 5). This finding is very consistent with the finding from the 2001 YRBSS, which states that 22% of Hispanic students report being moderately physically active five or more days per week. The results also indicate that 53% of the students reported being vigorously physically active three or more days per week. This percentage is less than the 2001 YRBSS results that state that 61% of Hispanic students report being vigorously physically active three or more days per week. For television watching, results indicated that 48% of the students reported watching television for 3 or more hours per day. This finding is similar to the finding from the 2001 YRBSS, which states that 48% of Hispanic students report watching television for 3 or more hours per day. This indicates that the students from the study appear to be consistent with the national population of Hispanic adolescents.

There was a significant increase in self-reported moderate and vigorous physical activity in all students from the pre-test to the post-test. The control school students on average spent more days engaging in moderate and vigorous physical activity at pre-test than the treatment school students (Figure 1 & 2). The increase in amount of days spent engaging in moderate and vigorous physical activity after the program was greater in the treatment school students than the control school students although it was not statistically

significant. The greater increase in moderate and vigorous physical activity in the treatment school students was known after calculating the effect size, which was approximately .31. This demonstrates that an average treatment school student increases from pre to post test their self-reported engagement in moderate and vigorous activity by a third of a standard deviation. The .31 effect size is considered a medium effect demonstrating that the program had a moderate effect on the students (Cohen, 1988). The observed powers for the tests associated with the treatment effect were very poor. This may be due to the measurement error associated with the self-report physical activity data or the relatively large error component in the ANOVA model. The effect sizes for moderate and vigorous physical activity indicate that the inability to reach statistical significance may be related to the lack of statistical power.

Although there seem to be a relationship between the program and a change in physical activity behaviors, no statistical significance or strong statistical power was demonstrated. Further studies can be conducted to take more accurate measures of how physically active the students really were. This study tested students with self-report questionnaires, which may have limited validity among the students and may not provide adequate description of the intensity and amount of time of physical activity. Future studies can be done to objectively measure physical activity levels in students such as accelerometers, pedometers, and electronic motion sensors (Trost et al., 2001). Additionally, various types of health-related physical fitness tests can be used to measure students' fitness levels and compare them to other students, such as the FITNESSGRAM (Cooper Institute for Aerobics Research, 2004), the President's Challenge (President's

Council on Physical Fitness and Sports, 1997). These tests use criterion-referenced standards, which may help explain a student's health status and disease risk (Chun, Corbin, & Pangrazi, 2000; humankinetics.com, 2004).

Results also demonstrate that there was a statistically significant difference between male and female students for vigorous physical activity. Males reported more vigorous physical activity than females. This finding is similar to other study results that report that male adolescents are typically more physically active than female adolescents (Sallis et al., 1996; Trost et al., 2001). Research suggests that this can explain why some interventions have significant effects on females only, since they have lower levels of physical activity at baseline (Sallis et al., 1997).

Limitations

Limitations to the research project may include the treatment effect being moderated by the lack of continuous intervention. Lessons may need to be focused and reinforced continuously throughout the school year rather than delivered within the general curriculum. The intervention was limited to the Career Connections/Health classes and the health club only and perhaps should have been incorporated in physical activity classes as in other programs such as the CATCH program (Heath & Coleman, 2003). The treatment effect may also have been affected because of the different approaches taken in implementing the lessons in the classrooms. Some classes required combining lessons, limiting the amount of classroom time for the lesson as compared to the classes that had the full class time for that lesson. The students from these classes may have obtained less information, limiting the knowledge gained from that particular

lesson topic and therefore affecting their behavior in that particular category. Also, not all 9 lessons topics were on physical activity, but also included nutrition and smoking. Career Connections/Health teacher acceptance and enthusiasm, or lack thereof, of the project may have affected how well the students accepted and observed the lessons. Teachers focus on district and state curriculum and prepare students for standardized exams, which may limit the amount of time spent on incorporating the intervention lessons. The effects from the program may also not represent whether the behaviors in the intervention group will be maintained over a long period of time.

CHAPTER VI

CONCLUSION

Results suggest some potential effect on student physical activity behaviors as a result of the intervention. The school-based intervention included many unique aspects including near-peer mentoring and the implementation of culturally appropriate materials.

