HEALTH ISSUES AND THE BENEFITS OF DANCESPORT

by

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ABSTRACT

This dissertation uses a quantitative research method to analyze health issues and the benefits students and teachers experience because of DanceSport. The dissertation topic is on Health Issues and the Benefits of DanceSport. The problem is that people are experiencing health issues. DanceSport exercise is fun and a remedy to prevent illnesses and diseases. Health issues include dementia, depression, strokes, obesity, osteoporosis, rheumatoid arthritis, diabetes, and others. This study analyzed the results of a survey of students and teachers using quantitative data. The theory of better health through ballroom dancing is a starting point for the study. The purpose of this quantitative study is to make a comparison between individuals who spend time taking ballroom dance instruction at the Arthur Murray ballroom dance school. The research method is a quantitative method and appropriate for the proposed study. This study included a cross-sectional survey design to collect data. The survey helped answer the research question in the study. This study could benefit people in society who are unaware of the importance of exercise to prevent illnesses and diseases. For the survey 100 students and 100 teachers were used from the Arthur Murray's ballroom dance schools. To study the hypothesis a sample was selected from the population. A theory in quantitative research explains and predicts the probable relationship between, for example, better health (dependent variable), and taking ballroom dancing (independent variable) (Creswell, 2005). Think of a theory as a bridge connecting the independent and dependent variables (Creswell, 2005). Historical and current findings indicated the many benefits experienced by ballroom dancers. The gaps in current and historical research literature

exists because studies do not address certain areas. The rationale for the research method and research design is discussed. The study confirmed that ballroom dancing is beneficial.

DEDICATION

For Jessica Theresa, my daughter, her baby Lily Marie, and family. For Bill and the fun years of dancing and our daughter, Jessica Theresa. For my mother, Maria Teresa, my father, Juan Angel, who is now with God in heaven. For my sister, Ivette, niece, Julia, nephew, Nicholas, and their dad Ray. For my brother, Alexander, his wife, Judy, nephew, Christopher, niece, Alexis, and all my loving family. For my daughter's godparents, Lino and Lillian Innocenzi Powers, of the Arthur Murray's organization. For Al Rinaldo, a good friend who encouraged me, and for all my dancing friends. To my family and friends, remember that "To stand upright and to walk is human; to dance is divine" (Kotzsch, 1991, p. 2). Love, health, happiness to all my friends, family, and God Bless.

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CHAPTER 1: INTRODUCTION

The current quantitative cross-sectional survey study included an evaluation of the measurable outcomes using student and teacher surveys to examine the effect that ballroom dancing has on health. The survey assessed the Arthur Murray's organization, students, and teachers with health issues. Ballroom dancing helps solve health issues facing people from all backgrounds and ages in the United States and worldwide (Jenkins, 2003; Keller, 2007; Kimmons, 2003; Matthew, 2001; O'Rourke & Sullivan, 2003; Zusman, 2007). Through research on this topic people are more aware of the importance of living a healthier lifestyle, and learned of the positive effects of exercising through ballroom dancing. Health issues exist in the U. S. and other countries, but by taking the time to exercise during a ballroom dance lesson makes the body and mind healthier.

Researchers explained that mental state affects every aspect of an individual's physical life, and depression increases the risk of cardiovascular disease, pain, and diabetes (Mathew, 2001; Podewils, Guallar, Kuller, Fried, Lopez, Carlson, & Lyketsos, 2005; Ward, 2008). Depression can result in a person not being able to leave the house, and this physical inactivity sets a person up for many physical problems affecting the later years (James, 2004; Mathew, 2001; Podewils et al., 2005; Ward, 2008). Lonely people who do not have social relationships are more likely to have depressions, heart disease, and can develop Alzheimer's disease (James, 2004; Mathew, 2001; Podewils et al., 2005; Ward, 2008; Women Living Well, 2008).

Chapter 1 will cover the problem statement, purpose, significance, nature of the study, hypothesis, research question, theoretical framework, definitions, assumptions,

scope, limitations, and delimitations. A specific problem is the increasing health issues facing people from all backgrounds and ages in the U.S. and worldwide. The quantitative comparative research study determined in a statistical comparison the differences between students and teachers. People experience health issues, but through fun ballroom dancing exercise people could remedy this problem.

Martin (2008) explained that people would run and spend time on the dance floors in times of the Depression and World War II as an outlet to help with feelings of depression, emotional, and mental problems. Pyrillis (2007) indicated that a dancer who is a psychiatrist and author began taking ballroom dance lessons, and two years later became a competitive ballroom dancer at the championships. The ballroom dancer and psychiatrist is a medical director for Medicare in several states with a demanding job (Pyrillis, 2007). For this doctor and dancer ballroom dancing is a time when a person can just let go, and is like taking a little vacation (Pyrillis, 2007).

Current theories and studies in general explain that better health is possible through ballroom dancing (Florindo, 2008; Hanna, 2006; Monti, 2008; Ward, 2008). According to studies ballroom dancing has a positive effect on people's health (Florindo, 2008; Hanna, 2006; Monti, 2008; Ward, 2008). Recent theories explain the positive relationships for the variables in this study. This study questioned who experiences better health through ballroom dancing. Better health through ballroom dancing results in students improving health, lowering stress levels, preventing illnesses and diseases, more energetic, increasing self-esteem, and are likely to be less lonely resulting in better health because of the socializing (Bender, 2008; Grumman, 1998; Koval, 2007; Martin, 2008; McDowell-Larsen, 2008; Monti, 2008; Ward, 2008).

Germinal and current theories relate to the problem statement, which is the health issues facing people in the U.S. that include life-threatening diseases and illness (Creamer, 2005; Heather, 2007; Jenkins, 2003; Lee, 2007; Tanas & Renzo, 2006; Verghese, 2006; Ward, 2008; Wilmoth & Stunkel, 1994). The summarized general theories will assist in understanding why people want to stay healthy and avoid an early death (Kenkel, 1991). Ballroom dancing has shifted from dance as recreation to a way of healing (Creamer, 2005; Hanna, 2006; Heather, 2007; Jenkins, 2003; Lee, 2007; Tanas & Renzo, 2006; Verghese, 2006; Ward, 2008; Wilmoth & Stunkel, 1994; Zusman, 2007). People affected with health issues have arthritis, diabetes, obesity, strokes, cancers, dementia, stress, depression, and many other illnesses and diseases (McDowell-Larsen, 2008; Monti, 2008; Podewils et al., 2005; Richardson, 2006; Ward, 2008). Studies indicate students can bring heart rates up with ballroom dances that include cha cha, polka, and swing (Medical Studies, 2005).

Because of gaps in knowledge more research can inform leaders in the dance industry on the topic of health issues and the benefits of DanceSport, for example, research using dance therapy in people with schizophrenia (Xia & Grant, 2009). This could result in people healing overtime. For people with cancers Johns Hopkins Hospital explains that deep breathing, and daily exercise is another way to destroy cancer cells (VanDenbossche, 1998; Ward, 2008). More research in the area of exercise using ballroom dancing, and oxygen therapy to prevent cancer would benefit many (VanDenbossche, 1998; Ward, 2008).

Researchers continue to discover the benefits of ballroom dancing on Alzheimer's, cancers and depression (Ward, 2008). Studies on the effects of ballroom dancing, and harmful outcomes that include cognitive decline, falling, and mobility would benefit seniors (Verghese, 2006). Jarrett (2008) indicated that dance is a good workout for the brain, and a study found that dance may reduce the risk of developing dementia by as much as 63%.

The gap in knowledge of the problem to leaders is significant because studies seem to lack data on certain diseases and illnesses, such as different types of depression, cancers, endometriosis, Lou Gehrig's disease, schizophrenia, and others (Koninckx, 1998; Walling, 1999; Ward, 2008; Xia & Grant, 2009). The understanding and increasing knowledge of these diseases and illnesses is crucial for people around the globe.

Leaders must be aware of the health problems facing people in the U.S. and other countries. Moore (2003) explained that in an attempt to compete in the global economy people prefer to consume lunch at a desk and alone. According to Lauer (2002), leaders should encourage employees to develop healthy habits, and this will cut down on company health care costs. Corporate fitness is good for the bottom line (Lauer, 2002).

The Association for Fitness in Business indicated that more than 700 organizations provide intensive wellness programs (Gettings & Maddox, 1988). Gettings and Maddox (1988) explained that wellness programs include health assessment, planning of exercise, counseling support groups, and workshops on topics, such as weight control, stress management, and smoking cessation. Today, health and wellness programs include classes at organizations, for example, Weight Watcher's meetings,

Zumba, massage therapy, and ballroom dancing (Hein, 2005; Moss, 2008). Health and wellness classes are onsite or offsite (Hein, 2005; Moss, 2008). Hein (2005) indicated that Glinka, a professional ballroom dance instructor has been working for 15 years, and helping with corporate programs. Incentive planners thought recruiting Glinka was a good idea for ballroom dance classes (Hein, 2005).

According to Keller (2007), physical inactivity accounted for an estimated $75 billion in medical costs in the U.S. Katz (2008) indicated that corporate wellness programs are appearing at organizations in the U.S., and leaders are looking for ways to keep health care costs down. Encouraging employees will lead to healthy behaviors (Katz, 2008). According to a survey conducted in 2008, 71% of organizations use incentives to promote health programs (Katz, 2008). The president and CEO of National Association of Manufacturers (NAM) notes that cash rewards motivate employees (Katz, 2008). Katz (2008) stated that employers are trying innovative ways of lowering costs and increasing productivity. Incentives encourage employees to participate in programs, and organizational leaders realize the greater return on investments (Katz, 2008). Katz (2008) indicated that employers are offering rewards for behaviors, such as participating, completing, enrolling, and achieving goals during a program. This includes maintaining outcomes after completing the program, leading groups of people to take part in a program, and recruiting people into a program.

Background

The research problem is of important social concern, and more research on health would be beneficial to people (Xia & Grant, 2009). Illnesses and diseases are preventable with proper eating habits and exercise through fun ballroom dancing. The

hypothesis in this study is that people will experience better health (dependent variable) through ballroom dancing (independent variable). Research found that Americans and people from other nations are becoming obese (Streib, 2007). In countries with a high percentage in which people are overweight, the U. S. was number nine with 74.1% of ages 15 and above overweight (Streib, 2007). People in the U. S. and other countries are increasingly becoming overweight because of little exercise, fast food choices, and stressful jobs (Streib, 2007).

Studies have confirmed that ballroom dancing offers many benefits for people with depression, heart problems, obesity, osteoporosis, rheumatoid arthritis, stress, ulcers, varicose veins, menopause, toxins in the body, Alzheimer's, emotional problems, circulatory problems, other illnesses, and diseases (Delaney & McVeigh, 1992; Fowler, 2005; Kimmons, 2003; Mathew, 2001; Palo-Bengtsson, Winblad, & Ekman, 1998; Sangiorgio, Gutfeld & Rao, 1992; Stark, 1998; Wilmoth & Stunkel, 1994). Wilmoth and Stunkel (1994) explained, "Besides exercising your heart and lungs, dancing helps you tone your muscles, and strengthens your calf muscles, thighs, and buttocks" (p. 1). Leaders in the dance industry can direct and inform ballroom dance instructors to plan better dance programs focusing on the student's health.

Martin (2008) indicated that historically in times of wars and crisis people head to the dance floor. The writers of Medical Studies (2005) explained that the famous Arthur and Kathryn Murray had a long life, living to be more than 90. Both Arthur and Kathryn were known to love dancing (Medical Studies, 2005). For a longer life include nutritious foods, supplements, and filtered water as well (New York Resolutions, 2006). Ballroom dancing has proven to be beneficial to many people. This study includes ballroom

dancers who dance socially, compete, teach, coach, and organize national, and world championships.

The research problem is of important social concern because people neglect eating and exercising properly (Johnson et al., 1956). Leaders of organizations should encourage employees to develop healthy habits to cut down on company's health care costs, and corporate fitness is good for the bottom line. Corporate health and wellness programs help reduce the cost of health care, and productivity in the workplace increases (O'Rourke & Sullivan, 2003).

Inactivity and health issues can lead to premature death in both women and men in the U.S. and other countries; more research needs to be done in this area (Jenkins, 2003; Johnson et al., 1956; Keller, 2007; Kenkel, 1991; Kimmons, 2003; Matthew, 2001; O'Rourke & Sullivan, 2003; Zusman, 2007). Health issues are increasing and affect people from all backgrounds and ages. Health issues are an ongoing concern for people in general. Studies have confirmed that ballroom dancing has health benefits. Hackney and Earhart (2009) explained that the basal ganglia could be activated during rhythmic, metered movement when dancing the tango.

In a study using participants with Parkinson's disease, a comparison was done on the effects of ballroom dances on functional motor control, and the dance group had the most improvement (Hackney & Earhart, 2009). Hackney and Earhart (2009) indicated that the conclusion of the study was that tango targets deficits related to Parkinson's more than dances like the waltz and foxtrot. Instead the waltz and foxtrot benefits people's balance and locomotion (Hackney & Earhart, 2009). Health issues improve with a

change of lifestyle. A person does not want to live with an illness or disease, but this problem is ongoing.

The increasing health issues facing people include diseases and illnesses, such as dementia, depression, obesity, osteoporosis, rheumatoid arthritis, and diabetes can shorten a person's life (Verghese, 2006; Ward, 2008). Sangiorgio et al. (1992) explained, "Fast paced ballroom dancing works the heart and cardio respiratory system much the same way jogging does" (p. 1). According to a study, music, socializing, and the stress-relieving aspects of ballroom dancing give inactive people incentive to dance (Monti, 2008).

A study did a comparison of two groups of high school girls with 28 obese and 28 non-obese of similar height, age, and grade (Johnson, Burke, & Mayer, 1956). The study confirmed that the caloric intake of an obese group was lower than that of the non-obese group, and that inactivity causes obesity (Johnson et al., 1956). Ballroom dancing does wonders for body and spirit. Ballroom dance schools include franchises, such as Fred Astaire's, Arthur Murray's, and independent ballroom dance schools (Let's Dance, 2004). This investigation determined if ballroom dancing promoted better health.

Problem Statement

According to Kenkel (1991), a report of the U.S. surgeon general in 1976 concluded that 50% of mortality was people's unhealthy behaviors or lifestyles. The general problem is the health issues facing people in the U.S. that include diseases and illness, such as dementia, depression, obesity, osteoporosis, arthritis, and diabetes (Creamer, 2005; Heather, 2007; Jenkins, 2003; Lee, 2007; Tanas & Renzo, 2006;

Verghese, 2006; Ward, 2008; Wilmoth & Stunkel, 1994). Theories of why people exercise is to improve health, and prevent deadly illnesses and diseases, yet health issues in the U.S. continue to escalate significantly (Heather, 2007; Lee, 2007; Tanas & Renzo, 2006; Verghese, 2006; Ward, 2008). This study may help prevent health problems, and increase awareness of exercise through fun ballroom dancing which benefits mind and body (Bender, 2008; Heather, 2007; Lee, 2007; Tanas & Renzo, 2006; Verghese, 2006; Ward, 2008).

In this study, the research method and design was a quantitative comparative study. In this quantitative study a comparison of teachers and students of the Arthur Murray's organization was based on who experienced better health (dependent variable) through ballroom dancing (independent variable). For this study, the cross-sectional survey helped provide answers by using data to support or reject the theory. Collecting quantitative data using a questionnaire during the survey made it possible to analyze data. This quantitative study revealed the opinions and experiences of ballroom dancers through a questionnaire, and investigated the effects of ballroom dancing on a diverse group of students and teachers. The survey can determine whether exercise through ballroom dancing has a positive effect on health. The survey instrument used demographic and closed-ended questions and helped in understanding the problem affecting the population of teachers and students over the age of 18 at an organization known as Arthur Murray's located in the U.S. and worldwide. The study design was comparative and researchers can examine patterns of similarities and differences across cases (Neuman, 2003). The strength of comparative research is that it can raise new questions, and stimulates theory building (Neuman, 2003).

Health issues continue to have an effect on organizations in the U.S. and worldwide, and leaders of organizations would be wise to implement strategies that promote health in the workplace. The results from the current empirical study might assist Arthur Murray's organizational leaders. This framework will seek to determine best practices that leaders of organizations can implement to prevent health issues by educating people of the benefits of ballroom dance exercise.

Purpose Statement

The purpose of the current quantitative comparative research study was to determine through statistical comparison any significant differences among students and teachers who experience better health by taking ballroom dancing (Pyrillis, 2007; Verghese, 2006; Zusman, 2007). This study used six pilot study participants, and the main study included 100 students and 100 teachers from the Arthur Murray's organization using closed-ended questions and a Likert-type scale. Ballroom dancing has many benefits for students on programs that include building self-esteem, improving social life, and health through fun exercise (Koval, 2007; Monti, 2008; Stahl, 2008). The study might provide leaders of the Arthur Murray's organizations with effective ways of planning dance programs focusing on achieving better health.

The target population consists of teachers and students from the Arthur Murray's Ballroom Dance Schools in the U.S. Data collected did serve to measure teachers and students who experienced better health by taking ballroom dancing. In this study the dependent variable is better health, and the independent variable is taking ballroom dancing.

The study involved empirically measuring personal experiences of better health as a direct result of ballroom dance exercise in a comparison of teachers and students. According to Theiss (1989) and Spilner (1991), ballroom dancing offers a gentle, aerobic workout and is an activity that improves physical fitness, emotional health, and social well-being. The results of the quantitative comparative study might also increase the awareness of preventable illnesses and diseases through ballroom dance exercise, and enhance teaching methods designed to meet student needs.

Significance of the Study

With an increasing number of health issues in the U.S, organizations need a better understanding of how to manage illnesses and diseases. An understanding of these health issues is relevant to current and future generations because it can help lower mortality rates by increasing awareness of the disease-preventing qualities of physical activity (Kenkel, 1991; VanDenbossche, 1998). Health risks associated for people who are overweight are cardiovascular disease, diabetes, hypertension, and strokes (Streib, 2007). The World Health Organization's data found that in the U.S., two-thirds of adults are overweight and one-third obese (Weight Control Information, 2007). Health risks, mortality rates, and economic costs are associated to these health issues (Weight Control Information, 2007). According to Rassenti (2007) and Souccar (2007), taking ballroom dance lessons could result in a long, happy, and healthy life.

Because of the need to stay competitive in the global economy organizational leaders should encourage employees to develop healthy habits that cut down on company health care costs (Lauer, 2002; Moore, 2008). This study is important to the field of

leadership because leaders can collaborate to help prevent illnesses and diseases by rewarding healthy behaviors within the organization. To prevent health problems within organizations leaders can plan health promotion programs that result in lower health insurance premiums, reduce absenteeism and turnover, increase employee performance and productivity, improve employee morale, and enhance company image (Sherman, 1990). Sherman (1990) indicated that employees who participate in organizational health and wellness programs, such as aerobics classes, yoga, or ballroom dance classes can relieve physical and emotional problems that results in better job performance. Leaders who keep employees best interests in mind, cut down on the company's health care costs (Clark, 2008; Lauer, 2002; O'Rourke & Sullivan, 2003).

Nature of the Study

The current study involved a quantitative comparative study design. This study included an evaluation of the measurable outcomes using student and teacher surveys to examine the impact that ballroom dancing has on health. The survey helped assess the Arthur Murray organization, students, and teachers with health problems. The study involved an investigation comparing students and teachers who experienced better health (dependent variable) through ballroom dancing (independent variable). A compatible research design supported the nature of this study.