It is important to implement programs that promote physical activity within the schools in order to help students become more active, improve their health behaviors, and help them live healthier lives. Schools play an important role in helping to meet the nation's objectives for increasing the amount of students who are physically active. By implementing good health behaviors in adolescents, they are more likely to adopt these behaviors and continue them into adulthood. It is also important to study and compare the different intervention approaches taken in programs to examine what is most effective in changing student's health behaviors in a positive way. Due to the increase of Latino students developing obesity related diseases and the lack of research within this population, it is important to conduct studies on program effectiveness among Latino students. Additionally, there is a great need for research examining the effectiveness of school-based interventions that teach culturally appropriate health lessons for promoting physical activity among Latino high school students. The results of this project can be observed to inform other researchers and program organizers of its effectiveness on health behaviors on the students and can be used for future program planning.

Table 3

ANOVA Results for Self-Reported Moderate Physical Activity:

Within-Group Effects

Source	F ^a	Significance	Observed Power
Occasion	14.27	.001	.97
Occasion*School	.37	.543	.09
Occasion*Gender	.38	.537	.10
Occasion*School* Gender	2.40	.122	.34

Between-Group Effects

Source	F ^a	Significance	Observed Power
School	2.84	.093	.39
Gender	1.30	.256	.21
School*Gender	1.32	.251	.21

a: df = 1, 324

Table 4

ANOVA Results for Self-Reported Vigorous Physical Activity:

Within Group Effects

Source	F ^a	Significance	Observed Power
Occasion	11.57	.001	.92
Occasion*School	3.13	.078	.42
Occasion*Gender	.02	.889	.05
Occasion*School* Gender	.06	.806	.06

Between Group Effects

Source	F ^a	Significance	Observed Power
School	2.46	.120	.34
Gender	3.97	.047	.51
School*Gender	.53	.467	.11

a: df = 1, 328

Table 5

Percent of Self-Reported Physical Activity Behaviors for Both Schools

Physical Activity Behaviors	Pre	Post	YBSS Results*
3 or more days of moderate physical activity	22	23	22
5 or more days of vigorous physical activity	53	68	61
3 or more hours per day of TV watching	48	47	48

* CDC, 2001

Figure 1

Moderate Physical Activity:

Occasion by Treatment Interaction

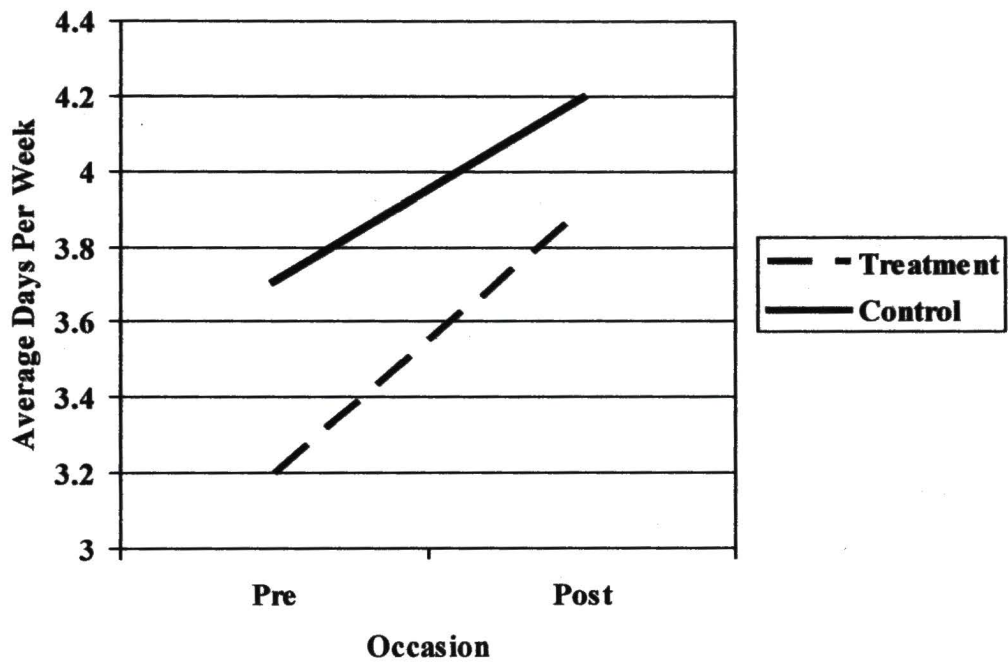
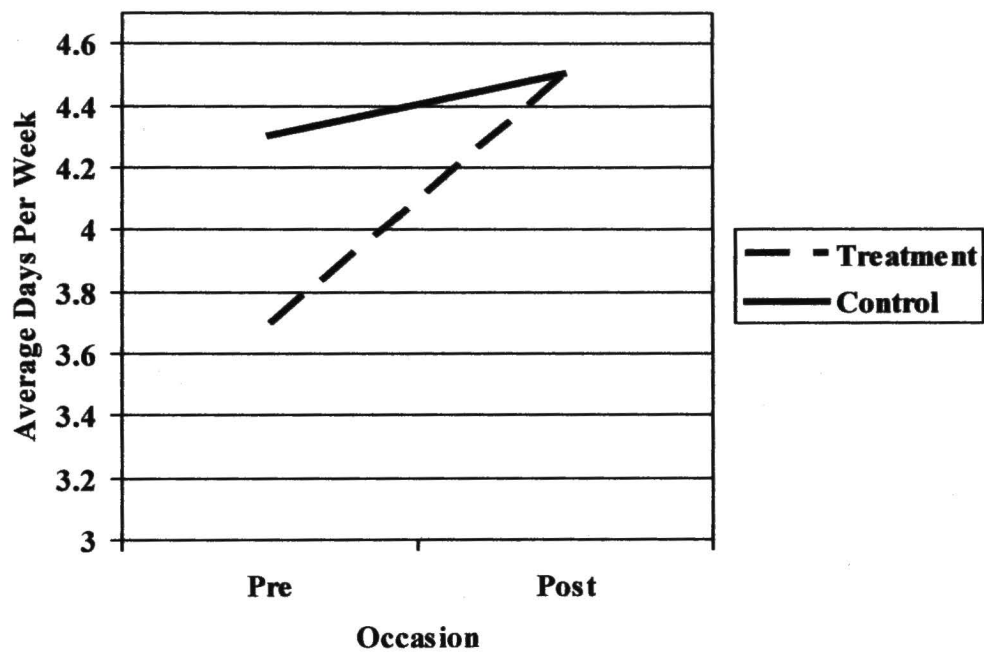


Figure 2

Vigorous Physical Activity:

Occasion by Treatment Interaction



APPENDIX A
PROJECT PATH
your **HEART**, your **LIFE**
A “PATH” to Your Future
HEALTH EDUCATOR’S MANUAL
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Lesson 7

Be More Physically Active

Objectives

By the end of this lesson students will learn that:

- Physical activity is good for the heart and overall health.
 - People should be physically active for a total of 30 minutes every day.
 - Brisk walking is a simple activity almost everyone can do.
 - There are ways to fit more activity into a busy schedule.
 - Identify the risk factors of not being physically active.
 - **Perspectives on Health:** Chapter 15
-

Applicable Sections of Texas Essential Knowledge and Skills (TEKS) for Health Education:

§115.32(b)(1)(A) relate the nation's health goals and objectives to individual, family, and community health;

§115.32(b)(1)(B) examine the relationship among body, composition, diet and fitness;

§115.32 (b)(6)(A) examine the effects of health behaviors on body systems

§115.32(b)(1)(I) describe the importance of taking responsibility for establishing and implementing health maintenance for individuals and family members of all ages;

§115.32(b)(4)(A) analyze the health messages delivered through media and technology;

§115.32(b)(5)(A) develop evaluation criteria for health information;

§115.32(b)(17)(B) demonstrate knowledge about personal and family health concerns.