A quantitative research methodology was appropriate rather than a qualitative or mixed method because the study required an inquiry approach to examine and make a comparison between students and teachers of the Arthur Murray organization. According to researchers studies have confirmed the benefits of ballroom dancing, such as good

exercise, builds confidence level, gives mental clarity, reduces stress, and less risk of injuries (Jarrett, 2008; Monti, 2008; Stahl, 2008; Verghese, 2006). The qualitative method involves interviews, and obtaining narratives of personal experiences using a smaller sample (Creswell, 2005). In qualitative research it would be common to study a few individuals or a few cases (Creswell, 2005). The main study used inferential analysis to include hypothesis testing, and the statistical test was a *t*-test to compare groups (The T-Test, n.d.). The *t*-test is an appropriate analysis to help compare the means of two groups, and assess if the means of two groups are statistically different (The T-Test, n.d).

The intent for the current study is to compare students and teachers who use ballroom dancing for the purpose of improving health. The focus in the dance community has shifted from dance as recreation to healing people (Hanna, 2006). Creating corporate cultures that value exercise and foster fitness is acceptable (McDowell-Larsen, 2008). Yet, the challenge across the U.S. remains the same with escalating mortality rates because of illnesses and diseases (Creamer, 2005; Heather, 2007; Jenkins, 2003; Kenkel, 1991; Lee, 2007; Tanas & Renzo, 2006; Verghese, 2006; Ward, 2008; Wilmoth & Stunkel, 1994). Hall (2008) indicated that if the current health trends in the U.S. population continue, health problems will increase. This study might provide leaders of organizations, such as Arthur Murray's the knowledge to implement effective ways of achieving better health through health programs that include ballroom dancing (Moss, 2008). According to Clark (2008), the cost of health care in the U.S. doubled because of health costs, and because of this rise in health care organizational leaders should invest in and think creatively about wellness offerings. Organizations are starting to understand the benefits of incorporating ballroom dancing in health and

wellness programs (Moss, 2008). Two studies confirmed that ballroom dancing works, for example, the heart and cardio respiratory system, and an effective therapeutic activity (Monti, 2008; Sangiorgio et al., 1992).

The dependent variable investigated in the study was better health experienced by students and teachers as a result of taking ballroom dancing to exercise. According to O'Rourke and Sullivan (2003), Americans make unhealthy lifestyle choices resulting in illness or deaths. Many Americans continue to abuse tobacco and alcohol, and the financial impact of this unhealthy lifestyle is enormous (O'Rourke & Sullivan, 2003). The problem of obesity costs American businesses $12 billion a year from higher health care, lower productivity, and an increase in absenteeism (O'Rourke & Sullivan, 2003). This study involved an investigation on the impact of ballroom dancing on health issues.

The independent variable is taking ballroom dancing as exercise that provides many health benefits (Bender, 2008; Heather, 2007; Lee, 2007; Tanas & Renzo, 2006; Verghese, 2006; Ward, 2008). The surgeon general reported that less than one third of adults get the amount of physical exercise needed while 40 percent are not active at all (O'Rourke & Sullivan, 2003). According to Keller (2007), physical inactivity accounted for an estimated $75 billion in medical costs in the U.S. This money is being spent on conditions that can be prevented, and the problem could be solved by corporate wellness programs (O'Rourke & Sullivan, 2003). The goal of the study is to investigate the impact of taking ballroom dancing as exercise.

The quantitative comparative research study determined in a statistical comparison the differences between students and teachers and the health benefits of

ballroom dance exercise. The selected method is appropriate because the problem was addressed by presenting evidence from participant's surveys carefully analyzed in a logical style (Creswell, 2005; Neuman, 2003). The comparative study design is useful because quantitative researchers can examine similarities and differences among cases with the emphasis on explaining the covariation of one variable with another (Neuman, 2003). The current study involved a comparison between the independent variable (taking ballroom dancing) and the dependent variable (better health). An assessment of the measurable outcomes using surveys involved an examination of students and teachers with health issues as a supportive component to help lower mortality rates in organizations across the U.S.

A cross-sectional survey design was ideal for this study because researchers collect data at one point, and measure current attitudes or practices (Creswell, 2005). The assessment of students and teachers who experience better health, the dependent variable, involved using a questionnaire to gather data. The population consisted of students and teachers from the Arthur Murray's ballroom dance schools in the U.S. The collection of data was from a pilot study of a small sample group consisting of six participants using an online survey tool. E-mail invitations were sent to participants with a link to the online survey. The collection of data for the main study was from a sample of students and teachers using an online survey tool with questions derived from the pilot study results. This sample group consisted of a national sample of 100 students and 100 teachers over the age of 18. The use of the surveys served to make a comparison between students and teachers who experience better health as a result of taking ballroom dancing.

Chapter 4 presents the results of the research study in the form of tables. After collecting data using the 5-point Likert-type scale and 10 closed-ended questions the data was summarized in tables (Sargent et al., 2006). Findings of the quantitative comparative study between students and teachers were analyzed, evaluated, and organized. The descriptive and inferential statistical analysis was presented in detail (Creswell, 2005).

Research Question

The following is the research question for the study:

How do dance students differ from dance teachers in terms of better health?

Creswell (2005) explained that, "in quantitative research, the questions relate attributes and characteristics of individuals or organizations" (p. 117). These are known as variables (Creswell, 2005). The dependent variables are found in the survey instrument. Three popular forms of questions in quantitative research are: descriptive, relationship, and comparison questions (Creswell, 2005). Research questions describe participant's reactions to a variable, compare groups, or relate variables (Creswell, 2005). In this study, the research question helped to learn more about how students and teachers on better health (dependent variable) compare in terms of taking ballroom dancing (independent variable). Researchers should ask, "What is the outcome of this study" (Creswell, 2005, p. 121). The outcomes in the study are explained, and this would be the dependent variables (Creswell, 2005). A dependent variable is an attribute or characteristic dependent on or influenced by the independent variable (Creswell, 2005). The research questions should be open-ended questions.

Hypothesis

Creswell (2005) explained that, "Hypothesis are statements in quantitative research in which the investigator makes a prediction or a conjecture about the outcome of a relationship among attributes or characteristics" (p. 117). These are like research questions narrowing the purpose statement to specific predictions, and the predictions are not just educated guesses. Instead researchers base them on results from past research and literature in which investigators have found certain results, and can offer predictions about what other investigators will find when repeating the study with new people or at new sites (Creswell, 2005).

According to Creswell (2005), writing a quantitative hypothesis is similar to research questions, and it narrows the purpose statement in quantitative research, but the hypothesis advances a prediction about what researchers expect to find. Creswell (2005) indicated that researchers narrow the focus of the study to one or more hypothesis providing a prediction about the outcome of the study. Cooper and Schindler (2003) indicated that in research the role of the hypothesis has several important functions. It guides the study in the right direction; identifies facts considered relevant; suggests the appropriate form of research design; and provides a framework for organizing the conclusions that result.

Creswell (2005) explained that the most traditional form of writing a hypothesis would be the null hypothesis. Null hypothesis make predictions that of all possible people who researchers may decide to study, called the general population, no relationship exists between independent and dependent variables or no difference

between groups of an independent variable on a dependent variable. The hypothesis in this study required selecting a sample for the population. The following are the hypothesis:

1. Hypothesis H_0: There is no statistically significant difference in terms of the organization's treatment towards better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of the organization's treatment towards better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers.

2. Hypothesis H_0: There is no statistically difference in terms of overall better health (dependent variable) through ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of overall better health (dependent variable) through ballroom dancing (independent variable) for students and teachers.

3. Hypothesis H_0: There is no statistically significant difference in terms of performance capacity for better health (dependent variable) through ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of performance capacity for better health (dependent variable) through ballroom dancing (independent variable) for students and teachers.

4. Hypothesis H_0: There is no statistically significant difference in terms of being diagnosed with better health (dependent variable) while taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of being diagnosed with better health (dependent variable) while taking ballroom dancing (independent variable) for students and teachers.

5. Hypothesis H_0: There is no statistically significant difference in terms of feeling better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of feeling better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers.

6. Hypothesis H_0: There is no statistically significant difference in terms of DanceSport Membership toward better health (dependent variable) by doing ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of DanceSport Membership toward better health (dependent variable) by doing ballroom dancing (independent variable) for students and teachers.

7. Hypothesis H_0: There is no statistically significant difference in terms of a gender's better health (dependent variable) by taking ballroom dancing (independent variable) for students and teachers.

Hypothesis H_A: There is a statistically significant difference in terms of a gender's better health (dependent variable) by taking ballroom dancing (independent variable) for students and teachers.

8. Hypothesis H_0: There is no statistically significant difference in terms of better health (dependent variable) during employment status when taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of better health (dependent variable) during employment status when taking ballroom dancing (independent variable) for students and teachers.

9. Hypothesis H_0: There is no statistically significant difference in terms of better health (dependent variable) during marital status when taking ballroom dancing (independent variable) for students and teachers

   Hypothesis H_A: There is a statistically significant difference in terms of better health (dependent variable) during marital status when taking ballroom dancing (independent variable) for students and teachers.

10. Hypothesis H_0: There is no statistically significant difference in terms of better health (dependent variable) in an age group when taking ballroom dancing (independent variable) for students and teachers.

    Hypothesis H_A: There is a statistically significant difference in terms of better health (dependent variable) in an age group when taking ballroom dancing (independent variable) for students and teachers.

Theoretical Framework

The goal of the current quantitative research study is to broaden understanding of health issues and the benefits of taking ballroom dancing by comparing teachers and students. This collection of interrelated concepts will guide the research study. The summarized general theories helped to understand why people want to stay healthy and avoid becoming a statistic (Kenkel, 1991). The problem under study are the health issues facing people in the U.S., and to remedy this problem people are shifting from dance as recreation to a way of healing to improve life expectancy (Creamer, 2005; Hanna, 2006; Heather, 2007; Jenkins, 2003; Lee, 2007; Tanas & Renzo, 2006; Verghese, 2006; Ward, 2008; Wilmoth & Stunkel, 1994; Zusman, 2007). The theories explained why the problem under study exists, and served as a basis for conducting the quantitative comparative research study. The purpose of this general framework is to clearly identify the variables of the study, and to assist in the data analysis.

The research study falls under the broad theoretical area of health and ballroom dancing. Handling health issues through ballroom dancing has now become a way to deal with life threatening illnesses and diseases because it prevents and heals (Ward, 2008). Health issues are on the rise in the U.S., and theories suggest that health problems, such as arthritis and cancer can be prevented through ballroom dancing (Delany & McVeight, 1992; VanDenbossche, 1998).

New results from this study could affect major current theories related to the problem statement topic in that the new results could cause more studies to further research, and question how ballroom dancing can help with other illnesses and diseases.

This research fits other research in the field because it added to existing knowledge about illnesses and diseases that can be prevented through ballroom dance which is used for healing. Here is a summary of competing theories, concepts, and the theoretical relationship among the study variables.

Historical, germinal, and current theories that explain the reasons why people do physical activity, such as ballroom dancing suggests that people want to improve health and avoid health problems. Ballroom dancing can improve health problems and help people avoid premature death because of the disease-preventing qualities, it can boost the cardiovascular system, triggers improved brain functioning, helps arthritis, cleanses toxins from the body, and allows socializing (Coeyman, 1998; Delany & McVeigh, 1992; Kearns, 1997; Krucoff, 1992; Matthew, 2001; VanDenbossche, 1998). The problem of health that leads to death includes circulatory problems, dementia, obesity, diabetes, strokes, cancer, ulcers, depression, and stress (O'Rourke & Sullivan, 2003; Palo-Bengtsson et al., 1998; VanDenbossche, 1998). Some theories explain that the reason why people do ballroom dancing is that it protects against the risk of Alzheimer's disease, improves back pain, reduces the risk of cancer, relieves pain from arthritis, relieves dysmenorrhea, improves cardiovascular fitness, helps with obesity, helps with Parkinson's disease, heals war veterans of post-traumatic stress disorder, and many more reasons (Florindo, 2008; Hanna, 2006; Podewils et al., 2005; Shaw, 2008; Verghese, 2006; Ward, 2008).

Theories continue to evolve about ballroom dancing and why people enjoy it. In the historical theories of French ballroom dances of the17th century the explanation about

why people did social dances in couples was for recreational and social purposes (Coeyman, 1998). The royal family, spectators, and the participants of dancing would have an opportunity to gather, socialize, and have fun (Coeyman, 1998). Social dance was both a participatory and spectator activity (Coeyman, 1998). Social dancing was for spectators and couples willing to participate in the fun (Coeyman, 1998). In the 1600s, ballroom dancing would allow people to hold hands and interact (Coeyman, 1998).

The writers at The History (n.d.) indicated that the historical theories that explain the reason for social couple dancing is that for centuries people have danced for recreational purposes. Historically ballroom dancing is referring to any type of formal social dancing (The History, n.d.). In the past centuries, ballroom dances were done for the purpose of celebration (The History, n.d.). This explanation suggests that ballroom dancing in the past centuries was done for the purpose of fun and socializing (The History, n.d.).

In a historical theory the explanation about why people centuries ago would do social dances was to socialize and for men to go to war happy (McKay, n.d.). The word "ballroom," in simple theory signifies a place where balls would be held (McKay, n.d.). The English language adopted this term from the Latin word "ballare" which means "to dance" (McKay, n.d.). According to McKay (n.d.), historically ballrooms were a source of entertainment before the Internet or television. Couples would congregate at the ballrooms to socialize and dance with other couples (McKay, n.d.). Many different dances and versions of ballroom dancing would involve a man and a woman (McKay, n.d.). McKay (n.d.) explained that sometimes the happy couples dance apart, but

eventually reunite. Ballroom dancing was developed in Western Europe in the early 1600s. Dances were usually held the night before men had to go to war, and this was done as a way for men to go to war happy (McKay, n.d.).

A historical theory about why couples enjoyed ballroom dancing was because it allowed couples to hold in a close position in times when it was improper. The writers at Blackpool Tower (n.d.) indicated that the introduction of the Viennese waltz was in 1812 in which couples would dance with intertwining arms, and at the time it was shocking for people to see couples dancing in a close hold position. The waltz became very popular, and is the longest surviving dance (Blackpool Towel, n.d.). In 1844, Paris introduces the polka, a Czech dance with hops and steps (Blackpool Tower, n.d.). During the 20th century the introduction of new dances from the Americas brought excitement, and one dance was the tango. A dancer from Argentina introduced the tango to London in 1912 (Blackpool Tower, n.d.). In 1914, the foxtrot originally a trotting dance with kicks and hops was made smoother by a dance teacher from England with a slow-quick-quick rhythm in which couples hold in a close position (Blackpool Tower, n.d.).

Germinal research and theories of why people do ballroom dancing is that health benefits exist, and it helps people with arthritis, cancer, circulation, dementia, and others (Delany & McVeight, 1992; Johnson, Burke, & Mayer; Matthew, 2001; Palo-Bengtsson et al., 1998; VanDenbosshe, 1998). A germinal theory to explain why people do ballroom dancing is that health improves, for example, ballroom dancing is good for the heart, and will boost stamina levels. According to Theiss (1989), ballroom dancing is recreation and exercise for some people. Couples do dances like rumba or tango on the

dance floor, and this would be like people going to a health club (Theiss, 1989). These people are active and concerned with staying in shape (Theiss, 1989). Theiss (1989) explained that ballroom dancing raises heart rate up to 79% of its maximum rate, and athletes do ballroom dancing to boost stamina levels.

The germinal theory of why people participate in ballroom dancing is that people experience heart benefits. Krucoff (1992) explained that in a study people who dance anywhere from 20 minutes to one hour, about three to five times weekly, meet the American College of Sports Medicine's guidelines for aerobic fitness. According to Krucoff (1992), studies confirmed that ballroom dancing much like jogging and biking can boost the cardiovascular system leading to better health, and this fits the theory in this study.

Other germinal theories are that ballroom dancing is good for rehabilitation after heart surgery (Social Dancing, 1994). Sufficient physical activity such as ballroom dancing can help people with heart disease (Matthew, 2001). Kearns (1997) indicated that breakthrough research reveals that the best way to improve health is to do ballroom dancing. Kearns (1997) thinks that for cardiovascular conditioning and better health people should try ballroom dances, such as swing, and Latin dances like mambo and cha cha (Kearns, 1997).

Another germinal theory that explains the reason for country-western dancing is that people have fun, develop good posture, and prevents back pain (Spilner, 1993). Spilner (1993) has observed that much like ballroom dancing, country-western dancing includes waltzes, polkas, jitterbugs, line dancing, Texas two-step, and cha-chas (Spilner,

1993). Country-western transcends culture and status, and people are not wondering what other people do for a living (Spilner, 1993). The main thing is to have fun on the dance floor (Spilner, 1993). Spilner (1993) indicated that dancers should stand tall, and include good posture. Practicing good posture while doing country-western dances can eliminate back pain (Spilner, 1993).

Early stages of research and literature explained that choosing the right physical activity will determine if a person will be active for life (VanDenbossche, 1998). VanDenbossche (1998) explained the theory of why people do physical activity like ballroom dancing. The reason people do ballroom dancing is that it prevents diseases (VanDenbossche, 1998). Good physical activity includes ballroom dancing, and scientific studies confirmed that some form of physical activity will prevent diseases (VanDenbossche, 1998).

According to VanDenbossche (1998), in a study published in the Journal of the American Medical Association, inactive women are twice as likely to die prematurely in comparison to active women. In the same study, less active men had a greater chance of premature death in comparison to men who were active (VanDenbossche, 1998). Aerobic exercises works the muscles while elevating heart rate and is recommended for improving the cardiovascular system. Aerobic exercises include walking, bicycling, swimming, and ballroom dancing (VanDenbossche, 1998). Aerobic exercise detoxifies the body, reduces fat, and builds self-esteem (VanDenbossche, 1998).

Germinal theories about ballroom dancing continue to evolve, for example, one theory is about why ballroom dancing changed in England and Japan (Karatsu, 2003).

The explanation in this theory is that England's working class was responsible for indigenizing and changing ballroom dancing (Karatsu, 2003). In the country of Japan via England, the middle-class have adapted and semi-Japanized ballroom dancing (Karatsu, 2003). McKay (n.d.) explained that many different dances and versions of ballroom dancing exist. Ballroom dancing continues to evolve and learning ballroom dancing is good for the mind (Creamer, 2005).

Current theories continue to evolve and investigate illnesses and diseases that include Parkinson's, schizophrenia, cancers, and others (Florindo, 2008; Ward, 2008; Xia & Grant, 2009; Zusman, 2007). Current literature in the field suggests that ballroom dancing is therapeutic (Pyrillis, 2007). A theory about why people do ballroom dancing is that people can let go and get away. A psychiatrist and author who enjoys taking ballroom dancing does it because the job is relentless, and taking ballroom dancing is a time when letting go is possible (Pyrillis, 2007). Pyrillis (2007) explained that the dancer and psychiatrist thinks ballroom dancing is very physical, and like taking a vacation.

According to Ravelin, Kylma, and Korhonen (2006), the aim of the concept analysis is for the purpose of describing the defining attributes and consequences of the concept of dance in a mental health nursing context by using the hybrid concept analysis model. The concept of dance has been used in nursing, but has never been systematically analyzed (Ravelin et al., 2006). In comparison to other concept analysis models, the feature that makes the hybrid model unique is the field work phase. Ravelin et al. (2006) indicated that field work makes it possible to gain knowledge of the concept from mental health practice. The hybrid model has three phases that includes the theoretical phase

(Ravelin et al., 2006). Ravelin et al. (2006) explained that literature on the topic is used as data in the theoretical phase. This phase focuses on identifying the essential elements of the concept, and the development of an initial working definition (Ravelin et al., 2006). The concept is refined during the field work phase by the collection of data and analyzing empirical data (Ravelin et al., 2006). In the analytical phase the concept is defined by combining results from the theoretical and field work phases (Ravelin et al., 2006). In the theoretical phase of the hybrid model data was collected using databases (Ravelin et al., 2006).

Ravelin et al. (2006) explained that in the field work phase of the hybrid model data was collected from an outpatient unit for mental health patients. Participants were two clients, two nurses, and one psychologist (Ravelin et al., 2006). All the participants were familiar with dance intervention and were all in a therapeutic dance group in the mental health unit (Ravelin et al., 2006). A focus group interview method was used that would involve group interaction during the interview, and this would help enrich dance descriptions (Ravelin et al., 2006). The goal was to refresh these participants' memories and experiences of dance (Ravelin et al., 2006). Participants were asked to describe dance, and what kind of effects dance might have (Ravelin et al., 2006). The analytical phase would examine the data from both the theoretical and field work phases (Ravelin et al., 2006).

According to Ravelin et al. (2006), dance is seen as beneficial, and "a strong and holistic nursing intervention that may have remarkable consequences to the client from the mental health nursing perspective" (Ravelin et al., 2006, p. 312). Dance has a double-

effect by involving both body and mind that can help in discovering or modifying a person's body image. Dance can release emotional and physical pressure (Ravelin et al., 2006). According to Ravelin et al. (2006), patients who had difficulty communicating with others could use nonverbal communication through social ballroom dancing.

Humans have good reasons for dancing, and dancing may be more ancient than proper spoken languages (Lloyd, 2009). The theory is that women dance to encourage men to dance to learn more about men, and enjoy dancing for different reasons (Lloyd, 2009). Women get an innate joy from moving to music, feel a romantic rush, dancing helps women get in the mood, and Salsa makes women feel sexier (Lloyd, 2009). Men by contrast get joy from dancing well, and not just from the mere act of dancing (Lloyd, 2009). When asked about dancing, it seems that women prefer to dance the Salsa whereas men prefer a Lindy hop (Lloyd, 2009). Women do not enjoy forceful men, but one who is a good leader only leading the moves the partner enjoys (Lloyd, 2009). A woman judges how physically talented the man is at dancing, and this determines how well the man will treat the woman (Lloyd, 2009). This dance theory supports the theory in the quantitative study because people experience joy through ballroom dancing that contributes to mental and emotional health.

Issues, Perspectives, and Controversies

In the ballroom dance world some issues, perspectives, and controversies in the field exist. For example, one opposing theory is stress during competitions. The opposing viewpoint in theories includes the social self-preservation theory. According to this theory, humans preserve the social self, and threats by dance competition produce

cortisol (Rohleder, Beulen, Chen, Wolf, & Kirschbaum, 2007). The argument and disagreement is that during conditions most threatening, such as couple versus group competition, an increase in cortisol occurs (Rohleder et al., 2007). The argument is that cortisol causes stress, and stress is associated with negative health outcomes (VanDenbossche, 1998). Yet, social ballroom dancing has stress-relieving aspects that contribute to better health (Monti, 2008).

Before a competitor's heart rate starts to go faster just thinking about a group ballroom dance competition, competitors should be made aware that stress is not always considered a negative thing (Rasminsky, 2009). One physician thinks that when people response to stress it helps. The doctor is with the San Francisco Ballet, is supervising physician, and the chairperson of the Dance USA Task Force focusing on the health of dancers (Rasminsky, 2009). This doctor explained that during stressful moments, such as an audition, the sympathetic nervous system and endocrine system function together to release a higher level of adrenaline and cortisol (Rasminsky, 2009). This would be beneficial and dancers are more alert, able to learn choreography quickly, and move with more confidence (Rasminsky, 2009). Much like dancers at an audition ballroom dance competitors have to perform.

When stress becomes chronic, such as job searching during the bad economy, this can have a harmful affect on a person's dancing. Rasminsky (2009) explained that, too much adrenaline will keep a person in "Fight or flight" mode, leading to fatigue, and anxiety (para. 3). This will slow down reflexes and thinking processes makes learning a choreographed routine a challenge (Rasminsky, 2009). The extra adrenaline causes a

person to sweat more, breathing speeds up, and heart beats rapidly (Rasminsky, 2009). Staying hydrated is necessary during these times (Rasminsky, 2009). The doctor recommends exercise for stressed-out dancers because it reduces injury, cholesterol, and releases endorphins (Rasminsky, 2009). Exercise is the best treatment for anxiety and depression (Rasminsky, 2009).

Hartweg (2007) explained that people have learned why and how dancing, music, laughing, touching hands, and social interactions combine in a mystic synergistic way that activate hormones and neurotransmitters, such as beta endorphins, oxytocins, dynorphins, and enkephalins. What also occurs is the reduction of the harmful stress-related adrenal steroid hormones, such as cortisol, hydrocortisone glucocorticoid that will disable the human immune system, and increases storing fat around the waist and hips (Hartweg, 2007).

Exercise specialists reported that competitive ballroom dancing elevates the heart rate like cross-country skiing or running (Dancing To Your, 1990). Whether a person wants to dance socially or competitively is a choice that needs to be made while taking ballroom dancing. Participating in competitions is optional, and a decision the individual has to make. DanceSport makes people excel in dance because the focus is on becoming the best. Students focus on more technique, timing, footwork, foot positions, holding positions, appearance, posture, head positions, expressions, and styles. According to Monti (2008), dancing at competitions or performing as an amateur provides added incentive causing participants to excel in dancing. Individuals must make a commitment and schedule practice time before performing or competing.

The writers at Dancing for the Gold (1997) indicated that ballroom dancing is promoted for inclusion as an amateur sport in the Olympics. DanceSport competitions in the upcoming Olympics will be about representing the country and uniting the world through ballroom dancing (World Dance Council, 2009). Whether at a national, world or Olympic competition all participants want the first place, but good sportsmanship is necessary when taking part in a DanceSport competition. Ballroom teachers should remind students of the importance of good sportsmanship at a competition. Winners never give up, and keeping a positive attitude will help. To be a champion is not just about the first place trophy, but about attitude (Marion, 2006).

In the past another disagreement was that only abled-bodies could learn to dance, but wheelchair dancers have proven that it can be done (Kimmons, 2003). Ballroom dancing is not just for the glamorous social or competitive dancer (McMains, 2006). McMains (2006) explained that throughout the 20th century, ballroom dance has been defined by its promise of upward class mobility, but it has evolved over the years. The theory is that people with disabilities, such as war veterans can experience better health through fun wheelchair ballroom dance classes (Kimmons, 2003). The benefits of dancing are many, and in the U.S. organizations now provide dance instruction for persons with disabilities (Kimmons, 2003). Wheelchair users can dance with person's who are considered abled-bodies in social and competitive dancing (Kimmons, 2003). This type of dancing has become worldwide, may be a recreational activity, as an integral part of a rehabilitation program, or done competitively as a sport (Kimmons, 2003).

Definitions of Terms

Definitions are for the purpose of the research study (Creswell, 2004). Terms unfamiliar to the reader are in alphabetical order. The following is a list of terms for this study:

Amateur. Dancers who do not receive monetary compensation for dance skills (Marion, 2006).

Arthur Murray Ballroom Dance Schools. The writers at Medical Studies (2005) explained that Arthur Murray Dance Studios are in the United States, Australia, Puerto Rico, Brazil, Italy, Japan, Israel, Egypt, Jordan, Canada, and South Africa. After retiring from managing the Arthur Murray's organization, Arthur and sister, Kathryn Murray, both were still ballroom dancing living up to more than 90 (Medical Studies, 2005).

Championship. An event held annually in a geographic area (USA Dance Rulebook Definitions, 2009). A larger competition with many couples, entries, and requires more judges (Marion, 2006).

DanceSport. According to Keck (1998), DanceSport is competitive ballroom dancing. "DanceSport" describes dances referred to as "Ballroom Dancing" in the U.S. and Internationally (Keck, 1998). These include American Rhythm and Smooth dances, International, and Standard dances, Theatrical Arts, West Coast Swing, and other dances (Marion, 2006; USA Dance Rulebook Definitions, 2009). Officially recognized as a sport by the International Olympic Committee (IOC) since the year 1997 (Marion, 2006;

USA Dance Rulebook Definitions, 2009). DanceSport is the newest Olympic recognized sport (United States Amateur Ballroom Dancers, 2005).

Instructor. An individual who teaches group or private ballroom dance classes, sometimes used interchangeably with teacher (Marion, 2006; USA Dance Rulebook Definitions, 2009).

International DanceSport Federation (IDSF). The International DanceSport Federation (IDSF) represents more than four million athletes around the world, and the president is Carlos Freitag (International DanceSport Federation, 2007).

National Dance Council of America (NDCA). The National Dance Council of America (2006) is the officially recognized governing body of ballroom dance education in the U.S., representing USA on the World Dance and DanceSport Council (WD&DSC), the worldwide governing body of Professional Ballroom Dancing.

Professional Competitor. A professional dancer registers with the National Dance Council of America (NDCA) to compete professionally, registers as a professional with an amateur competitor, employed by a dance school to teach, and paid for teaching (National Dance Council, 2006).

Studio Owner. An individual who owns a ballroom studio (Marion, 2006).

USA Dance. USA Dance is formerly known as the United States Amateur Ballroom Dancers Association (USABDA). USA Dance is a nonprofit and is recognized by the U. S. Olympic Committee as the National Governing body for ballroom dancing in the U. S. with 150 chapters. The chapters create opportunities for members, and

ballroom dancing is affordable for people in the community (USA Dance Rulebook Definitions, 2009).

World Dance Council (WDC). World Dance Council (WDC) is the world authority for professional dance and DanceSport (World Dance Council, 2009).

Assumptions

Neuman (2003) explained that concepts have built-in assumptions, and are statements concerning the nature of things not testable or observable. Theories and concepts build on assumptions concerning the nature of human beings, social realities, or a phenomenon. Assumptions are not seen or stated, and researchers deepen understanding a concept by identifying the assumptions (Neuman, 2003). For example, the concept of a book assumes people with the ability to read, paper exist to write on, and a system of writing (Neuman, 2003). Another example would be the concept dance assumes individuals who can dance, a dance floor exists, and a method of learning. The idea of books or dance would not make much sense if there were no assumptions (Neuman, 2003). Concepts include assumptions regarding the behavior of people, and social relations (Neuman, 2003). The assumption section is for describing areas a researcher thinks may occur, and which testing has not been done on the population (Simon & Francis, 2004).

The theories in this study contain concepts, definitions, and assumptions (Neuman, 2003). These theories identify how concepts relate to one another (Neuman, 2003). The germinal and current theories explain why relationships exist or whether it

does not (Neuman, 2003). Theories in this study are the "overall framework of assumptions and concepts in which it is embedded (Neuman, 2003). The assumption is that people do physical activity, such as ballroom dancing to improve health and prevent illness and diseases (Creamer, 2005; Heather, 2007; Jenkins, 2003; Lee, 2007; Tanas & Renzo, 2006; Verghese, 2006; Ward, 2008).

Scope of the Study

According to Maybee (2007), the scope discusses how a researcher plans on investigating a specific area of research, such as the sample. Scope is referring to what is specifically in the study (Maybee, 2007). Maybee (2007) indicates this includes the sample size, methods of acquiring data, extent of data analysis, and other factors defining the boundaries of the research. The purpose of the study is to research health issues, and how ballroom dancing can offer solutions for the ongoing health issues facing many Americans and people around the world. Health issues include dementia, Alzheimer's, depression, diabetes, stress, heart conditions, obesity, osteoporosis, rheumatoid arthritis, ulcers, varicose veins, toxins in the body, cancer, circulatory problems, and many others (Verghese, 2006; Ward, 2008).

In general, the study suggests that people are realizing the many health benefits of ballroom dancing. It has shifted from recreation as a way to heal and improve health (Creamer, 2005; Hanna, 2006; Heather, 2007; Jenkins, 2003; Verghese, 2006; Ward, 2008; Zusman, 2007). The quantitative comparative research study helped compare the differences between students and teachers and the health benefits of taking ballroom dancing. To collect data a pilot study included a small sample of six ballroom dancers as

participants, and in the main study the sample group consisted of a national sample of 100 students and 100 teachers over the age of 18. After gathering numerical data for analysis from the Health Issues and the Benefits of DanceSport Survey pilot study, and main study, the data was summarized in tables (Sargent et al., 2006). Gathering data from the survey is possible with the closed-ended and Likert-type scale. In this quantitative study, inferential analysis included hypothesis testing. The descriptive statistics test included measures of central tendency, and measures of variability. Descriptive statistics helped analyze descriptive questions, and to compare group or relate variables inferential analysis was necessary.

Limitations and Delimitations

According to Creswell (2004), limitations are factors or compromises that limit the study, excluded from the study, and beyond the control of the research. One limitation is that the studies could be exploratory and limited to only a few numbers. The results of the study should be used as a guide to further research in this area. The population of teachers and students were from the Arthur Murray's ballroom dance schools. Teachers and students were over the age of 18, and the sample consisted of 100 teachers and 100 students. Ballroom dance schools have students start dancing at a young age and are open to all ages.

Second, another limitation is that in the cross-sectional survey design the collection of data is done at one point by researchers, and data is only on present views (Creswell, 2005). Third, in the questionnaire, mailing or electronically sent, another limitation is that individuals may lack personal investment in the study and decide not to

return the instrument. Not all participants may have access to computers or feel comfortable using the Internet (Creswell, 2005). Researchers do not have a way of explaining questions, and participants could misinterpret the items on a survey (Creswell, 2005). The results of the study are valid, but conducting further research on the same topic will add to the knowledge.

Delimitations are items that a researcher can control, but the choice is not because of resources that limit the ability to generalize the results of the study to the greater population (Sproull, 1995, 2004). In this study, measurement limitations would be the Likert-type instrument. The different responses allow each respondent to judge the interpretation slightly different. The interpretation of definitely versus agree may differ from respondent to respondent.

Chapter Summary

Better health (dependent variable), through ballroom dancing (independent variable) is the theory and starting point for this study. According to Verghese (2006), older adults who dance frequently are less likely to develop dementia. Exercise like ballroom dancing benefits individuals suffering from health issues. The method was quantitative, and the population included students and teachers at the Arthur Murray's ballroom dance schools who do a variety of dances. Health issues include dementia, Alzheimer's, rheumatoid arthritis, diabetes, and many others. The purpose of the study was to describe health benefits students' experience. This research is a contribution for today's and future generations of amateur competitive dancers, professional ballroom instructors, and social hobby dancers.

Health issues facing people is on the rise. Ballroom dancing offers a solution for these ongoing health issues facing society. Studies to date support that ballroom dancing make people healthier. Making people aware of how to remedy health issues will result in a healthier lifestyle. The benefits of ballroom dancing include exercise to help the heart, lungs, muscles, coordination, and posture (Wilmoth & Stunkel, 1994).

Chapter 2 gives an overview of historical, germinal, current research, current studies, and theories. Chapter 2 includes a literature review from many scholarly sources and peer-reviewed articles, books, and dissertations. This chapter has germinal and current research, and research variables are discussed. Germinal and current research includes literature and theories about why people do physical activity, such as ballroom dancing. The literature and theories suggests that people do ballroom dancing not just for recreation, but for prevention of illnesses and diseases.

Gaps in knowledge require more research on the topic to learn about specific illnesses and diseases. Conducting research on long-term effects of social dancing for older adults who experience falls, cognitive decline, and mobility will increase knowledge in this area (Verghese, 2006). The problem is the increase of people with health issues in the U.S. and worldwide. The study was possible using a quantitative research method.

CHAPTER 2: LITERATURE REVIEW

To summarize chapter 2 examines theories, germinal literature, current literature, studies, and gaps in the literature. Evidence points to the importance of exercise through ballroom dancing. The dissertation topic focused on health issues and the benefits of ballroom dancing referred to as DanceSport. For people to start a healthier lifestyle awareness is necessary and people should learn about the positive effects of ballroom dancing. Ballroom dancing is a remedy for today's health issues people experience due to lack of exercise.

In general, the literature for the dissertation research included studies, personal experiences, opinions, and more on the topic of health and DanceSport. For this study, better health is the dependent variable, and taking ballroom dancing is the independent variable. The participants are students and teachers, and the research site is the Arthur Murray's ballroom dance schools.

Research Documents

Literature was reviewed and included searches with topical phrases and keywords. A total of 94 scholarly sources and peer-reviewed articles were found at University of Phoenix online library in the Health and Wellness Resource Center database, ProQuest database, MEDLINE database, ProQuest Dissertations and Theses database, Gale PowerSearch database, Google Scholar, EBSCOhost databases, and one other article. Sources include five online websites, two dissertations, and 12 books.

The following are keywords for literature searches that help in systematically organizing the approach to available information. The following were some topical phrases or keywords used to research the problem, purpose, and variables: health issues and the benefits of DanceSport, how ballroom dancing affects the heart and lungs, ballroom dancing and how it reduces stress, people experience less risk of injuries because of taking ballroom dancing, preventing health issues through ballroom dancing exercise, research on ballroom dancing improving dementia, Parkinson's disease patients and ballroom dancing, lowering the risk of depression through ballroom dancing, burning calories through ballroom dancing as fun exercise, ballroom dancing and its effect on osteoporosis, ballroom dancing and rehabilitation after knee or heart surgery.

Germinal and Current Research

Early stages and current research on the topic of health issues and the benefits of DanceSport indicate that people with health conditions could turn health problems around. In the early stages of the developing theories of why people would dance is that it provided health benefits, such as giving the brain a boost, helps people with arthritis, and exercise to prevent diseases (Delany & McVeigh, 1992; Kearns, 1997; VanDenbossche, 1998). The germinal and current research supports the theory of better health through ballroom dancing.

Germinal Research: 1956 to 2003

Activates brain cells. Kearns (1997) theory about why people take ballroom dancing is that it gives the brain a boost that a person would not experience from a

stairclimber or an exercise bike. Matthew (2001) observed that people experience better health through ballroom dancing because it improved brain function, and this supports the theory in the study (Matthew, 2001). A study by the University of Illinois confirmed that activities requiring coordination, such as dance will trigger the growth of blood vessels in the brain and to form connections between brain cells (Kearns, 1997). One researcher says that because learning is taking place, this will trigger improved brain functioning if done on a regular basis (Kearns, 1997).

Arthritis. According to Delany and McVeigh (1992), through dancing people with rheumatoid arthritis can reduce inflammation in joints and increase range-of-motion. The theory of why people do ballroom dancing is that social dancing improves health (Delany & McVeigh, 1992). Delany and McVeigh (1992) explained that low-impact dance forms involving relaxation will provide the greatest benefit, and social dancing will improve health (Delany & McVeigh, 1992). In Delany and McVeigh (1992) observation is that social dancing provides a boost to individuals with arthritis (Delaney & McVeigh, 1992; Matthew, 2001). Matthew (2001) thinks that physical activity can help arthritis. This supports the theory of better health through ballroom dancing.

Cancer. VanDenbossche (1998) thinks that exercise plays a vital role in cleansing toxins from the body (VanDenbossche, 1998). The theory is that exercise through ballroom dancing contributes to health and prevents diseases (VanDenbossche, 1998). Studies have confirmed and support the theory in this study. VanDenbossche (1998) explained that, "Lack of exercise, combined with an overburdened and garbage-laden system, greatly reduces the circulation of lymph, leading to diseases, such as, cancer. VanDenbossche (1998) believes that today's daily time pressures and modern

conveniences foster inactivity, and even though society focuses on health, a majority continue to sit down (VanDenbossche, 1998).