§115.32(b)(16)(A) decision-making skills that promote health

Materials and Supplies

To conduct this session you will need:

- Your Heart, Your Life (PATH) manual and packet of picture cards
- Blackboard and chalk or several large pieces of paper, a marker, and tape
- Cool drinking water and cups
- (Optional) VCR and TV monitor
- (Optional) "La nueva maquina de la salud: Haga ejercicio" Telenovela or fotonovela in the guide *Mas Vale Prevenir Que Lamentar* (pages 12-13)
- (Optional) Music for walking activity and tape or compact disk player
- Calendar to keep up with workout dates
- Exercising supplies

Handouts for this lesson:

- Take Heart. Say Yes to Physical Activity
- Stretching Exercises

- **Make Physical Activity a Habit – My Personal Record**
- **Sample Walking Program**
- **Physical Activity & Heart Disease Quiz**
- **Student Lesson Evaluation Sheet**

Lesson Outline

Introducing the Lesson (1 min)

Conducting the Lesson

Facts About Physical Activity (2 min)

1. “La nueva maquina de la salud: Haga ejercicio” Telenovela or fotonovela in the guide *Más Vale Prevenir Que Lamentar* on pages 12 -13 (optional)
(5 min)
2. Benefits of Physical Activity (5 min)
3. Types of Physical Activity (10 min)
4. Getting Started: Important Things To Know (2 min)
5. Finding Time To Be Physically Active (3 min)
6. Walking: An activity for Almost Everyone (30 min)
 - A. Discussion
 - B. Walking Activity

Pledge (4 min)

Review of Today’s Key Points (5 min)

Closing (5 min)

Total estimated time for Lesson 3: 72 minutes.

Introducing the Lesson

- **Say:** Today's lesson discusses physical activity and how important it is to your heart's health. When the lesson ends, you will know:
 - How physical activity can help you and your family
 - What kind of activities are good for you and for your heart
 - How much activity you should do
 - How you can find time to be active

Conducting this Lesson

- **Facts About Physical Activity**
- **Say:** Not getting enough physical activity is a major health risk for people today. Being physically inactive puts you at risk for heart disease. The good news is that you can do something about this risk factor. Physical inactivity is rising among the United States population.
- **Show Vigorous Physical Activity and Watching Television graph picture card.**
- **Say:** At any age, having little or no physical activity can lead to health problems. Physical activity helps build and maintain strong bones, muscles, and joints. Physical activity helps control weight, builds lean muscles, and reduces fat. It also prevents or delays the development of

high blood pressure and helps reduce blood pressure in some adolescents with hypertension.

- **“La nueva maquina de salud: Haga ejercicio” (The New Health Machine)** (optional)
- **If you choose, show** the telenovela on physical activity, “La nueva maquina de la salud: Haga ejercicio,” (The New Health Machine) or have volunteers read the story in the guide *Mas Vale Prevenir Que Lamentar* (*An Ounce of Prevention*)

1. Benefits of Physical Activity

- **Ask:** How do you think physical activity can help you?
Note: Give the students about 5 minutes to answer. Write their answers on the blackboard or a large piece of paper taped to the wall
- **Show picture cards 2-1 and 2-2. Add any of the following reasons if they are not said.**
- **Say:** Physical Activity can:
 - Strengthen your heart and lungs
 - Help you feel better about yourself
 - Lower your stress
 - Help you sleep better
 - Give you more energy
 - Help lower your blood pressure
 - Help lower your blood cholesterol

- Help lower your chance for diabetes
- Help built and maintain strong bones, muscles, and joints
- Help control weight, built lean muscles, and reduces fat
- Prevent or delay the development of high blood pressure and help reduce blood pressure in some adolescents with hypertension
- Reduce the risk of dying prematurely
- Reduce the risk of dying from heart disease
- Reduce the risk of developing diabetes
- Reduce the risk of developing colon cancer
- Reduce feelings of depression and anxiety
- Promotes psychological well-being
- **Show picture card 2-3.**
- **Say:** People feel better when they are active. Physical activity may help you lose excess weight and control your appetite.
- **Types of Physical Activity**
- **Ask:** What do you do to be physically active?
- **Note:** Give the time to answer. Write their answers on the blackboard or a large piece of paper taped to the wall.
- **Say:** There are different types of physical activity. Physical activity includes some of the things that you probably do each day.
- **Show picture card 2-4.**
- **Say:** You may want to start with activities like these:

0 Vacuuming

- Walking
- Climbing stairs
- Jogging
- Dancing
- Bowling
- Hula-hoop contest
- **Show picture card 2-5.**
- **Say:** After a while, you will be able to do even more. Activities that you might enjoy include:
 - Playing soccer, basketball, baseball
 - Bicycling
 - Running or jogging
 - Doing aerobics or floor exercises (calisthenics)
 - Skating
 - Swimming
 - Jumping rope

- **Say:** All types of physical activity help the heart. Start slowly. Then move on to higher level activities. For example, when you are comfortable walking, gradually begin to jog and you'll feel great! You don't have to be an athlete to become fit. Just get moving! Find something you like to do and that you have time for.