Circulation. VanDenbossche (1998) thinks that lack of exercise can lead to circulatory problem. The theory is that daily exercise through ballroom dancing will improve health, and that it should be part of a person's daily routine (Mortimer, 2001). Mortimer (2001) added to include vitamin C supplements to increase leg circulation. This applies to especially people with spider, and varicose veins (Mortimer, 2001). Spider and varicose veins are caused "by a structural malfunction in the valve of the vein that controls blood flow" (Mortimer, 2001, para. 12). The vein becomes swollen and visible when the valve is not working properly (Mortimer, 2001). Ballroom dancing helps circulation by improving oxygen flow that improves health (Matthew, 2001).

Confidence. The theory here explains why people do ballroom dancing. Jenkins (2003) believes that men want increased confidence level, and the ability to dance with the ladies when music starts to play (Jenkins, 2003). The ladies enjoy when the gentlemen ask for a dance because of the increase in confidence on the dance floor (Jenkins, 2003).

The theory here fits the theory in this study rather well. Wilmoth and Stunkel (1994) observed that people do ballroom dancing because of the increase in self-esteem that leads to mental health. Wilmoth and Stunkel (1994) explained that people taking ballroom dance lessons worry about not learning quickly, and do not notice others making mistakes (Wilmoth & Stunkel, 1994). Students will be dancing a complete waltz

or foxtrot without stopping, and can dance at weddings with confidence or dance whenever the opportunity arises (Wilmoth & Stunkel, 1994).

Coordination. In this theory the believe is that people do ballroom dancing to improve health and that ballroom dancing offers health benefits for everyone, especially to seniors (Matthew, 2001). Doctors recommend movement to seniors to keep age-related conditions at bay (Matthew, 2001). Some of the benefits of ballroom dancing include maintaining better coordination (Matthew, 2001). Seniors can enjoy a healthier life through ballroom dancing exercise, which fits the theory in this study well (Mathew, 2001).

Dementia. The theory here explains why people do ballroom dancing, and the studies confirmed that people with dementia can benefit from ballroom dancing (Palo-Bengtsson et al., 1998). Ballroom dancing is done because it can improve the health of people with dementia (Palo-Bengtsson et al., 1998). Palo-Bengtsson et al. (1998) stated, "Dementia disease causes intellectual impairment. Memory loss is one of the earliest, most obvious features of dementia" (p. 1). People with dementia also have deficits in problem-solving, attention, language, and motor function. Palo-Bengtsson et al. (1998) indicated that "delusions, hallucinations, activity disturbances, aggressiveness, affective symptoms, and agitation are also usual in the progression of Alzheimer's Disease (AD)" (p. 1). In a study, researchers found that physical activities did not lower the risk of dementia among participants, but dancing did lower the risk by 76% because of the mental effort involved (Alzheimer's, 2003).

Studies confirmed that patients with dementia respond well to ballroom dancing (Palo-Bengtsson et al., 1998). In a study, six individuals with dementia are shown on a

videotape during four dance sessions in a Stockholm nursing home. Patients with dementia can benefit from ballroom dancing. According to Palo-Bengtsson et al. (1998), nurses recognize the positive value of ballroom dancing. People with dementia can experience better health through ballroom dancing (Palo-Bengtsson et al., 1998).

Disabled persons. Another observation that supports the theory in this study is that people with disabilities experience better health. The author believes that a group of people who ballroom dancing helps are those with disabilities through fun wheelchair ballroom dance classes (Kimmons, 2003). This type of dancing has grown, is presently widespread around the world, and may be a recreational activity, as an integral part of a rehabilitation program, or done competitively as a sport (Kimmons, 2003).

Emotional health. The theory of why people do ballroom dancing is that it gives people an opportunity to reintegrate memories and emotions from earlier years in dancing (Theiss, 1989). Theiss (1989) added that ballroom dance offers a gentle aerobic workout and is an activity that improves the emotional health, and social well-being (Spilner, 1991). Social ballroom dancing leads to spontaneous activity and stimulates people to communicate better, socialize, and to have fun (Jenkins, 2003). Socializing will lead to better emotional and mental health, and this supports the theory in the study (Jenkins, 2003). According to Krucoff (1992), Margaret Lee, a senior dances the triple swing to overcome depression. Ballroom dancing can make a person happier that leads to emotional health. Jenkins (2003) indicated that after returning from the dance floor people are happier and smiling. This enjoyment and happiness from ballroom dancing helps release endorphins, and are mood enhancers (Jenkins, 2003).

Evolving. Karatsu (2003) explained that, "The contemporary English style ballroom dancing is a codified form of other cultural practices, particularly, those of Latin America" (p. 416). Karatsu (2003) has a theory about why ballroom dancing changed in England and Japan. The explanation is that England's working class was responsible for indigenizing and changing ballroom dancing (Karatsu, 2003). In the country of Japan via England, the middle-class have adapted and semi-Japanized ballroom dancing (Karatsu, 2003). Ballroom dancing is evolving and learning is good for the mind (Creamer, 2005).

Exercise. The theory of why people do ballroom dancing is that exercise is possible, and people enjoy it. Ballroom dancing is very spiritual when comparing to other forms of exercise because dance energizes and lifts people up (Krucoff, 1992). When physical activity is part of a person's lifestyle, evidence through scientific studies support that the disease-preventing qualities of regular physical activity can promote better health. Matthew (2001) explained that people with diabetes can benefit with adequate physical activity like ballroom dancing.

In a recent study, inactivity will lead to premature death and physical activity is important to achieve better health (VanDenbossche, 1998). VanDenbossche (1998) added that the lack of exercise, along with an overburdened and garbage-laden system, reduces the circulation of lymph and leads to malabsorption diseases. Physical activity is good for better health and could include walking, gardening, hiking, and ballroom dancing (VanDenbossche, 1998). Adequate physical activity, such as exercise can help people with constipation, and this would be important to health (Matthew, 2001). Studies have found that music adds to enjoyment, and encourages people to move to the music

(Karatsu, 2003). Moving to the ballroom dance music is good exercise causing better health that fits the theory in this study (Karatsu, 2003).

Health care. The theory of why people take ballroom dancing is that people want to remain healthy, and the author explains that Americans have unhealthy lifestyles because of alcohol abuse and tobacco leading to addictions that can be costly (O'Rourke & Sullivan, 2003). Americans make unhealthy lifestyle choices resulting in illness or death (O'Rourke & Sullivan, 2003). O'Rourke and Sullivan (2003) observed that adult's interest in health and exercising is lacking with less than one-third reported as exercising. The surgeon general had reported that about 40% of adults are not active (O'Rourke and Sullivan, 2003). In a report by the Washington Business Group on health, obesity costs U.S. organizations about $12 billion annually in lower employee productivity, employee absenteeism, higher health care utilization, and increased insurance premiums (O'Rourke & Sullivan, 2003). O'Rourke and Sullivan (2003) believe that wellness programs will improve the image of the company, reduce employee turnover, facilitate recruiting, reduce employee absenteeism, and prevent workplace injuries (O'Rourke & Sullivan, 2003).

The theory in this study fits the theory because people experience better health through ballroom dancing, which is an aerobic activity. O'Rourke and Sullivan (2003) explained that in comparison to other countries, the U.S. spends more on health care, for example, in 1997 private payers spent about $585 billion on medical services, and purchased $348 billion in health insurance. Money continues to be spent unnecessarily on health care, but corporate wellness programs is the solution for this problem

(O'Rourke & Sullivan, 2003). According to Lauer (2002), Agilent's efforts to keep its 3,900 Sonoma County employees healthy include programs, such as on-site yoga, aerobic training classes, and seminars held each month on health issues, such as fibromyalgia, bone density testing, and prostate cancer.

Heart. The theory that explains why people do ballroom dancing is that it benefits people's health. Matthew (2001) explained that ballroom dancing benefits the heart for a longer life. According to Matthew (2001), if a person has good health, warming up before taking a turn around the dance floor is not necessary. If out of breath after a fast dance sit out for a couple of minutes and maybe check the pulse. For a beginner, the ideal should be around 60% of maximum heart rate. Lively dances use about four to five kilocalories per minute of activity, and slow dances are less. Ballroom dancing is an aerobic activity that benefits the heart for better health (Matthew, 2001).

The writers of Social Dancing (1994) explained that ballroom dancing conditions the cardiovascular system for better health. In the study of 45 people ages 18 to 35 performed a five-minute warm-up and a 20-minute aerobic program of various dances consisting of polka, cha cha, Viennese waltz, samba, and two swing dances, such as lindy, and jitterbug (Wilmoth & Stunkel, 1994). Wilmoth and Stunkel (1994) stated, "Most of the participants were able to raise their heart rates to desired training levels, an indication of aerobic benefit. The waltz, polka, and swing dances were the most effective" (p. 1). This has relevance to the hypothesis because there appears to be better health benefits. The authors believe that a ballroom dance program consisting of these dances could help students when training.

Human touch. Another observation that supports the theory of why people do ballroom dancing is that people have the need for human touch. According to research human touch through the Argentine Tango has a positive effect (Karatsu, 2003). Karatsu (2003) explained that ballroom dancing such as Argentine Tango "is a form of sophisticating the human pleasure in touch," and the experience of touch leads to health (p. 418). Research conducted has documented that tactile stimulation is fundamentally necessary for human maturity (Karatsu, 2003). In a study of bonding, mothers would stroke infants both human and non-human at the earliest stages of post-natal life. In comparison, depriving infants the experience of touch had a negative effect, but stroking had a positive effect on health for infants emotionally, physically, and interpersonally (Karatsu, 2003).

Injuries. Overusing muscles affects a person's health, but prevention is possible with ballroom dancing. This theory of why people do ballroom dancing is that the author believes that ballroom dancing causes fewer injuries (Wilmoth & Stunkel, 1994). According to Wilmoth and Stunkel (1994), overused muscle injuries are rare among social ballroom dancers. In ballroom dance a couple is free to create patterns, changing steps at will (Wilmoth & Stunkel, 1994). Another observation is that because the movements in ballroom dance are constantly changing there seems to be less risk of an overuse injury (Wilmoth & Stunkel, 1994). In aerobics because the routines and patterns are repetitious, this could lead to the overuse of one set of muscles (Wilmoth & Stunkel, 1994). Muscle injuries results in not being able to function as usual and this may even make a person become depressed after a while (Wilmoth & Stunkel, 1994).

Menopause. The theory of why women do ballroom dancing is that women want to improve health and feel good during menopause. According to the writers of ERT or Dance (1995), in a study on menopause, women who did ballroom dancing reported fewer symptoms of hot flashes and experienced improvement of health. One study at the University of Illinois suggests that physical activity may reduce hot flashes and mood swings (ERT or Dance, 1995). A doctor had conducted a study, and asked 279 women from the ages of 37 to 64 to fill out questionnaires documenting individual menopausal status and physical activity (ERT or Dance, 1995). Each woman kept track of hot flashes, night sweats, fatigue, irritability, depression, and general health (ERT or Dance, 1995). According to the doctor's study, women who spent the most time ballroom dancing and tennis, reported fewest symptoms, and better health (ERT or Dance, 1995).

Mental health. In a theory to explain why seniors do ballroom dancing the author believes that seniors want to continue being active to avoid age related conditions (Matthew, 2001). Studies confirmed that because ballroom dancing is physical, it helps improve mental health (Mathew, 2001). Ballroom dancing offers health benefits especially to seniors. Social ballroom dancing helps with age related conditions, and keeps people mentally alert and focused (Mathew, 2001). Jenkins (2003) observed how social dancing helps support emotional, intellectual, and motor functions in older adults who have mental problems. Ballroom dancing helps with better mental health (Mathew, 2001).

Obese or overweight. In this theory people do ballroom dancing because people want to live longer, prevent illnesses, and diseases. Ballroom dancing is good exercise

especially for obese or overweight individuals (O'Rourke & Sullivan, 2003; Stark, 1998). According to Stark (1998), ballroom dancing offers aerobic exercise for better health, and when sustained for half an hour it burns anywhere from 200 to 400 calories. The surgeon general and the Centers for Disease Control and Prevention reported that 61% of adults in America are overweight or obese (O'Rourke & Sullivan, 2003).

An individual who is obese or overweight is at greater risk of conditions, such as diabetes, strokes, arthritis, cancer, breathing, and depression (O'Rourke & Sullivan, 2003). Adults with obesity have a 50% to 100% chance of premature death, and an estimated 300,000 people die every year because of obesity (O'Rourke & Sullivan, 2003). Johnson, Burke, and Mayer (1956) indicated that in a study a comparison was made of two groups of high school girls with 28 obese and 28 non-obese individuals of similar height, age, and grade. The study confirmed that the caloric intake of an obese group was lower than that of the non-obese group, and that obese people were likely to be physically inactive (Johnson et al., 1956).

Osteoporosis. Another theory explains that women dance to prevent osteoporosis. Jenkins (2003) noted that ballroom dancing helps in preventing or slowing down loss of bone mass (osteoporosis). Osteoporosis is weakening of bone structure (James, 2004). According to Jenkins (2003), "Dancing is also a weight-bearing exercise and helps to strengthen bones (tibia, fibula and femur)" (para. 6). The writers at Social Dancing (1994) added that prevention of osteoporosis is possible through ballroom dancing leading to better heath.

Self-esteem. The theory here explains that people dance to be socially active and have fun. Jenkins (2003) indicated that humans are very social creatures, and taking ballroom dancing allows people to meet and have fun (Jenkins, 2003). Ballroom dancing is a social activity that contributes toward improving self-esteem (Jenkins, 2003). Unlike a person with depression this type of person has a positive attitude that contributes to better health. Jenkins (2003) further added that ballroom dancing gives a person a positive outlook on life.

Socialize. Coeyman (1998) explained that during the Feste de Versailles in 1668 Louis XIV's guests enjoyed social dancing in elegant surroundings. The theory of why people in the 1600s did early dances was because it gave people an opportunity to have fun, gather, and socialize. Many people would relive the day of the ball in Jean Le Pautre's drawing of 1679 (Coeyman, 1998). Coeyman (1998) explained that Le Pautre's drawing captured couples enjoying dance with hands joined, and facing each other. The royal family would be present while couples participated in dancing, and others in the tribunes were spectators (Coeyman, 1998). Coeyman (1998) explained that this record of early dance is an indication of how ballroom dancing brought people together to socialize and have fun, which are some benefits of ballroom dancing. Coeyman (1998) had observed that social dancing was a participatory and an activity for spectators. This supports the theory of better mental and emotional health through social ballroom dancing.

Strengthens. The theory of why people do ballroom dancing is to shape up, become stronger, and be physically fit. According to Kearns (1997), to tone and

strengthen legs people can try line-dancing, ballet, tap, and ballroom dancing. Kearns (1997) found that for an upper and lower body workout the country two-step, foxtrot, waltz, and tango are best. Matthew (2001) indicated that ballroom dancing helps strengthen muscles, and improves dexterity (Matthew, 2001).

Stress. This theory explains why people choose to do ballroom dancing. For people to continue being healthy losing weight and releasing stress through ballroom dancing can prevent health problems (VanDenbossche, 1998). Psychological stress is a problem and "stress is one of the factors strongly linked to the following conditions: angina, asthma, cancer, heart disease, (late onset, type II), irritable bowel syndrome, immune suppression, ulcers, rheumatoid arthritis, depression and anxiety, to name a few" (VanDenbossche, 1998, p. 3). Grumman (1998) explained that exercise relieves stress that leads to health through the release of endorphins and lowering of cathecolamines. Grumman (1998) also added that an exercise program consisting of ballroom dancing and yoga can help to lose weight and relieve daily stress.

Spilner (1991) agrees that ballroom dancing provides an alternative to aerobic exercises like walking and running. Spilner (1991) indicated that ballroom dancing helps people who experience stress by reducing it. It could provide the ballroom dancer either a light or vigorous workout (Spilner, 1991). It all just depends on what the ballroom dancer needs or wants (Spilner, 1991).

Current Findings: 2004 to 2008

The following are theories, current studies, observations, and explanations of the benefits of ballroom dancing, and how it promotes health:

Alzheimer's. Dementia is a health problem that many people have not just in the U.S., but other countries (Podewils et al., 2005). Alzheimer's disease is the most common cause of dementia, but other causes of dementia can be Parkinson's disease, strokes, injury to the head, or other conditions. Dementia is a condition characterized by a global decline in cognitive functioning (Podewils et al., 2005). An estimated 1.9-4 million Americans have Alzheimer's (Podewils et al., 2005). Podewils et al. (2005) explained that a study provided support for the hypothesis, and physical activities like ballroom dancing contributed to health and helped protect against the risk of vascular dementia, all-cause dementia, and Alzheimer's disease.

Another observation that supports the theory in this study to explain why people dance is that different cultures around the world have been known to use dance for health and healing its people (Ward, 2008). Understanding the power of dance for the purpose of healing and health is essential for preventing, managing, and treating people's health conditions (Ward, 2008). When dancers understand the value of dance for health and wellness dancers will want to extend the knowledge gained and love of dance into the community (Ward, 2008). These dancers will teach others about healing and health (Ward, 2008). With dancing as exercise people can enjoy its many benefits (Ward, 2008). Physically active people have a lower risk of Alzheimer's disease, and research has found that in comparison to people who hardly ever or never dance, the older adults

who dance frequently were less likely to develop dementia (Ward, 2008). By the year 2030, about 70 million people living in the U.S. will be 65 years or older (Ward, 2008). The role of social ballroom dancing to promote better health for older adults is necessary and people should encourage it.

In a report, older adults who dance frequently were less likely to develop dementia than adults who seldom or never dance (Verghese, 2006). Based on research it was hypothesized that older social dancers (OSDs) would have better balance, gait, and cognition than the older non-dancers (ONDs) (Verghese, 2006). Defining the cognitive and physical attributes of regular social dancing as exercise would help determine the health benefits. Planning future dance interventions would prevent future harmful outcomes to seniors, such as slow gait, falling, and dementia (Verghese, 2006).

Arthritis. The theory of why people do physical activities, such as ballroom dancing is that exercise relieves the pain people experience with arthritis (Ward, 2008). James (2004) explained that arthritis is the inflammation of the joints. Ballroom dancing helps rheumatoid arthritis, and many other health issues (Ward, 2008). This supports the theory that better health is possible through ballroom dancing.

Back pain. The theory of why people do dance exercise is that it promotes better posture (Ward, 2008). Dance exercise, such as floor work, improves core strength, the area from which all movements emanates (Ward, 2008). Ward (2008) indicated that with core training people can increase balance, coordination, control movement and that it helps with posture and reduces lower back pain. The quality of movement improves

through dance, such as ballroom dancing whether an athlete, social dancer, or an every day person (Ward, 2008).

Balance. The author's theory regarding why people like professional ballroom dancers perform is the physical benefits, such as better balance and control (Verghese, 2006). Verghese (2006) believes that ballroom dancing contributes to better health. The writers at Foxtrot Your Way (2007) explained that a study found ballroom dancing helped a group of adults over the age of 60 improve balance and physical performance.

Breast cancer. The theory of why people do physical activities is that it addresses chronic disease prevention and management (Ward, 2008). A study using postmenopausal women confirms that walking 30 minutes per day reduces the risk of developing breast cancer by 20% (Ward, 2008). Ward (2008) explained that provided a woman is physically active and has a healthy body weight there would be about 37% reduction in the risk of developing cancer. Among breast cancer survivors, the more physically active women were the lower the chance of cancer occurring again (Ward, 2008). Ward (2008) recommends that for better health regular physical activity is necessary, and this may include ballroom dancing.

Communication. The theory about why people do physical activity, such as ballroom dancing is that besides good exercise it makes one sensitive to others, and helps improve life (Creamer, 2006; Ward, 2008). Creamer (2006) explained that after obtaining a Ph.D. in laser physics and admission to Harvard Medical School, one doctor changed the stereotype about Harvard students being bookworms. This doctor formed the Harvard Ballroom Dance Team winning the U.S. national collegiate championships

(Creamer, 2006). The doctor's favorite dance style is standard classical ballroom that includes dances, such as tango, waltz, foxtrot, quickstep, and Viennese waltz (Creamer, 2006).

From 1995 to 2001, annual meetings of the American Academy of Ophthalmology (AAO) had ballroom dancing every Monday night. The doctor organized the dances creating a casual event in which people could relax (Creamer, 2006). This doctor thinks that ballroom dancing helps improve a person's live (Creamer, 2006). Creamer (2006) observed that besides music, movement, and exercise ballroom dancing makes people sensitive and more aware of other human beings (Creamer, 2006). Ballroom dancing has helped the doctor become a better listener, more patient, communicates better, and sensitive to patients' needs (Creamer, 2006). Ballroom dancing contributes to better emotional, mental, and physical health.

Depression. A theory about why people do ballroom dancing is that it can help with depression. The writers of Don't Be a Wheelchair Potato (2007) explained that exercise can help with depression, such as wheelchair ballroom dancing, wheelchair basketball, and others. People should exercise with friends and family for motivation, and maintain personal connections (Don't Be a Wheelchair Potato, 2007). An observation was made about people who exercise, and this was that people who share thoughts, time, and laughter experience better health, and have lower rates of death (Don't Be a Wheelchair Potato, 2007).

Dysmenorrhea. The theory about why people do exercise is that it helps with pain (Shaw, 2008). Shaw (2008) explained that for women with menstrual pain known as

dysmenorrhea, ballroom dancing exercise could help, and this supports the theory in the study. Studies estimate that about 90% of young women experience severe pain that leads to school, and work absences (Shaw, 2008). Exercise can relieve cramps because it releases beta-endorphins. Dr. Rossi, MD, and obstetrician-gynecologist explained that beta-endorphins are internal opioids, or simply putting it human morphine (Shaw, 2008). It produces analgesia (pain relief) burning the prostaglandins chemicals released during menstruation that cause muscle contractions faster (Shaw, 2008). According to experts the best exercise to relieve menstrual pain is aerobic exercise because heart rate goes up (Shaw, 2008). According to Monti (2008), dance meets the definition of aerobic activity, such as ballroom dancing. Shaw (2008) explained that for better health do exercise, such as ballroom dancing to relieve cramps.

Emotional and physical. A theory that explains why children have unhealthy behaviors is that people are not into activities that encourage cooperation, health, and fitness (Rassenti, 2007). Rassenti (2007) thinks that children should dance to learn how to behave with others and encourage cooperation (Rassenti, 2007). Rassenti (2007) observed the importance of games in nurturing the emotional and physical health of students. Rassenti (2007) explained that the introduction of No Child Left Behind has people focusing not on the physical, but the intellectual part of learning. Rassenti (2007) further added that children need to learn how to play in a nice way, and this could be done by replacing games like touch football and tag with ballroom dancing, yoga, and rock climbing. Program directors say that these activities introduced to fourth and fifth graders encourage cooperation (Rassenti, 2007). Rassenti (2007) believes that children learn early in life the benefits of lifelong health and fitness.

Energy. Pyrillis (2007) theory explains why people take ballroom dancing, which matches the theory in this study. The author believes that people do it to feel better and more energized (Pyrillis, 2007). Pyrillis (2007) observed that Jane Marcus, an executive recruiter, took ballroom dance lessons, and life changed for better (Pyrillis, 2007). Jane took ballroom dance lessons four times a week, and even after a hard day at work of negotiating with clients still had energy (Pyrillis, 2007). Sharing stories about ballroom dancing makes clients appreciate how multidimensional Jane is (Pyrillis, 2007). McDowell-Larsen (2008) explained that moderate exercise daily is better for maintaining energy and boosting performance than an hour of exercise on the weekends.

Exercise. According to McDowell-Larsen (2008), "To create a corporate culture that values exercise, we need to change attitudes" (para. 2). A corporate culture that fosters fitness should support the idea that fitness is acceptable, and that people who exercise are admired. According to McDowell-Larsen (2008), people who exercise regularly rate higher in leadership attributes. Regular exercise and effective leadership go hand-in-hand according to research. McDowell-Larsen (2008) explained that a study conducted by the Center for Creative Leadership, a global provider of leadership education and research provided support for the hypothesis in the study because people who exercise through ballroom dancing regularly rate significantly higher than peers in a wide variety of leadership attributes (McDowell-Larsen, 2008). Exercise should be on top of the priority list if career is important (McDowell-Larsen, 2008). Verghese (2006) explained that social ballroom dancing is a form of recreation in senior centers to keep older adults physically fit, and experiencing better health through fun exercise.

Happier married couples. The theory of why people do ballroom dancing is because ballroom dancing causes people to be happier (Creamer, 2005). Creamer (2005) believes that a person can have a happier marriage leading to emotional and mental health, and this supports the theory in the study. In the case of a doctor and his wife spending time learning how to ballroom dance is fun (Creamer, 2005). Both are good ballroom dance teachers who enjoy teaching at home, and abroad cruise ships (Creamer, 2005). The doctor's observation is that most dancing couples have happy marriages (Creamer, 2005). By spending time ballroom dancing couples have a happier marriage. These couples learn about negotiating and compromising to solve problems during disagreements related to dance (Creamer, 2005). Ballroom dancing is physical and fun at the same time (Creamer, 2005).

Heart. Verghese (2006) thinks that exercise through ballroom dancing may improve cardiovascular fitness. Verghese (2006) has observed that ballroom dancing leads to better health. The writers at New Year's Resolutions (2006) indicated that regular physical exercise makes a person live longer, and keeps the walls of the arteries flexible helping dampen rises in blood pressure that reduces the risk of stroke and atherosclerosis. Heart disease and stroke have become common in the U.S., and other Western industrialized nations (Zusman, 2007). Scientists have observed and come to the conclusion that people with cardiovascular disease eat excessive salt, too many calories, and saturated fats (Zusman, 2007). Zusman (2007) explained that fresh fruits and vegetables should be a part of people's daily meals. Ballroom dancing raises heart rate, prevents heart problems, and will result in better health (Bender, 2008; Heather, 2007; Lee, 2007).

According to Heather (2007) and Lee (2007), researchers observed and tracked 39 patients with heart disease who did regular exercise for about 30 minutes each day, five days of the week, and for one entire month. Half of the group performed a ballroom dance routine, whereas the rest cycled on stationary bikes (Heather, 2007; Lee, 2007). In this observation of heart patients the group who did ballroom dancing had a 28% increase in heart and lung capacity, and the group on stationary bikes had a 31% boost (Heather, 2007; Lee, 2007). Experts agree on better health benefits of heart patients because of quick and uninterrupted movement of the up-tempo ballroom dancing (Heather, 2007; Lee, 2007).

Writers at Ballroom Dancers (2006) explained that research suggests ballroom dancing is exercise that leads to the similar heart benefits as a bicycle workout or being on a treadmill. Heart doctors are realizing the many benefits of ballroom dancing. Studies conducted on the benefits of ballroom dance by California State University at Long Beach confirmed that student's heart rates go up to near-maximum training rates with a few minutes of warm-up, and dancing the cha cha, swing, or polka for about 20 minutes (Medical Studies, 2005). This supports the theory in this study of better health through ballroom dancing.

Monti (2008) has a theory to explain why people dance, and believes dancing a ballroom dance like the waltz leads to health benefits. Monti (2008) explains that the waltz is an effective therapeutic activity for cardiac patients. Romaualdo Belardinelli, M.D., had 110 patients for a study with stable congestive heart failure and a mean of age 59 (Monti, 2008). Monti (2008) explained that a random selection of 44 subjects took

place to participate in waltz training. Subjects did the waltz three times per week for a total of two months (Monti, 2008). The research team had observed and found that heart attack patients regained strength after training to dance the waltz (Monti, 2008). Another 44 subjects did exercise on the treadmill and cycle (Monti, 2008).

The study found that the waltzers' and the standard cardiac exercise group had improvements in cardiopulmonary function (Monti, 2008). Scores for the waltz group were better on functional and quality-of-life measures (Monti, 2008). The waltz training group had more improvement in mood, sleep, performing hobbies, housework, and sex than the group who did cycling and the treadmill (Monti, 2008). The observation determined that people have more fun, can dance with a partner, is safe, and contributes to health (Monti, 2008).

Hypertension. Zusman (2007) thinks that increasing activity could include fun exercise by taking up social ballroom dancing for better health and to improve life expectancy (Zusman, 2007). Zusman (2007) explained that a study provided support for the theory that physical activities, such as ballroom dancing helped protect against hypertension. Zusman (2007) indicated that hypertension has become common in the U.S. High blood pressure is medically known as hypertension, and one in three adults in the U.S. has this disorder (Zusman, 2007). After years of research, scientists came to the conclusion that the American diet contributes to hypertension because of too much salt, saturated fats, and too many calories (Zusman, 2007).

The Framingham Heart Study had found that hypertension increases the risk of cardiovascular disease (Zusman, 2007). High blood pressure is detectable and

preventable (Zusman, 2007). Individuals can control high blood pressure, reduce it, and treatment is available (Zusman, 2007). According to Zusman (2007), an estimated 690 million people around the world, and more than 65 million in the U.S., have high blood pressure. Zusman (2007) explained that people can keep blood pressure in a healthy range by making lifestyle changes. According to Zusman (2007), people can live a healthier life by losing weight, increasing activity, and by eating nutritional foods.

Lighten up. According to writers at Medical Studies (2005), the observation is that dancers are lively, lighten up, are exciting, and enjoy the company of others. Another theory gives an explanation of why people do ballroom dancing, and reason is it changes a person's life (Pyrillis, 2007). For example Priscilla Lopez, a clothing designer and manufacturer, who is also an International-style ballroom dance champion described as a control freak that can lighten up during ballroom dance classes (Pyrillis, 2007). This leads to health benefits like better mental and physical health that supports the theory in this study (Pyrillis, 2007). The ballroom dance instructor told Priscilla that losing the last competition was an obsession with the technical side. Dancing passionately instead of technically is something Priscilla will need to work on (Pyrillis, 2007).

Memory and creativity. According to Creamer (2005), both a competitive ballroom dancer and doctor has a theory, and explained that people dance because just like doctors ballroom dancers are always learning. Creamer (2005) has observed that ballroom dancing is not all physical because as in medicine it involves memory and creativity. Competitive dancers practice about 100 hours for a two-minute routine before entering a DanceSport championship (Creamer, 2005). Ballroom dancing is not only

physical, but it also keeps the mind active, and healthy. This supports the theory that better health can be achieved through ballroom dancing.

Menopause. Another theory is about why women do exercise. Richardson (2006) believes women exercise because it keeps women fit and active during the midlife years. Menopause is a normal part of being a woman and is a time of many life transitions, renewed energy, and commitment to good health (Richardson, 2006). Women should embrace the idea that to be fit, active, and attractive through the midlife years and beyond is a good idea (Richardson, 2006). Richardson (2006) explained that diet, exercise, and proper medical care are steps women should take for a lifetime of good health.

The observation is that midlife women can improve quality of life by maintaining social support, reducing daily stress and anxiety, and taking the time to relax and pursue fun activities (Richardson, 2006). Women should develop new interests, and reduce work hours. Taking a class or joining a club, planning one's financial future, mentor young people in one's professional field or social circle, volunteer to help, travel to learn about new cultures, and take up a new sport (Richardson, 2006). Richardson (2006) explained that to stay fit, and for better health take up golf, tennis, dancing, such as ballroom dancing instead of thinking about it.

Mental health. Another theory that explains why people do ballroom dancing is that unlike typical workouts, dance such as cardio dance classes, and ballroom dance classes use the mind because of the need to concentrate on steps (Bender, 2008). Jarrett (2008) had observed that dance can "amp up your energy and offer a dose of mental clarity" (p. 58). Jarrett (2008) explained that ballroom dancing allows people to do

physical movement, and learn to dance in time to music while coordinating with a partner. Couples synthesize much information and stimulate brain activity for better mental health (Jarrett, 2008).

Laura Peralta, a former dancer and dance therapist based in Scottsdale, Arizona thinks that dance is a form of mental-health therapy (Jarrett, 2008). Jarrett (2008) explains that people store memories becoming patterns that form personalities. Unlike weight lifting ballroom dance classes challenge the mind, and keeps people focused during dance class (Jarrett, 2008).

Another observation that supports the theory in this study to explain why people dance is that dance is used as a healing tool known as dance movement therapy (Ward, 2008). Kinesthetically connecting mind, body, and spirit has expanded how people view dance (Ward, 2008). This includes management and prevention of mental illnesses, chronic diseases, and physical disabilities (Ward, 2008).

Obese or overweight. A theory that explains why people do physical activity, such as ballroom dancing is that it helps burn calories. The writers at Let's Dance (2004) explanation is that with ballroom dancing any type of couple dancing will burn 200 to 300 calories per hour, and this helps obese people improve health. People could samba and exercise by standing with feet together, bending at the knees and bouncing to the samba beat while contracting abdominals (Dancing with the Stars, 2007). Stepping to the side and back to the center will benefit thighs, calves, and abdominals, and helps to get in shape for better health (Dancing with the Stars, 2007).

Ward (2008) explained that the aerobic fitness component of dance has benefits because it strengthens the cardio respiratory system, and makes it more efficient. Dance meets the definition of aerobic activity reducing excess fat in the body, which plays a major role in the increased risk of diseases, such as heart disease, cancer, and diabetes (Monti, 2008; Ward, 2008). Ward (2008) recommends doing regular physical activities regularly, such as ballroom dancing, and to include weight loss for people who have type 2 diabetes for better health. Physical activities and weight loss can improve insulin sensitivity, and even preventing or reducing the amount of insulin or oral medication (Ward, 2008). Another observation is that music serves as a motivator and helps overweight women take off weight by walking to music (Monti, 2008). The women who play music can stick to a weight loss program, and women who walk without playing music have a hard time staying on the program (Monti, 2008). Ballroom dance music can motivate a person to do a variety of dances, and women can substitute walking for fun ballroom dancing instead.

Outlet. Martin's (2008) theory is that people take ballroom dancing as an outlet. Martin's (2008) observation is that historically in times of Depression, World War II, and the Seventies oil crisis, people headed to the dance floor. People want to get away from the realities of bad times and wars (Martin, 2008).

Parkinson's disease. Florindo (2008) added that information from data reinforces the hypothesis that depression is connected to poorer functioning in patients who had Parkinson's disease. A theory of why people dance is that it helps with diseases, and current studies confirmed that ballroom dancing helps with Parkinson's disease

(Hampson, 2008). This supports the theory that better health is possible through ballroom dancing.

Post-traumatic stress disorder. A theory of why people do physical activity, such as dance is because it plays a role in healing individuals who experience abuse, trauma, and torture during wars. Hanna (2006) explained that "Post-traumatic stress syndrome problem is in large part due to a person's memories involving extreme fear or horror," and ballroom dancing helps protect war veterans against post-traumatic stress syndrome (p. 26). The writers at Moving Through Trauma (2009) explained that war veterans suffering from post-traumatic stress disorder have had negative experiences, such as bombs dropping over Vietnam or were held in POW camps during World War II. Dance teachers, such as ballroom dance teachers, and dance therapists continue to use dance to help heal this type of individual resulting in better emotional, mental, and physical health (Moving Through Trauma, 2009).

Self-esteem. Koval (2007) thinks that ballroom dancing helps with self-esteem after observing the ballroom dance team. Koval (2007) explains that win or lose at Blackpool Festival, self-esteem improves in members of the ballroom dance team. Koval (2007) indicated that ballroom dancing is seen not just by adults but children. Children enjoy ballroom dancing and watch television shows, such as Dancing With the Stars, and movies like Mad Hot Ballroom (Koval, 2007).

Koval takes ballroom dance teams from a New York State College to do competitive dancing at Blackpool (Koval, 2007). Whether college teams win or lose at competition, the teams experience improvement of self-esteem through ballroom dancing

(Koval, 2007). Koval (2007) indicated that the college dance team had a skill level that was admired by audiences, and this admiration brought pleasure and joy to the team. This supports the theory of better mental health through ballroom dancing.

Jarrett (2008) thinks that the connection that occurs from achieving control over the body during dance is extremely powerful resulting in better relationships, work performance, and self-esteem. Stahl (2008) explained that an observation was made about a woman named Carlson. According to Stahl (2008), Carlson had an increase in self-esteem after a troubled marriage (Stahl, 2008). Carlson was once a competitive ballroom dancer who tried to be the perfect mother and wife. By the age of 45 Carlson had lost a sense of self, and in her words was half-dead (Stahl, 2008). Juggling roles and a failing marriage was exhausting to handle. Carlson thought life could be better (Stahl, 2008). The husband had made a late attempt to fix the marriage by giving Carlson refresher ballroom dance lessons alone. By taking the dance lessons without the husband, Carlson begins a challenging, but ultimately life-affirming journey toward self-awareness (Stahl, 2008).

Carlson rediscovered self-expression, passion, confidence, trust, self-esteem, through ballroom dancing (Stahl, 2008). Though the troubled marriage did not survive, Carlson is comfortable, and looking forward to each day (Stahl, 2008). Not all marriages are repairable or survive, but ballroom dancing could help a person during times of trouble, such as divorce, and is good therapy. This supports the theory of better mental health through ballroom dancing.

Socializing. Koval (2007) believes that the theory explaining why people ballroom dance is that skills in ballroom dance provide opportunities for socializing, exercising, and fun. Koval (2007) explained that children from England begin ballroom dance training at an early age and enter competitions hoping to become world champions. Koval (2007) observed that the skill level of a 16-year-old in the Blackpool Ballroom Dance competitions is equal to that of a 16-year-old ice skater competing in the Olympic Games.

Stress. Monti (2008) believes and explains the theory that ballroom dancing has stress-relieving aspects that contributes to better health. According to Monti (2008), participants' motivations and perceived benefits of dancing were consistent with studies. In studies it was observed that hearing music, socializing, and stress-relieving aspects of dancing motivate people to be more active (Monti, 2008). Martin (2008) explained that dance is intoxicating, and if all the talk of recession has a person down ballroom dancing will help. Martin (2008) believes that dancing is healthy and sociable that makes a person feel like a child again.

According to McDowell-Larsen (2008), regular exercise, such as ballroom dancing, and healthy foods can help people become more resilient, cope with stress, and improve health and well-being. When stress is constant, it may lead to "heart disease, obesity, asthma, ulcers and allergies" (McDowell-Larsen, 2008, para. 1). McDowell-Larsen (2008) explained that stress can contribute to psychological symptoms affecting our happiness and effectiveness. Stress will interfere with exercise that leads to

unhealthy eating habits. This will contribute to high blood pressure and cholesterol levels resulting in poor physical fitness (McDowell-Larsen, 2008).

Release of endorphins. Monti's (2008) theory is that people dance because it releases endorphins, a feel-good body chemical. Monti (2008) explained that dance, such as ballroom dancing helps release endorphins, and provides better health benefits similar to other exercises. The release of endorphins is the feel-good body chemicals that trigger the exhilaration and euphoria experienced by individuals during aerobic exercise (Monti, 2008).