- **Ask:** How much physical activity do you think you need each day to improve your health?

Answer: Both children and adults should be physically active for at least 30 minutes or more every day.

- **Show picture card 2-6.**

- **Say:** If you can't set aside 30 minutes at one time to be active, you can break your activity into shorter periods of 10 minutes or more. Just make sure it adds up to at least 30 minutes each day.

- **Say:** Here's an example:

- Walk to school..... +10
- Walk to class during school, go up and down stairs.+10
- Walk with family member or friend later in the day.....+10

2. **Getting Started: Important Things To Know**

Note: This lesson gives information for people who are just starting to be active. It also helps people add more activity to what they already do.

- **Say:** There are a few things that you and your parents should know before starting to be physically active.
- Most people do not need to see a doctor before they start a slow, sensible program of physical activity. You and your parents should talk to a doctor if you:
 - Have had heart trouble or a heart attack.
 - Take medicine for high blood pressure or a heart condition.
 - Are over 40 years old if you are a man, or over 50 if you are a woman, and you want to do a harder activity, like jogging?
 - Have more than one risk factor, like high blood pressure, high blood cholesterol, diabetes, overweight, or smoking.
 - Have a family history of heart disease at an early age (before the age of 45 for men and 55 for women).
 - **Say:** Start slowly. Build up the time and effort that you put into any activity. You should not be tired the next day.
 - Drink plenty of fluids before and after exercising, even if you are not thirsty. Drink water. Special sports drinks are not needed.

- Wear comfortable clothing. Wear shoes and socks that give your feet support. You do not need to buy fancy outfits.
- **Never** wrap your body in plastic or wear clothing that is too heavy.

This will not help you lose fat, but it can:

- Make you sweat too much
 - Make your body temperature rise
 - Make your heart beat too fast
 - Make you sick to your stomach
 - Cause you to pass out
 - Cause damage to your organs
- **Ask:** Does anyone have any questions? Give students time to ask questions.

3. Finding Time To Be Physically Active

- **Say:** Some of you may be wondering how you will ever find time to be active. Let's look at some ways.
- **Give each student** a copy of the "Take Heart. Say Yes to Physical Activity" handout. Let's see how to add movement to what you do every day. **(Read the suggestions aloud.)**
 - Take a walk
 - Get off the bus one or two stops early and walk
 - Use the stairs instead of the elevator or escalator
 - Dance to your favorite music

- **Ask:** What are some other ways to become more active even when you don't have time?
- **Note:** Write their answers on the blackboard or a large piece of paper taped to the wall. Add these ways if group members do not say them. to 20-minute walk during your meal break at work or at the end.
 - Take a 15-to 20- minute walk during your meal break at work or at the end of your work day.
 - Jump rope a few minutes each day. Work up to jumping for 10 minutes.

4. Walking: An Activity for Almost Everyone

Tips for Preparing for the Walking Activity

Before the start of this lesson: Review the "Stretching Exercises"

handout. Practice until you know each part well enough to teach them to the students.

Practice a brisk walk. Take long strides and swing your arms.

When leading this activity, remember:

Music can get students in the mood for being active. Use a lively song for the warm-up exercises, a faster beat for the walking, and a relaxing song for the cool-down period. (15 minutes total) Be enthusiastic. Students will pick up on your enthusiasm and feel good about exercising. Lead the walk in a circle if you have to do the walking indoors or if space is limited. It is important to have plenty of cool drinking water available before and after the activity.