Gaps in Current Research Literature

Depression seems to affect people of different ages and background, and it can last a day or years. Conducting more research to gather missing data on the effects of ballroom dancing on people experiencing different types of depression or who have schizophrenia would benefit many. Research on how ballroom dancing might help women with endometriosis, or how ballroom dancing could help patients with Lou Gehrig's disease would be of interest to scientists (Koninckx, 1998; Walling, 1999). Verghese (2006) indicated that professional dancers had better balance. Social ballroom dancing is very popular at senior centers, but certain studies have not been addressed (Verghese, 2006). More research on ballroom dancing, and the long-term effects on adverse outcomes, such as mobility, falling, and cognitive decline in older adults have not been addressed and should be in clinical trials and longitudinal studies (Verghese, 2006).

Gaps in knowledge exist because studies do not address certain areas. More research on the topic of health issues and the benefits of DanceSport is necessary to answer questions. Researchers are discovering the benefits of DanceSport on diseases, such as Alzheimer's and cancers. The independent variable and dependent variables point to positive relationships, but more research is necessary to answer questions on Alzheimer's, cancers, and depression that may lead to suicides. The result will be a decrease in the rates of death. According to Xia and Grant (2009), more research needs to be done using dance therapy in people with schizophrenia because the studies do not address this. The therapy remains unconfirmed, and encouraging more research will increase high quality evidence in this area. Xia and Grant (2009) explained that dance movement therapy (DMT) is the psychotherapeutic use of movement as a process furthering the cognitive, emotional, physical, and social integration of a person.

Chapter Conclusion

Health issues are an ongoing concern for many, but with proper exercise and nutrition people can prevent life threatening illnesses. Health issues can lead to premature death in both women and men according to research. The goal is to motivate people through this study to change, stay active, increase awareness of health, live happier, and be productive in life. The information found on the topic of health issues and the benefits of DanceSport will assist teachers and leaders of ballroom dance schools plan programs according to the needs of the students. This research is a contribution for today's and future generations. Further research on health issues is important and will be significant to many in the dance industry.

Historically turning to dancing is a way for people to deal with wars and crisis (Martin, 2008). The power of dance for healing and health is essential for prevention and managing of many health issues (Ward, 2008). Some health issues scientists have written about are Alzheimer's, osteoporosis, heart problems, breast cancer, prostate cancer, Parkinson's, arthritis, obesity, depression, diabetes, ulcers, circulatory problems, hypertension, fibromyalgia, and many more. Corporate Health and Wellness Programs can reduce health care costs while increasing employee productivity (O'Rourke & Sullivan, 2003). McDowell-Larsen (2008) indicated that corporate culture should foster fitness, and support the idea that fitness is acceptable. Wellness programs will result in employees being productive, and in a more profitable business (McDowell-Larsen, 2008).

Chapter Summary

The key points in chapter 2 are on the history of ballroom dancing, current, and gaps in literature on health issues. Health issues include dementia, Parkinson's, Alzheimer's, prostate cancer, breast cancer, osteoporosis, strokes, arthritis, high cholesterol, obesity, depression, diabetes, ulcers, hypertension, fibromyalgia, asthma, allergies, and others. The various organizations that support and represent ballroom dancing at the championships are the National Dance Council of America, International DanceSport Federation, World Dance Council, International Olympic Committee, and USA Dance. Benefits of DanceSport includes fun, builds confidence level, reduces stress, burns calories, raises a person's spirits, good for the joints, improves self-esteem, promotes communication, develops better posture, improves life expectancy, and much

more. Wilmoth and Stunkel (1994) explained that ballroom dancing helps you tone muscles, and strengthens calf muscles, thighs, and buttocks to help stay in shape.

Chapter 3 will also include the quantitative research method. Ballroom dancing benefits students on a dance program, and includes building self-confidence, self-esteem, improving social life, and improving health through exercise. The purpose of this study was to do a comparison of people who experience better health (dependent variable) by taking ballroom dancing (independent variable) at the Arthur Murray's ballroom dance schools.

CHAPTER 3: METHOD

The purpose of the quantitative cross-sectional survey study is to provide knowledge about the impact of taking ballroom dancing on health. Ballroom dancing benefits students and builds self-confidence, self-esteem, improves social life, and improves health through exercise. The purpose of this study was to compare students and teachers who experience better health (dependent variable) by taking ballroom dancing (independent variable) at the Arthur Murray's ballroom dance schools in the U.S. This quantitative study is imperative to make people aware of the benefits of exercise through ballroom dancing (Bender, 2008).

Chapter 3 will discuss the reasons for the research method and design appropriateness, population, sampling, data collection procedures, rationale, validity (internal and external), and data analysis. The proposed design helped accomplish the study goals, and the design is the best choice for the research on health issues and the benefits of DanceSport. The population consisted of students and teachers, and the sample of choice was a total of 100 students and 100 teachers.

Research Method

The rationale for the quantitative research method is the questionnaire helped measure the health benefits of DanceSport for both professional and amateur ballroom dancers. The questionnaire included a Likert-type scale and 10 closed-ended questions. According to Pelosi, Sandifer, and Sekaran (2001), the Likert-type scale is designed to analyze how strongly participants agree or disagree with statements on a 5-point scale. In the 1930s, a person named Rensis Likert was responsible for developing the Likert-type

scale common for survey research (Neuman, 2003). With indexes and scales the validity and reliability increases, assists in reducing data, and simplifies the information collected (Neuman, 2003). The index scores can give a precise quantitative measure of a participant's opinion (Neuman, 2003).

In a quantitative method researchers can analyze descriptive questions and use descriptive statistics, but to make a comparison between groups or relating variables inferential analysis is done, and has hypothesis testing as in this study (Creswell, 2005). Steps include identifying the null hypothesis, collecting data, and others (Creswell, 2005). The closed-ended questions helped ask participants 10 questions with response options. After participants sent back the questionnaires these helped answer questions on health issues and the benefits of DanceSport.

The reason for choosing the quantitative instead of the qualitative is the qualitative method has interviews, and narratives of people's dance experiences. This method usually requires a smaller sample. The interview method enables exploring a research question. A larger sample is a personal choice, and with the questionnaire many people for the study is possible. The sampling error formula is helpful in calculating and determining a sample size (Creswell, 2005). The quantitative method included snowball sampling, and an electronic questionnaire (Creswell, 2005).

The focus group technique would have been another way of gathering information and enabling group interaction. A focus group does have advantages that includes speed, flexibility, assessment of attitudes, group interaction, and provides information on new topics. The moderator guides the group in the exchange of ideas and personal

experiences on a topic (Cooper & Schindler, 2003). The output of the session results in ideas and behavioral observations, with recommendations by a moderator. This will be used for quantitative testing later (Cooper & Schindler, 2003). Focus groups provide the manager, researcher, or a client with an opportunity to observe reactions to research questions in an open-ended group setting. Participants respond and use words of choice, and react freely to each other's responses. One or more representatives of the client is behind a one-way mirror in the focus group room to observe the interactions and responses of the participants (Cooper & Schindler, 2003).

The survey included demographic and closed-ended questions for a sample of students and teachers to study health issues and the benefits of DanceSport instead of using focus groups. To understand health issues and the benefits of DanceSport the qualitative research method could be done at a later time. The quantitative study helped measure variables of the hypothesis across many cases (Neuman, 2003). Researchers can include charts and tables in quantitative research, clarify and give meaning to numbers, and explain how the numbers relate to the hypothesis (Neuman, 2003). Today, many people have access to the Internet, and read e-mails every day. The questionnaire was sent by e-mail, and this could result in a high response from the survey participants. According to Neuman (2003), a higher response rate is possible by explaining the protection of privacy to individuals, and treating respondents with respect. The survey only took approximately 15 to 20 minutes to complete, and individuals return it within two weeks via the Internet.

Design Appropriateness

The rationale for the proposed research design and appropriateness for the study is that the cross-sectional survey design helped provide answers by using the data to support or reject the hypothesis (Neuman, 2003). Another reason for the questionnaire is that the anonymity of the participants was under protection. The questionnaire was developed with questions derived from the pilot study results, and included demographic questions, such as dance organizations, gender, and age; eight questions to obtain participant's opinions using a Likert-type scale; and 10 closed-ended questions with response options (Creswell, 2005).

Survey research designs are procedures in quantitative research that permits administering a survey to a sample or to an entire population (Creswell, 2005). This study included a cross-sectional survey design to collect data and examine current attitudes, practices, and opinions (Creswell, 2005). In this procedure, survey researchers can collect quantitative, numbered data by using questionnaires, or one-on-one interviews (Creswell, 2005). Researchers can statistically analyze the data to describe trends about responses to questions and to test research questions or hypothesis (Creswell, 2005). Researchers interpret the meaning of the data by relating results of the statistical test back to past research. To design a survey researchers go through the process of sampling from a population, data collection through interviews or using questionnaires, creating instruments for data collection, and obtaining a high response from participants (Creswell, 2005).

The research study used a web-based survey that was sent to 100 students and 100 teachers. The response rate usually varies with the returning and processing of questionnaires. The electronic questionnaire is a survey instrument that allows collection of data (Creswell, 2005). For this study, an electronic questionnaire was used in the quantitative survey research, and available on the computer. Participants just needed to log onto a computer, locating the website to download the questionnaire. The participant completed the questionnaire and returned it as soon as possible.

Another way of collecting data is through one-on-one interviews for survey research. In one-on-one interviewing, individuals are first interviewed in the sample then responses to closed-ended questions are recorded. This process involves developing or finding an instrument and training the interviewer(s) in good interview procedures. With one-on-one interviews sensitive questions are asked, and it enables interviewees to ask questions or provide comments. Interviews lead to a high response rate because scheduling interviews is done in advance, and the sample participants will likely complete the interview. The anonymity of the participants with the one-on-one interviews is not under protection like the questionnaire (Creswell, 2005).

To design a good survey instrument is challenging, and a complex process. Checking if a survey instrument is available to measure variables, or possibly modifying an existing instrument can be done. If neither of these approaches will work designing an instrument is another option, and permission to use an existing survey instrument is not necessary. When designing an instrument for data collection the first step to take is write different types of questions, and "include personal, attitudinal, and behavioral questions;

sensitive questions, and closed and open-ended questions" (Creswell, 2005, p. 362). Second, use strategies for good question construction, and third, perform a pilot test of the questions. This will consist of administering the instrument to a small number of people, and based on feedback changes are made.

The proposed design accomplished the study goals and the optimum choice for this research because the survey helped to study, and analyze if the benefits of ballroom dancing exist according to participants. In survey research, numerous people are asked questions in a short period of time (Neuman, 2003). The collection of valuable data leading to answers is possible with a survey. With the electronic survey collecting data was easy and quick. Researchers should keep in mind that not everyone has access to computers. Data is collected on an instrument to measure, observe, or document quantitative data (Creswell, 2005). With the use of websites and the Internet in the 21st century, collecting electronic data in quantitative research is very popular.

In this study, the design of the Likert-type scale determined how many participants agree or disagree with statements on a 5-point scale (Pelosi et al., 2001). Results of this quantitative study were presented in the form of tables. To accomplish goals in the study giving meaning to numbers, and explaining how the numbers relate to the hypothesis is possible. The survey used a scale in which participants give a number that pertains to personal views (Roberts, 2004). Survey participants made choices that most represented personal opinions, decided on number one for definitely, and up to number five for not at all (Sargent, Hill, & Morrison, 2006).

The closed-ended questions made it possible to accomplish the study goals because participants had answer options. In this study, a comparison between groups involved inferential analysis with hypothesis testing, and steps included identifying the null hypothesis, collecting of data, and others (Creswell, 2005). The hypothesis testing procedure helped in making decisions about results. In the null hypothesis a prediction is made, and stated as "no difference," like in the hypothesis for this study (Creswell, 2005). For example, there is no difference in terms of experiencing better health through ballroom dancing for students and teachers at the Arthur Murray organization.

Population

The population of teachers and students was over the age of 18 at the Arthur Murray's ballroom dance schools. Ballroom dance teachers and students are individuals from all walks of life and backgrounds. Students enroll on ballroom dance programs to learn social dancing, and may compete at DanceSport championships. For example, Howard S. Siegel, MD, and his wife Judith, enjoy dancing in showcases, traveling, or teaching students (Creamer, 2005). It was about 15 years ago that Judith Siegel took the first dance lesson by purchasing the introductory package (Creamer, 2005). Creamer (2005) indicated that Howard and Judith have fun and enjoy ballroom dancing together as students, and instructors of ballroom dancing. Both know the gold level of ballroom dancing which is for exhibition and competitive dancers (Creamer, 2005). The Siegel's teach aboard cruise ships, teach large groups of couples, and teach private lessons to couples in preparation for a first dance at a wedding reception (Creamer, 2005). This couple began as students and later taught professionally.

Creswell (2005) indicated that in a population a group of individuals possesses one characteristic that distinguishes the group from other groups. In survey research, selecting a large sample is necessary so that the sample exhibits similar characteristics to the target population (Creswell, 2005). According to Creswell (2005), a population is a group of individuals with the same characteristic. For example, all teachers at the ballroom dance schools would make up the population of teachers, and all students at the ballroom dance schools would make up the population of students (Creswell, 2005). The population could either be small or large, and researchers make a decision on what group to study.

The population in this study was the population of teachers and students at the Arthur Murray's ballroom dance school over the age of 18. At a more specific level, a researcher does not always study the entire population because of the inability to identify individuals or obtain lists of names when mailing out the questionnaire (Creswell, 2005). Instead researchers target a population to study, and obtain a list of individuals in the population. From this target population the selection of a sample is necessary. At the most specific level, researchers study a sample from the target population (Creswell, 2005).

The sample size chosen in this study was approximately 100 students and 100 teachers, and in Fowler's sample size table is the confidence interval standard (95% confidence interval) (Creswell, 2005). Creswell (2005) indicated that for a sample of 100, 10% is the error rate, and 10% under the 50/50 column has values which are the amount of sampling error to tolerate (Creswell, 2005). For example, 4% meaning that

only 4% of the time the sample mean will differ from the true population mean (Creswell, 2005). Selecting an error of 10% for this study is 10 out of 100 times (Creswell, 2005).

Sampling

To design a survey it would be necessary to go through the process of sampling from a population (Creswell, 2005). In this study, participants in the pilot study helped validate the survey instrument. The sample of choice consisted of 100 students and 100 teachers for the main study.

Sampling Error Formula

Calculating the sampling error formula is necessary to determine the size of the sample (Creswell, 2005). This calculation is based on the change or proportion that, "The sample will be evenly divided on a question, sampling error, and a confidence interval" (Creswell, 2005, p. 582). The sampling error formula is based on stating the amount of sampling error to tolerate (Creswell, 2005). Stating the sampling error as a percent, for example, 10% of the time is the difference between the sample mean and the true population mean (Creswell, 2005). This error occurs because samples are randomly selected from the population, and may not represent the true characteristics of the population (Creswell, 2005).

For example, to identify the appropriate sample size first look at the last column (50/50) on Fowler's sample size table, go down the column to 4%, and look across the row and find that the sample size is 500 students. According to Creswell (2005), "this number based on the sample size formula, ensures that 95 out of 100 times (95% confidence interval) of the sample mean will have an equal chance (50/50 split) of

differentiating among the students 96% of the time (or an error of 4%)" (p. 583). To do calculations for this study, Fowler's table uses a confidence interval standard, a 95% confidence interval, which means that 95 out of 100 times the sample value will fall within the range of the population mean (Creswell, 2005). To divide the sample, select 50/50 as the "proportion of the sample with the characteristics" for estimates (Creswell, 2005, p. 582). The error rate of choice for this study is 10%. To identify the appropriate sample size for this study, look at the last column 50/50 by going down Fowler's table to 10 (10%), then look across the row and the ideal sample size is 100 (Creswell, 2005).

According to Creswell (2005), select as large a sample as possible in survey research so that the sample will exhibit similar characteristics to the target population (Creswell, 2005). To reduce sampling error, select as large a sample as possible from the population (Creswell, 2005). By selecting a larger sample the participants will represent the entire population and "reflect attitudes, beliefs, practices, and trends of the population" (Creswell, 2005, p. 359). The study administered surveys to both students and teachers at the Arthur Murray's ballroom dance schools in the U.S. For probability sampling in quantitative research the selection of individuals is done from the population representative of the population (Creswell, 2005). The sample was representative of the population making generalizations to the population of students and teachers (Creswell, 2005).

Snowball Sampling

For this study, there was snowball sampling, and for this type of sampling a researcher asks participants to help identify other individuals to become members of the

sample (Creswell, 2005). Creswell (2005) indicated that this form of sampling has the advantage of recruiting many participants for the study. According to Neuman (2003), this type of sampling is also known as network sampling. In snowball sampling each individual or unit has a connection with another directly or indirectly (Neuman, 2003). The snowball sampling method is used for the purpose of identifying and sampling or to select cases in a network (Neuman, 2003). The snowball sampling multistage technique starts with some people and spreads (Neuman, 2003). For example, three people are asked, and these three individuals name four additional personal friends (Neuman, 2003). The four friends name four more friends, and this continues until the result is a large number of people who take part in snowball sampling (Neuman, 2003). The sample consists of individuals tied to the original person directly or indirectly, and some may name the same person (Neuman, 2003).

Informed Consent

The proposed study collected information from both students and professional teachers of the Arthur Murray organization. Participants received an e-mail invitation to participate in the online survey. When these people clicked on the link to the online survey the welcome page included an informed consent. Prior to participating in the study and agreeing to complete the survey instrument, all participants acknowledged each were over the age of 18 and making an informed decision to participate in the study. Appendix A contains the informed consent form used with the survey instrument. Participation in the study was voluntary, as indicated on the informed consent form. Participants understand there are no foreseeable risks for participating, as identities and

responses remained confidential. Survey responses were confidential, and names were not disclosed to any outside party. Participants understood there might not be direct benefit for participating, but the possible benefit is the awareness and knowledge gained about prevention of illnesses and diseases through ballroom dance exercise. The participants could withdraw consent at any time without penalty or loss of benefit. Participants were asked to sign and date the informed consent form acknowledging each has read, understood the information, and willing to participate. The participants were asked to return the inform consent with the completed Health Issues and the Benefits of DanceSport survey instrument. Participants received a copy of the informed consent form.

Confidentiality

Research should be done ethically and legally to ensure the privacy and confidentially of the participants. The informed consent forms and survey instrument are kept in a lockbox at home. The username and password to enter the survey website was not shared with others. To ensure the confidentiality of the participants the online survey was administered from a secure website. Recording participant's names or any personal information was not necessary. To ensure that participants respond to the survey only once, the online survey website makes it possible to know who completes the survey. In the invitation e-mails and on the survey website the participants received information that responses to the online survey were confidential. All data collected from the online survey were on a personal laptop protected with a password for a minimum of three years.

Geographic Location

The main study investigated the opinions of students and teachers nationwide on health issues and benefits of ballroom dancing. The pilot study used a smaller sample of ballroom dancers in the Stockton, California area. The main study used a national sample of students and teachers from the Arthur Murray organization.

Data Collection

The study collected data in two phases. Using a flowchart can help to determine how the collection of data will occur. The first phase involved a pilot study to determine a valid set of measures than can be used to determine health issues and the benefits of ballroom dancing. The set of measures were used in the second phase of data collection, which is the main study conducted on a sample of 100 students and 100 teachers of the Arthur Murray organization.

The collection of data from a pilot study was done using an online survey tool. Email invitations were sent to participants with a link to the online survey. Although other data collection methods, such as one-on-one interviews, or mailed questionnaire could have been used to gather information, an online survey can be sent to many people, and allows participants to take the survey in a short time. Participants go to a website, complete the questionnaire, and return it before the due date (Creswell, 2005). The advantages of the online survey make it an appropriate choice for this quantitative study. The collection of data consisted of participants' experiences of better health through

ballroom dancing. Measuring participant's opinions was possible with closed-ended questions, and a Likert-type scale for the pilot study.

The collection of data for the main study was from a sample of 100 students and 100 teachers using an online survey tool with questions derived from the pilot study results. This online survey provided an advantage that other methods of data collection do not have. The main study survey used 10 closed-ended questions, and the Likert-type scale has eight questions to evaluate the respondent's opinions on health issues and the benefits of ballroom dancing.

Instrument and Selection Appropriateness

To design a good survey instrument is challenging, and a survey may be available to measure variables. Modifying an existing instrument or designing one is possible. Obtaining permission to use an existing instrument could be time-consuming. Participants were able to go to a website, locate the questionnaire, and send it back in a short period of time (Creswell, 2005). The electronic questionnaire can be sent to numerous people, and participants return the questionnaire with answers. With the survey participants take the survey in approximately 15 to 20 minutes, which is less time consuming. After completing the web-based survey participants return it before the due date. For this study, participants were sent reminders after the first week, second week, and after the third week all surveys were returned to end the data collection. The next step is to process the questionnaires individually. The pilot study used a sample of six ballroom dancers, and the collection of data for the main study was from a sample of 100

students and 100 teachers using the online survey tool with questions derived from the pilot study results.

The one-on-one interview for ballroom dance students and teachers was not first choice for conducting research on the topic of the study. One-on-one interviews are a form of survey data collection. For one-on-one interviewing in survey research, researchers interview an individual in the sample and record the responses to closed-ended questions. This process involves developing or finding an instrument and training the interviewer(s) in good interview procedures.

Survey researchers may collect quantitative data by either using a mailed questionnaire or one-on-one interviews (Creswell, 2005). A questionnaire is a form of survey design and an interview survey is a form on which answers are recorded given by participants in the study (Creswell, 2005). Though many applications of surveys exist the only two basic types of research surveys are cross-sectional and longitudinal (Creswell, 2005). Creswell (2005) indicated that the longitudinal design can study individuals over a period, and this design was not a preference for conducting research on health issues and the benefits of DanceSport research topic (Creswell, 2005). For this study, the survey design is the cross-sectional design, and appropriate for collecting data about current opinions, beliefs, or attitudes (Creswell, 2005).

With one-on-one interviewing in survey research, individuals in the sample are interviewed and participants' responses to closed-ended questions are recorded (Creswell, 2005). According to Creswell (2005), the process involves properly developing an instrument or finding an existing one, and training interviewers in good interview

procedures. Creswell (2005) explained, "This training involves learning how to provide instructions during the interview, maintaining confidentiality about the interview, asking the exact question on the interview guide, completing the interview within the time allocated, being courteous, and not interjecting personal opinions into the interview" (p. 361). With the one-on-one interviews asking sensitive questions is possible, and enables interviewees to ask questions or provide comments. Interviews lead to a high response rate because researchers schedule in advance.

Sample participants are likely to complete the interview, but with one-on-one interviews the anonymity of the participants is not under protection as in the questionnaire (Creswell, 2005). Because one-on-one interviews does not protect the anonymity of the participants this was a concern. The questionnaire is a personal choice and is a form in a survey design that participants in a study complete and return (Creswell, 2005). Participants pick answers to questions and give personal or demographic information (Creswell, 2005). An electronic questionnaire is the survey instrument for participants to collect data, and easily made available on the computer.

Instrument and Reliability

To improve reliability a pretest or pilot version of measure is used (Neuman, 2003). Start by developing one or more versions of a measure, and try it on participants before applying the final version in a hypothesis-testing situation. This may require writing drafts of a question before finalizing it, and will require some time and effort (Neuman, 2003). Test early versions by asking questions to determine if that version is clear or not clear (Neuman, 2003).

For good research the goal as a scientist is to have measures or observations that are reliable. Several factors result in obtaining unreliable data, and this includes when questions on an instrument are ambiguous and unclear; participants misinterpret questions or take a guess on tests (Creswell, 2005). Researchers can use one or more of five procedures available to examine the reliability of an instrument, such as the test-retest reliability procedure (Creswell, 2005). Creswell (2005) indicated that to determine this form of reliability, administer the test at two different times to the same people who participate at a sufficient time interval.

Pilot Study

Creswell (2005) explained that "triangulation is the process of corroborating evidence from different individuals, e.g., a principal and a student, types of data, e.g., observational field notes and interviews, or methods of data collection, e.g., documents and interviews, in descriptions and themes in qualitative research" (p. 600). When developing a survey and questions are not yet validated triangulation is necessary to establish reliability as well as running Cronbach alpha. According to Reynaldo and Santos (1999), "Cronbach's alpha is an index of reliability associated with the variation accounted for by the true score of the underlying construct" (p. 1). Reynaldo and Santos (1999) indicated that the construct is the hypothetical variable being measured.

Reliability measures can be possible with Cronbach's alpha, but it does not ensure unidimensionality (Cooper & Schindler, 2003). Cooper and Schindler (2003) explained that reliability measures, such as Cronbach's alpha, detects "whether the indicators of a construct have an acceptable fit on a single factor model" (p. 629). A test for construct

reliability to verify if indicators are consistent in measurement should be calculated (Cooper & Schindler, 2003).

Validity for the instrument is necessary, and difficult to achieve than reliability (Neuman, 2003). Neuman (2003) indicated that achieving absolute validity can never be done because constructs are abstract ideas. Validity is a process that will grow with the accumulation of evidence or all measurement does not have meaning (Neuman, 2003). According to Creswell (2005), the meaning for validity is that the individual's scores from an instrument clearly make sense, are meaningful, and makes it possible to draw good conclusions from the sample studied to the population.

In chapter 3 the process to validate the survey for this study included obtaining ballroom dancers to give feedback on the questionnaire. When developing a survey, triangulation of the questionnaire is necessary, such as giving the survey to the participant. Conducting a pilot study to validate the survey is necessary. When developing a survey there must be validation of the questions, and triangulation will establish reliability, and running a Cronbach's alpha for credibility. The Cronbach alpha reliability rating helped to demonstrate the strength, and degree of consistency of the research tool (Brinkerhoff, Ku, Glazewski, & Brush, 2002).

Cronbach alpha is used often to measure internal consistency with attitude instruments, such as Likert-type scales. In this pilot study, the survey consisted of 10 closed-ended questions, and a Likert-type scale with eight closed-ended questions was used to do a comparison between students and teachers of the Arthur Murray organization. To verify reliability of components (scales), alphas are calculated for scales

(Anderson, Plotnikoff, Raine, Cook, Smith, & Barrett, 2004). The higher the Cronbach alpha value the greater the internal consistency of the measure (Anderson et al., 2004).

The pilot study and main study has inferential analysis to include hypothesis testing, and the statistical test was a *t*-test to help compare groups. The *t*-test is an appropriate analysis to compare the means of the two groups, and it assessed if the means of two groups are statistically different (The T-Test, n.d.). The *t*-test is a statistical procedure to compare the means in two populations, it considers the number of units in the sample, and is used to determine if the scores of two groups differ on a variable. The comparison is necessary to determine if Arthur Murray students or Arthur Murray teachers experience better health through ballroom dancing, which is the research question.

For this study, in creating the survey instrument a pilot test helped validate the survey. The pilot study survey was administered to a small sample group. The online pilot study survey will be administered to a small sample considered to be knowledgeable in health and ballroom dancing. Because of involvement in dance, these participants would be an appropriate sample to explore the preliminary measures in the pilot study. Participants of the pilot survey helped to confirm the content validity of the survey instrument. The results of the pilot study were used to identify a valid set of measures to be used in the main study. Questions that the respondents of the pilot study determined to be valid for measuring health issues and the benefits of ballroom dancing were in the main study survey instrument. Validation was done in chapter 4 after receiving permission from the Institutional Review Board (IRB).

The pilot study survey consisted of 10 closed-ended questions with response options, and a 5-point Likert-type scale to record respondents' opinions. The Cronbach alpha helped measure internal consistency in this Likert-type scale. In this study, the 5-point Likert-type scale ranges from *definitely* to *not at all.* A pilot test allowed changes in the instrument based on the feedback from the people who completed the survey (Creswell, 2005). The participants in the pilot test help by commenting on the survey, and this permits changes to the survey. The people who participate in the pilot test provide written comments directly on the survey, and after the pilot test researchers can modify or change the survey to reflect those concerns (Creswell, 2005). Participants' who provide feedback on the questionnaire are not in the final sample for the study (Creswell, 2005).

Developing a good survey instrument is challenging, but a pilot test will validate it (Lobell, 2009). A pre-test, and a post-test was done with the same population of different age groups, for example, 18 to 24, 25 to 35, 36 to 45, 46 to 55, 56 years, and above. For this study, the individuals for the pilot test consisted of three men and three women knowledgeable in the area of health, and who enjoy ballroom dancing. The pilot and main study included personal characteristics of individuals with demographic questions relating to DanceSport organizations, gender, age, marital status, and employment status.

After the pilot test, the survey was sent to a national sample of 100 students and 100 teachers of the Arthur Murray's organization to do a comparison. The reason for not including the pilot group in the final sample for the study is that the pilot group provides

feedback on the questionnaire (Creswell, 2005). In exchange for the student's cooperation, participants received a complimentary ballroom dance lesson and practice party.

Validity

According to Cooper and Schindler (2003), validity is referring to the extent to which a test measures what a researcher wants to measure. Two major forms of validity are external and internal (Cooper & Schindler, 2003). The characteristics of a good measurement tool is "an accurate counter or indicator of what we are interested in measuring" (Cooper & Schindler, 2003, p. 231). Researchers must be careful to obtain the necessary response with the approach and questions. To obtain the necessary response, explain in advance that names will remain anonymous, along with a brief explanation of the survey. After gathering information protect privacy by not disclosing the participants identity (Neuman, 2003). For higher response, it would be wise to inform participants about the protection of privacy (Neuman, 2003). Neuman (2003) explained to keep information with a participant's name confidential, or keep this information secret from the public. Respondents may refuse to take part at any time (Neuman, 2003). Asking questions must be done in a sensitive way, telling individuals about protection of privacy, and treating respondents with respect will often result in a high response.

Internal Validity

Internal validity is the ability of a research instrument to measure what it should measure (Cooper & Schindler, 2003). When errors do not exist internal to the research project's design this would be internal validity (Neuman, 2003). Internal validity is usually in experimental research to discuss errors that occur or alternative explanations of results that happen even with attempts to institute controls (Neuman, 2003). Neuman (2003) indicated high internal validity is referring to few errors, and low internal validity refers to more errors are possible. Internal validity threats are occurrences that could affect the experimental procedures and participants experiences. Internal validity threats include changes to the instrument, and participants deciding to change views during the study (Creswell, 2003).

External Validity

The external validity of research findings is referring to the "data's ability to be generalized across persons, settings, and times" (Cooper & Schindler, 2003, p. 231). Neuman (2003) indicated that external validity is used in experimental research. To generalize research results from a certain setting and a small group to a broad range of people and settings is known as external validity (Neuman, 2003). External validity threats occur when incorrectly making inferences from the data to additional groups, settings, or future circumstances (Creswell, 2003). The three main threats to external validity are interaction and treatment of selection, setting, and history (Creswell, 2003).

Creswell (2003) indicated that certain methods reduce the threats for this study. To reduce the threat of selection, the participation in the study was made easy for the entire population by sending a link to the survey via the participant's personal e-mail. Using e-mail addresses is how the questionnaire was sent to participants. For reducing the threat of setting, avoiding any inferences to settings outside of the pilot group associated with the community centers is necessary. People from the centers received an invitation to assist in validating the research instrument (Creswell, 2003). In this study, the pilot group was people knowledgeable in the area of health and ballroom dancing from the community centers. The pilot of the instrument included three males and three females not members of the population. History is referring to generalizing the findings of the study to past or future situations (Creswell, 2003).

Data Analysis

The null hypothesis to be examined in the current research inquiry states that no differences exist in terms of experiencing better health through ballroom dancing for students' and teachers at the Arthur Murray organization. The alternative hypothesis states that there is a difference in terms of experiencing better health through ballroom dancing for students and teachers at the Arthur Murray organization. There would probably be a difference because current literature, some studies, and personal communication point to certain people experiencing better health through ballroom dancing.

The Health Issues and the Benefits of DanceSport Survey pilot study helped to gather numerical data, and in the main study collecting data was done using a 5-point

Likert-type scale (Sargent et al., 2006). For this study, the data was summarized in tables (Sargent et al., 2006). To measure participant's opinions on health and ballroom dancing, students and teachers ranked statements in the Likert-type scale near the "Definitely" category to indicate that ballroom dancing has health benefits or ranked closer to "Not At All." For each of the statements, using the Likert-type scale, the calculation of the mean, standard deviation, high score, and low score is done (Sargent et al., 2006). The mean score for each statement revealed the average score (or central tendency of the distribution), the standard deviation demonstrates how dispersed the scores are from the mean (Sargent et al., 2006). Finally, ranking scores in order from high to low is done for each question. The high score and the low score help to understand the range of the scores found for each question on the Likert-type scale survey. The descriptive statistics test includes measures of central tendency (mean, median, and mode), and measures of variability (the range of scores, variance, and standard deviation) (Creswell, 2005). This quantitative study reported all three measures. The descriptive statistics helped to analyze the descriptive questions, and results from the scores of the sample were used to draw inferences or make a prediction about the population (Creswell, 2005).

Gathering data for analysis from the survey is possible with the closed-ended questions. The closed-ended questions ask participants, both students and teachers, about achieving better health through ballroom dancing. Response options in the closed-ended question are about evaluating health, describing capacities to perform ballroom dances during lessons, and describing if subject was ever diagnosed with an illness or disease. Closed-ended questions also include age category, gender, employment status, and marital status.

In this quantitative study, inferential analysis included hypothesis testing (Creswell, 2005). Inferential analysis is used to compare groups or relate variables. Hypothesis testing helped in making decisions about results by comparing an observed value of a sample with a population value to decide if no difference or relationship exists between values (Creswell, 2005). Statistically analyzing the data is possible to describe trends about responses to questions and to test research questions or hypothesis (Creswell, 2005). Five steps in the hypothesis testing included identifying the null and alternative hypothesis; setting the level of significance for rejecting the null hypothesis; collecting data; computing the sample statistic, by using a computer program; and making a final decision about the null hypothesis (Cooper & Schindler, 2003; Creswell, 2005).

Testing of the hypothesis was done using a level of statistical significance of .05 (5 out of 100 times it is chance.). What this means is that five out of 100 times an extremely low probability value will be observed if the null hypothesis turns out to be true. This would be the maximum risk as a researcher to take that observed differences are chance (Creswell, 2005). In this quantitative study, the statistical test was a *t*-test. It helped to compare the means using a 95% confidence interval (Creswell, 2005). The confidence interval provides more information about the hypothesis test (Creswell, 2005). The sampling error formula identifies a confidence interval, such as a 95% confidence interval that indicates the upper and lower values likely to have the population mean (Creswell, 2005). The error rate of choice for this study was 10%. This number based on the sample size formula, makes sure that 95 out of 100 times (95% confidence interval)

of the sample mean has an equal chance (50/50 split) of differentiating among the students 90% of the time (or an error of 10%).

The sample included 100 students and 100 teachers, and the current study involved a search to compare the health of students and teachers who do ballroom dancing. The data analysis helped to determine if a positive relationship exists between the dependent variable (better health), and independent variable (ballroom dancing). The results of the data analysis could assist leaders of the Arthur Murray organization plan better dance programs for students, add to leadership knowledge and literature, and add to researchers' literature. This study on health could help make people aware of the importance of health and exercise through ballroom dancing.

Quantitative data analysis procedures have more data, analyzing, and interpreting the data must be done carefully. Creswell (2005) explained, "Preparing and organizing data for analysis in quantitative research, consists of scoring the data and creating a codebook, determining the types of scores to use, selecting a computer program, inputting the data into the program for analysis, and clearing the data" (p. 174). Creswell (2005) explained, "Before conducting an analysis of scores, researchers consider what types of scores to use from their instruments" (p. 176). After scoring the data, the next step is to select a computer program to analyze the data. After selecting the statistical program, entering the data from the instruments or checklists into the computer program is necessary (Creswell, 2005). When inputting the data transfer data from the responses on instruments to a computer file analysis (Creswell, 2005).

Creswell (2005) explained that the grid is like that of the spreadsheet table in Excel. The research also determines if errors or missing data exists (Creswell, 2005). Participants in the study may provide scores outside the range for variables or a researcher could have input wrong numbers into the data (Creswell, 2005). The data analysis technique and procedures are appropriate for answering the research questions because respondents have choices to select from. In this study, Microsoft Excel was used in the analysis of response statements from the benefits of DanceSport survey (Sargent et al., 2006).

Descriptive Statistic Test and Level of Confidence

For this study, the descriptive statistics test included measures of central tendency (mean, median, and mode), and measures of variability (The range of scores, variance, and standard deviation) (Creswell, 2005). According to Creswell (2005), descriptive statistics help researchers analyze descriptive questions, but to compare groups or to relate two or more variables, inferential analysis is necessary. Creswell (2005) explained that "the basic idea is to look at scores from a sample and use the results to draw inferences or make predictions about the population" (p. 186). The inferential analysis included hypothesis testing, and steps in hypothesis testing are identified (Creswell, 2005).

Descriptive statistics. Descriptive statistics is necessary in this study to indicate general tendencies in the data (mean, mode, median), and the spread of scores (variance, standard deviation, and range) (Creswell, 2005). Measures of central tendency are a summary of numbers that represent a single value in a distribution of scores, expressed as

"an average score (the mean), the middle of a set of scores (the median), or the most frequently occurring score (the mode)" (Creswell, 2005, p. 183). This quantitative study reports all three measures. For measures of variability, "variability indicates the spread of the scores in a distribution. Range, variance, and standard deviation all indicate the amount of variability in a distribution of scores" (Creswell, 2005, p. 184). This information helped in determining how dispersed the responses are to items on the instrument (Creswell, 2005).

Inferential analysis. This quantitative study had inferential analysis to include hypothesis testing (Creswell, 2005). Hypothesis testing is a procedure to make decisions about results "by comparing an observed value of a sample with a population value to determine if no difference or relationship exists between the values" (Creswell, 2005, p. 186). The five steps in hypothesis testing are identify the null and alternative hypothesis; set the level of significance or alpha level for rejecting the null hypothesis; collect data; compute the sample statistic, typically by using a computer program; and make a decision whether to reject or fail to reject the null hypothesis (Cooper & Schindler, 2003; Creswell, 2005).

Step one is identifying the null and alternative hypothesis. In the null hypothesis a prediction about the population is made and stated as "no difference" or as "no relation" or "no association" (Creswell, 2005, p. 186). The alternative hypothesis indicates a difference, and direction of the difference could be positive or negative (Creswell, 2005). In step two, a significance level is set. A significance level, or the alpha level, is a probability level that reflects the maximum risk to take that observed differences are

chance (Creswell, 2005). Creswell (2005) indicated that it will typically be set at .01 (1 out of 100 times the sample score is chance) or. 05 (5 out of 100 times it is chance). Creswell (2005) explained that, "This means that 1 out of 100 times (or 5 out of 100 times) an extremely low probability value will actually be observed if the null hypothesis is true" (p. 188). The area on the normal curve for low probability values provided the null hypothesis is true is known as the critical region (Creswell, 2005).