5. Discussion

- **Say:** Brisk walking is an excellent form of physical activity. It's easy to do, and you do not need special equipment. All you need are shoes for support and socks for cushioning. Walking can be done outdoors or indoors. If you do not feel safe walking in your neighborhood, a school or churchyard may be a safer place to walk. Many shopping malls let people walk inside the mall before the stores open. Some malls even have walking clubs that meet every day. It's important to spend time warming up and cooling down each- time you exercise. Although the risk of injury from walking is low, the warm-up gets your leg muscles ready for the activity. The cool-down lets your heartbeat slowly return to normal. This keeps your leg muscles from getting stiff.
- Walking Activity
- **Ask the students** to stand up and spread out, leaving at least 3 feet between them and the next student.
- Turn on the music.
- **Say:** First, I am going to show you some stretching exercises. Watch me and then try doing them yourselves. Some are easier to do than others. With time and practice, you will be able to do them all. If you have a bit of trouble at first, just do your best. You will get a handout that tells you how to do these stretching exercises. Use the handout to help you do them at home.

- After the stretching exercises, **lead the students** on a 15- to 20-minute walk. Walk slowly for the first 5 minutes. Then show them how to do a brisk walk for 5-10 minutes.
- During the last 5 minutes, slow your pace.
- We are slowing down now so that our bodies can gradually relax. This is called the cool-down period. It is an important part. It's usually recommended that you gradually slow your pace during the last 5 minutes of an activity. Doing a few stretching exercises to loosen the muscles should also be a part of your cool-down. For instance, runners or joggers may cool down by walking for a few minutes and then stretching their leg muscles before they stop entirely.
- **Ask:** How do you feel? Do you think you could continue to walk like this? Why or Why not?

Note: Give students time to answer.
- **Review the Physical Activity & Heart Disease Handout with students.**
- **Say:** If you already walk three or more times a week, add other activities to become more fit. Try running, jumping rope, or doing aerobics. One of the hardest parts of being more active is staying motivated. Many people find that having a partner helps them stay active because:
 - You motivate each other. You can set goals together and help each other meet them.

- It makes the time go by faster. You will focus on talking rather than on the activity.
- A partner can be a family member, neighbor, or friend.
- **Ask:** What are other ways to help you stay motivated to continue being physically active? Where are some safe places in your neighborhood to be active?
- Note:** Give students time to answer. Write their answers on the blackboard or on a large piece of paper taped to the wall.
- **Give each student** a copy of the handouts "Stretching Exercises," "Make Physical Activity a Habit - My Personal Record," and the "Sample Walking Program".
- **Say:** Use the "Make Physical Activity a Habit - My Personal Record" handout to track your daily progress.

Review of Today's Key Points

- **Say:** Let's review what we have learned today.
- **Ask:** What are some of the benefits of regular physical activity?

Answer:

- Strengthen your heart and lungs
- Help you lose excess weight and control your appetite
- Lower blood cholesterol and blood pressure
- Help you sleep better, reduces stress, increases energy
- Lower your chance for diabetes

- **Q:** What is an activity that just about everyone can do?
- **A:** Brisk walking.
- **Q:** What are simple ways to become more active throughout the day?
- **A:**
 - Get off the bus early and walk
 - Park further away and walk
 - Use stairs instead of the elevator or escalator
 - Dance to your favorite music
- **Q:** What is the minimum amount of activity recommended for you to do every day?
- **A:** A total of 30 minutes



Pledge

- **Say:** Pledge one thing you will do to be more active during the coming week. Start by sharing your own pledge. You can write your pledges on the "Take Heart: Say Yes to Physical Activity" handout.

Note: Make sure each student gives details about what he or she plans to do. (For example, instead of saying "I am going to walk," have them say "I am going to walk three times a week for 30 minutes.")

Closing

- **Ask:** What did you think of today's session?
- Inform about Web Sites –
 - (<http://www.surgeongeneral.gov>)
 - (<http://www.teenhealth.org>)
 - (<http://www.kidnetic.com>)
- **Handout** Student Lesson Evaluation Sheet.
- Please complete the lesson evaluation and turn it in. (*Designate a place or container for the lesson critiques to be deposited so that anonymity can be maintained.*)

Teacher Lesson Critique (For program information)

- Complete the Teacher Lesson Critique Sheet to provide feedback to PATH Director/Personnel.

Take Heart. Say Yes to Physical Activity.

Regular physical activity can help your heart and lungs work better, lower your blood pressure and blood cholesterol, lower your blood sugar, and help you control your appetite and weight. What's more, it can help you relax and feel less tense and sleep better,

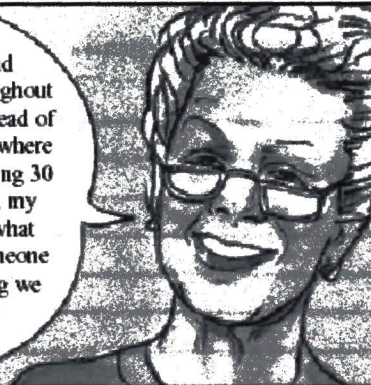
as well as feel more energetic and good about yourself.



Make staying active a lifelong habit.

Doña Fela has learned that the more physical activity you do, the easier it gets.

I do not wait until the end of the day. I am active throughout the day. I take the stairs instead of the elevators and walk everywhere I can. Now I am up to walking 30 minutes a day with Leticia, my neighbor. It helps to like what you do and to do it with someone else. We are so busy talking we walk even longer.



Keep moving. Start slowly and work your way up!

Strive to do 30 minutes of activity every day. If you're short on time, try three 10-minute periods.

A good place to start



- Use the stairs instead of the elevator.
- Get off the bus one or two stops early and walk.

Move to these activities

- Walk
- Rake leaves
- Dance
- Jump rope
- Garden
- Ride a stationary bike



Increase to this higher level



- Run
- Do aerobics
- Swim
- Do floor exercises or jumping jacks
- Play soccer
- Bicycle

Other things to do to help you and your family get started:

- Leave a pair of walking shoes in your car.
- Set a date and time with a coworker to begin walking.



Carmencita, Virginia, and Néstor have all increased their physical activity. They now dance and use their exercise machine almost every day. And Mariano also jogs in place each day.

Make your personal pledge to exercise like the Ramírez family does!

Look at these examples:

Morning

Park the car a few blocks away and walk for 10 minutes.

Noon

During lunch, walk with a friend for 10 minutes.

Evening

After dinner, ride a stationary bike for 10 minutes while watching television.

Write the changes you will try to make this week:

**Your health and your family's health is priceless.
Make an investment in it!**

Stretching Exercises

Do these stretches gently and slowly. Do not bounce.



1. Deep breathing

Arms up, breathe in, arms down, breathe out. Two times each.



2. Neck Stretching

Side to side, front to back. Two times in each direction.



3. Shoulder Stretches

Up and down five times on each side.



4. Side Stretches

Up and down five times in each direction.



5. Waist Stretches

Side to side three times in each direction.



6. Twists

Side to side three times in each direction.



7. Back and Leg Stretches

Down and up five times.



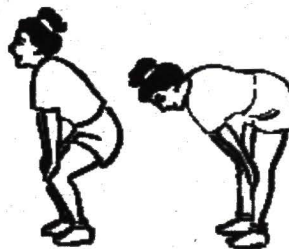
8. Back Stretch

Arms through legs six times.



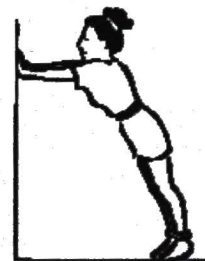
9. Leg Stretch (1)

Hold on to ankle, four times on each side.



10. Leg Stretch (2)

Down and up five times.



11. Leg Stretch (3)

Move heels up and down six times.

Developed by the California Diabetes Control Program, Department of Health Services, State of California.

Make Physical Activity a Habit

My Personal Record



Name _____

Track your progress every day.
Start out slowly.

Aim to reach 30 minutes or more a day!



Write in the log the number of minutes you are active each day:

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Example Week 1	5 min	5	10	10	15	15	15
Week 1							
Week 2							
Week 3							
Week 4							
Week 5							
Week 6							
Week 7							
Week 8							

Sample Walking Program



Warm Up



Walk



Cool Down



Total Time

Week 1*	Walk slowly 5 minutes	Walk briskly 5 minutes	Walk slowly 5 minutes	15 minutes
Week 2*	Walk slowly 5 minutes	Walk briskly 7 minutes	Walk slowly 5 minutes	17 minutes
Week 3*	Walk slowly 5 minutes	Walk briskly 9 minutes	Walk slowly 5 minutes	19 minutes
Week 4*	Walk slowly 5 minutes	Walk briskly 11 minutes	Walk slowly 5 minutes	21 minutes
Week 5*	Walk slowly 5 minutes	Walk briskly 13 minutes	Walk slowly 5 minutes	23 minutes
Week 6*	Walk slowly 5 minutes	Walk briskly 15 minutes	Walk slowly 5 minutes	25 minutes
Week 7*	Walk slowly 5 minutes	Walk briskly 18 minutes	Walk slowly 5 minutes	28 minutes
Week 8*	Walk slowly 5 minutes	Walk briskly 20 minutes	Walk slowly 5 minutes	30 minutes

*Do every day of the week

APPENDIX B
PARTIAL PROJECT PATH YRBSS QUESTIONNAIRE

Project PATH/Youth Risk Behavior Surveillance System

1. How old are you?

- A. 12 years old or younger
- B. 13 years old
- C. 14 years old
- D. 15 years old
- E. 16 years old
- F. 17 years old
- G. 18 years old or older

2. What is your gender?

- A. Female
- B. Male

3. In what grade are you?

- A. 9th grade
- B. 10th grade
- C. 11th grade
- D. 12th grade
- E. Ungraded or other grade

4. How do you describe yourself?

(Select one or more responses.)

- A. American Indian or Alaska Native
- B. Asian
- C. Black or African American
- D. Hispanic or Latino
- E. Native Hawaiian or Other Pacific Islander
- F. White

The next 7 questions ask about physical activity.

8. On how many of the past 7 days did you exercise or participate in physical activity for at least 20 minutes that made you sweat and breathe hard, such as basketball, soccer, running, swimming laps, fast bicycling, fast dancing, or similar aerobic activities?

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days
- E. 4 days
- F. 5 days
- G. 6 days
- H. 7 days

9. On how many of the past 7 days did you participate in physical activity for at least 30 minutes that did not make you sweat or breathe hard, such as fast walking, slow bicycling, skating, pushing a lawn mower, or mopping floors?

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days
- E. 4 days
- F. 5 days
- G. 6 days
- H. 7 days

10. On how many of the past 7 days did you do exercises to strengthen or tone your muscles, such as push-ups, sit-ups, or weight lifting?

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days
- E. 4 days
- F. 5 days
- G. 6 days
- H. 7 days

11. On an average school day, how many hours do you watch TV?

- A. I do not watch TV on an average school day
- B. Less than 1 hour per day
- C. 1 hour per day
- D. 2 hours per day
- E. 3 hours per day
- F. 4 hours per day
- G. 5 or more hours per day

12. In an average week when you are in school, on how many days do you go to physical education (PE) classes?

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days
- E. 4 days
- F. 5 days

13. During an average physical education (PE) class, how many minutes do you spend actually exercising or playing sports?

- A. I do not take PE

- B. Less than 10 minutes
- C. 10 to 20 minutes
- D. 21 to 30 minutes
- E. 31 to 40 minutes
- F. 41 to 50 minutes
- G. 51 to 60 minutes
- H. More than 60 minutes

14. During the past 12 months, on how many sports teams did you play?
(Include any teams run by your school or community groups.)

- A. 0 teams
- B. 1 team
- C. 2 teams
- D. 3 or more teams

The following three questions are from the ACTIVITYGRAM.

41. On how many of the past 7 days did you participate in physical activity for a total of 30-60 minutes, or more, over the course of a day? This includes moderate activities (walking, slow bicycling, or outdoor play) as well as vigorous activities (jogging, active games or active sports such as basketball, tennis or soccer).

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days
- E. 4 days
- F. 5 days
- G. 6 days
- H. 7 days

42. On how many of the past 7 days did you do exercises to strengthen or tone your muscles? This includes exercises such as push-ups, sit-ups or weight lifting.

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days
- E. 4 days
- F. 5 days
- G. 6 days
- H. 7 days

43. On how many of the past 7 days did you do stretching exercises to loosen up or relax your muscles? This includes exercises such as toe touches, knee bending, or leg stretching.

- A. 0 days
- B. 1 day
- C. 2 days
- D. 3 days

- E. 4 days
- F. 5 days
- G. 6 days
- H. 7 days

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