In step three, collecting the data is done by administering an instrument. Coding the data, and inputting into a computer file to analyze is necessary (Creswell, 2005). In step four, using a computer program a researcher computes a statistic or value and makes a decision about whether it falls inside or outside of the critical region (Creswell, 2005). This computed value is known as the *p*-value and is the probability *(p)* "that a result could have been produced by chance if the null hypothesis were true" (Creswell, 2005, p. 188). Creswell (2005) noted that the difficult part is to determine what statistical test to use. Creswell (2005) added common statistical tests are used in education research.

Asking seven questions to arrive at the appropriate statistical test can help. First question relates to the comparison of groups or relating variables in hypothesis or research questions (Creswell, 2005). In this study, the answer is yes for comparing groups.

Second question relates to the total independent variables in one research question or hypothesis. Independent variables could be one or more than one in the questions or hypothesis (Creswell, 2005). The answer for this study is one independent variable.

Third question relates to the total amount of dependent variables in one research question or hypothesis. Typically researchers will use one dependent variable or multiple dependent variables. If multiple dependent variables are used each variable is analyzed one at a time (Creswell, 2005). The answer for this study would be one dependent variable.

Fourth question relates to statistically controlling for covariates in the analysis of the research question or hypothesis (Creswell, 2005). This would be referring to variables that a "researcher controls for using statistics and that relate to the dependent variable, but do not relate to the independent variable" (Creswell, 2005, p. 590). Covariates are independent variables that confound the analysis and controlling statistically is necessary (Creswell, 2005). The answer for this study is zero covariates.

Fifth question relates to the independent variable(s) to measure; the two types of scales are categorical (nominal and ordinal), and continuous (interval/ratio). Researchers need to specify whether the variable is nominal, ordinal, or scaled if using SPSS (Creswell, 2005). The answer for this study is categorical independent variable.

Sixth question relates to the dependent variable(s) and measuring it. As with independent variables the dependent variables are identified as categorical or continuous variables (Creswell, 2005). Answer for this study is continuous dependent variable.

Seventh question relates to the scores on the variable, and if normally distributed. If scores were plotted on a graph researchers should be able to assume a normal curve (Creswell, 2005). Normal distribution or the normal probability curve is a distribution of

scores by the participants represented by a graph that approximates a bell-shaped curve (Creswell, 2005). Answer for this study is normal distribution.

In step five, researchers make a final decision about rejecting or not rejecting (Creswell, 2005). Creswell (2005) discusses in detail on how to decide what statistical test to use. In this study, the statistical test was a *t*-test. It helped compare the means using a 95% confidence interval (Creswell, 2005).

Confidence interval. According to Creswell (2005), confidence intervals provide more information about the hypothesis test. Creswell (2005) explained that, "A confidence interval or interval estimate is the range of upper and lower statistical values that is consistent with observed data and is likely to contain the actual population mean" (p. 193). Means are estimates of population values, and are not precise. Sample means indicate a point estimate of the population mean (Creswell, 2005). Researcher should "consider a range of values around the sample mean that it could take given the multiple collection of samples" (Creswell, 2005, p. 194). Creswell (2005) explained that the sampling error formula identifies a confidence interval, such as a 95% confidence interval, indicating the upper and lower values likely to have the population mean. To identify the appropriate sample size researchers should first look at the last column (50/50) on Fowler's sample size table, go down the column to, for example, 10% (error rate) or other percent amount of choice, then look across the row to find what the sample size is.

The error rate of choice for this study was 10%. Creswell (2005) explained that this number based on the sample size formula, makes sure that 95 out of 100 times (95%

confidence interval) of the sample mean has an equal chance (50/50 split) of differentiating among the students 90% of the time (or an error of 10%). To make the right calculations, this study includes the Fowler's table using a confidence interval standard. A 95% confidence interval means 95 out of 100 times the sample value falls within the range of the population mean (Creswell, 2005). To divide the sample, investigators usually choose 50/50 as the proportion of the sample with the characteristics the investigator is trying to estimate (Creswell, 2005).

Organization and Clarity

In analyzing the research design of choice the questionnaire is for the purpose of learning more about the health benefits of DanceSport for both professional and amateur ballroom dancers. The survey is to further understand the health issues of Americans, and the positive effects of DanceSport. Researchers make sure questions flow smoothly, and include the two key principles for good survey questions (Neuman, 2003). Principles of good question writing requires a researcher to weave questions in a way that together flow smoothly (Neuman, 2003).

Two key principles for good survey question is to not confuse, and keep respondents point of view in mind. Researchers will have valid and reliable measures with good survey questions (Neuman, 2003). Neuman (2003) explained that writing questions is an art, and requires patience, creativity, skill, and practice. The respondents should understand the questions to give meaningful answers (Neuman, 2003).

In conducting research, it seems that many people in the U.S. have health issues. These health issues are life threatening, such as cancer, diabetes, strokes, osteoporosis, and many others. Living a healthier lifestyle will prevent diseases, and allow people to enjoy life. This research questionnaire is a contribution for today's and future generations, and benefits the existing knowledge in the field. The need exists to understand illnesses, and how ballroom dancing improves health.

Chapter Summary

To summarize chapter 3 reinstates the purpose statement. The purpose of the quantitative study is to determine if people experience better health (dependent variable) by taking ballroom dancing (independent variable) at the Arthur Murray ballroom dance schools. This chapter gives the reasons for the research method and design appropriateness. The research method is a quantitative method for the study. The reasoning behind the quantitative research and why the method is suitable is that with a survey people will understand health issues in the U.S., and the positive effects of DanceSport.

The research design and its appropriateness for this study is the right choice because a cross-sectional survey helped answer the research questions in the study. The design accomplished the study goals and the optimum choice for this research. The Likert-type scale and the closed-ended questions in the questionnaire helped gather data for the study. The population in this study is the population of students and teachers over the age of 18 at the Arthur Murray franchised ballroom dance schools.

The sample of choice consisted of 100 students and 100 teachers to make a comparison. The anonymity of participants is under protection with the questionnaire, and a cover letter was sent to obtain participants for the survey (Creswell, 2005). The design helped provide answers, and using the data to support or reject the theories was possible (Neuman, 2003). For good research the goal is to have measures or observations that will be reliable. The pilot test with questions consists of administering the instrument to some people, and changes are possible because of feedback. Quantitative data analysis procedures contain more data, analyzing the data, and interpreting the data is carefully done (Creswell, 2005).

Chapter 4 has details of the study, explains the demographics, and characteristics of the sample. Preparing and organizing data for analysis in quantitative research includes, for example, scoring data, and creating a codebook (Creswell, 2005). The results of the pilot study and an explanation of how the validation of the survey was done is found in chapter 4.

CHAPTER 4: RESULTS

The study involved a comparison between students and teachers who experience better health by taking ballroom dancing at Arthur Murray's ballroom dance school. The following research questions formed the basis for the study:

How do students differ from teachers in terms of better health?

The hypothesis for the study is as follows:

1. Hypothesis H_0: There is no statistically significant difference in terms of the organization's treatment towards better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of the organization's treatment towards better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers.

2. Hypothesis H_0: There is no statistically significant difference in terms of overall better health (dependent variable) through ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of overall better health (dependent variable) through ballroom dancing (independent variable) for students and teachers.

3. Hypothesis H_0: There is no statistically significant difference in terms of performance capacity for better health (dependent variable) through ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of performance capacity for better health (dependent variable) through ballroom dancing (independent variable) for students and teachers.

4. Hypothesis H_0: There is no statistically significant difference in terms of being diagnosed with better health (dependent variable) while taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of being diagnosed with better health (dependent variable) while taking ballroom dancing (independent variable) for students and teachers.

5. Hypothesis H_0: There is no statistically significant difference in terms of feeling better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of feeling better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers.

6. Hypothesis H_0: There is no statistically significant difference in terms of DanceSport Membership toward better health (dependent variable) by doing ballroom dancing (independent variable) for students and teachers.

Hypothesis H_A: There is a statistically significant difference in terms of DanceSport Membership toward better health (dependent variable) by doing ballroom dancing (independent variable) for students and teachers.

7. Hypothesis H_0: There is no statistically significant difference in terms of a gender's better health (dependent variable) by taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of a gender's better health (dependent variable) by taking ballroom dancing (independent variable) for students and teachers.

8. Hypothesis H_0: There is no statistically significant difference in terms of better health (dependent variable) during employment status when taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of better health (dependent variable) during employment status when taking ballroom dancing (independent variable) for students and teachers.

9. Hypothesis H_0: There is no statistically significant difference in terms of better health (dependent variable) during marital status when taking ballroom dancing (independent variable) for students and teachers.

   Hypothesis H_A: There is a statistically significant difference in terms of better health (dependent variable) during marital status when taking ballroom dancing (independent variable) for students and teachers.

10. Hypothesis H_0: There is no statistically significant difference in terms of better health (dependent variable) in an age group when taking ballroom dancing (independent variable) for students and teachers.

    Hypothesis H_A: There is a statistically significant difference in terms of health (dependent variable) in an age group when taking ballroom dancing (independent variable) for students and teachers.

Chapter 4 includes a discussion on the data collected, the results of the statistical procedures, and data analysis. Chapter 4 also includes a discussion on the description of the data collection process, organization of data analysis, findings of the analysis, and a summary.

Data Collection Procedure

Emails asking for support in completing a pilot study went to six ballroom dancers. The pilot study was done using an online survey tool. The collection of data for the main study was from a sample of 100 students and 100 teachers using an online survey website. The pilot test process involved three phases: The first email, followed by a reminder three days later, and a third email sent to nonrespondents after one week as a reminder. Personal telephone discussions, and e-mails with the contact person from the Stockton community centers and Arthur Murray's in the U.S. emphasized the importance of participating.

For the main study the survey process involved four phases: The first e-mail, followed by a reminder one week later, a third e-mail two weeks after, and a fourth

reminder after three weeks. Also, telephone discussions with Arthur Murray contacts across the U.S., and emails with owners and managers from each Arthur Murray school emphasized the importance of a high return rate. Arthur Murray schools which were selected for the study included California, New Jersey, Nevada, Pennsylvania, Colorado, Kentucky, Arizona, Hawaii, Kansas, Maryland, Minnesota, New Mexico, Rhode Island, Virginia, Washington, Wisconsin, Massachusetts, New York, Illinois, Michigan, Florida, and North Carolina.

For the pilot study, two participants responded relatively quickly to the email by returning the completed questionnaire. After the second email two more returned the questionnaire, and the third email resulted in two more returned questionnaire. For the main study, participants consisted of 22 Arthur Murray schools in the U.S. of which 15 instructors, and 46 students responded. Some schools did not respond to any of the emails sent, and there were a total of 61 participants in the research study. Sixty-one completed surveys were collected, giving the main study a final response rate of 61%.

Once the main study survey instrument was published on a secure website known as Constant Contact a unique URL that linked participants directly to the survey was provided as well. These participants were instructors as well as managers and owners of the schools. This was used instead of invitation to individual participants consisting of students and instructors. This was done because some Arthur Murray schools preferred to deal with students and instructors directly, and did not want to share email addresses with outside parties. A copy of this initial invitation to the survey is located in Appendix

C. The survey remained active for a total of 25 days past the date the reminder email was sent to collect additional responses. The survey was closed to further responses.

Pilot Test

The initial survey was pilot tested to determine the respondents' understanding of the Likert-type questions, and to find out any potential problems with the items in the questionnaire. Validity and reliability tests were done on the survey tool. The Health Issues and the Benefits of DanceSport Questionnaire contains eight items in the Likert-type scale, and 10 closed-ended questions. The pilot study participants included three females, and three males from the community centers in Stockton and Manteca, California. The questionnaire was pilot tested to refine it before the main study. The pilot participants were asked if sentences and words were clear, if questions made sense, and if sentences took an excessive time to complete the questionnaire. The pilot participants commented on the length of the survey and level of comprehensiveness in addressing the goals and purpose of the study. Feedback allows for refinement of the items if necessary.

Internal validity was performed in the survey instrument by participants knowledgeable in the area of health and dance similar to the targeted population for the main study. These pilot study participants were not in the main study. The objective of the internal validity was to ensure the instrument measured what researchers intend to measure, and that it was a well-designed instrument.

The pilot-test participants were contacted in advance to secure participation. Instruction and a link to the online questionnaire were e-mailed to the group of participants for the pilot test. Items were discussed and the Likert-type response scale was clear to participants based on input after reviewing the survey instrument. The results of the pilot test were used to help identify a valid set of measures that were used in the main study. The online survey instrument is found in Appendix B.

Cronbach's alpha was used as the measure for reliability, and is the standard approach for surveys with Likert-type scales to record participant's responses. The reliability of the survey instrument is summarized in Table 1. The reliability coefficient of .70 or higher is considered acceptable in social science research. The alpha coefficient for the eight items was .918. Reliability measures, such as Cronbach alpha detects if the indicators of a construct have a good fit on a single factor model (Cooper & Schindler, 2003). The *SPSS Statistical 19* software package was used to run Cronbach's alpha reliability. SPSS provides a measurement of internal consistency (reliability) of the test items known as Cronbach alpha. The higher the correlation among items, the greater the alpha tends to be. Cronbach's alpha increases when the correlations between items increase. A total of eight items were administered to six participants, and scores for each of the items were reported. First the data from the pilot test was coded and entered on SPSS. This was to assess the degree of internal consistency among a set of indicators, such as items in a questionnaire.

The data was collected and entered on SPSS following step-by-step commands for calculating Cronbach alpha. After running the analysis Cronbach's alpha was

calculated for eight variables (items) to provide information about the internal consistency of the eight items. The eight items were designed to measure the same construct, and the alpha that resulted is interpretable. Examining the results is next after running Cronbach's alpha for the eight items. The overall alpha for the eight items on better health can be seen, and the Cronbach alpha is .918 which is very high and indicates a strong internal consistency among the eight items. Essentially this means that respondents who tended to select high scores for one item also tended to select high scores for the others. Respondents who selected a low score for one item also selected a low score for the other better health items.

Data Analysis and Results

Data analysis involved both descriptive and inferential statistics. The Health Issues and the Benefits of DanceSport Questionnaire posed 18 items to the ballroom dance students and instructors. For the Likert-type scale statements the Cronbach alpha was .918. The eight items were designed to measure the same construct. Descriptive statistics included the average scores for each of the eight better health items in the Likert-type scale that included the minimum, maximum, mean, and standard deviation. Inferential statistics included a *t*-test for 10 closed-ended questions.

When taking the online survey respondents were to provide honest opinions to eight statements on health. The rating scale went from 1 being "Definitely" to 5 "Not At All." The completed survey instruments were recorded on Microsoft Excel and *SPSS Statistical 19* software. Students and instructors of the Arthur Murray ballroom dance schools located in the U.S. provided answers to the online questionnaire. Included in

Tables 1 to 6 are a description of findings related to the research question and hypothesis. The research question is: How do students differ from teachers in terms of better health? Table 1 describes findings related to the survey's internal reliability and consistency. Table 2 describes findings on descriptive statistics. Table 3 describes findings on group statistics. Table 4 describes findings on the independent samples test, and Levene's test for equality of variances. Table 5 describes findings on the independent samples test, and T-test for equality of means. Table 6 describes findings on the independent samples test, T-test for equality of means, and 95% confidence interval.

Table 1

Health Issues and the Benefits of DanceSport Survey Internal Reliability/Consistency

Health Issues and the Benefits of DanceSport

Constructs	Cronbach's Alpha	Survey Questions	Cronbach Alpha if Item Deleted
Better Health	.918	BH1	.903
		BH2	.917
		BH3	.899
		BH4	.919
		BH5	.914
		BH6	.903
		BH7	.898
		BH8	.905

Note: All the survey questions were evaluated and determined to be reliable.

Descriptive Statistics

The following descriptive statistics of the study is presented here:

Table 2

Descriptive Statistics

	N	Minimum	Maximum	Mean	Standard Deviation
Better Health 1	61	1	4	1.41	.692
Better Health 2	61	1	4	1.36	.659
Better Health 3	61	1	4	1.77	.920
Better Health 4	61	1	4	1.30	.558
Better Health 5	61	1	4	1.20	.440
Better Health 6	61	1	4	1.31	.672
Better Health 7	61	1	4	1.26	.575
Better Health 8	61	1	4	1.85	1.093
Valid N (listwise)					

Note: Statements were rated from 1 “Definitely” to 5 “Not At All.”

Measures of central tendency are a summary of numbers representing a single value in a distribution of scores expressed as an average score or referred to as the mean (Creswell, 2005). Creswell (2005) explained that range, variance, and standard deviation indicated the amount of variability in a distribution of scores. This information helps to

determine how dispersed responses are to items on the survey instrument (Creswell, 2005).

Table 2 has the descriptive statistics for eight opinion statements pertaining to health. The statements were rated in terms of preference from 1 being "Definitely" to 5 "Not At All." Participants rated statement 5 (M = 1.20) "Taking ballroom dancing makes people feel better emotionally, mentally, and physically," was the highest agreement. Participants agreed that ballroom dancing can make a difference to emotional, mental, and physical health. Statement 7 "Taking ballroom dancing lowers stress levels" was the second highest agreement with (M = 1.26). Third was statement 4 (M =1.30) "Taking ballroom dancing increases self-esteem." Fourth was statement 6 (M = 1.31) "Taking ballroom dancing improves overall health." Fifth was statement 2 (M = 1.36) "Taking ballroom dancing makes people feel energetic and physically fit." Sixth was statement 1 (M = 1.41) "Taking dancing is better exercise." The lowest average scores were for statement 3 and 8. Statement 3 (M = 1.77) "Taking ballroom dancing makes people healthier through exercising and eating properly." Statement 8 (M = 1.85) "Taking ballroom dancing helps prevent illnesses and diseases." For Statement 8 participants seem to not be aware of all the benefits of DanceSport, but did agree that there were emotional, mental, and physical benefits. Statement 5 and Statement 8 indicate the participant's awareness of the benefits of DanceSport, but lack the awareness of confirmed studies on the benefits of DanceSport.

Table 3

Group Statistics

Group	N	Mean	Standard Deviation	Standard Error Mean
Organization				
Group 1	15	2.00	.926	.239
Group 2	46	2.61	1.719	.253
Overall Health				
Group 1	15	1.07	.258	.067
Group 2	46	1.20	.453	.067
Capacity				
Group 1	15	1.00	.000	.000
Group 2	46	1.15	.420	.062
Diagnosed				
Group 1	15	6.87	.516	.133
Group 2	46	6.59	1.359	.200
Feel Healthier				
Group 1	15	1.00	.000	.000
Group 2	46	1.83	1.060	.156
Membership				
Group 1	15	4.07	1.668	.431
Group 2	46	4.67	1.117	.165
Gender				
Group 1	15	1.60	.507	.131

Group 2	46	1.83	.383	.057
Employment				
Group 1	15	2.27	.458	.118
Group 2	46	2.07	.490	.072
Marital Status				
Group 1	15	3.33	1.234	.319
Group 2	46	2.28	1.361	.201
Age				
Group 1	15	2.13	1.187	.307
Group 2	46	3.67	1.230	.181

Note: The data represented 22 Arthur Murray Schools in the U.S.

Table 3 gives the descriptive statistics for each of the two groups as defined by the grouping variable. In this table are 15 people in group 1 (N), with an average of 2.00 for organization, and a standard deviation of .926. Organization was the variable name used in the codebook for the first question in the questionnaire (see Appendix B). Question one asks how the participant would evaluate the Arthur Murray organization in their ability to treat individual health problems during ballroom dance lessons. There are 46 people in group 2 (N), with an average of 2.61 for organization with a standard deviation of 1.719. The last column gives the standard error of the mean for each of the two groups.

For overall health instructors in group 1 has an average of 1.07 with a standard deviation of .258, and standard error of the mean is .067. The overall health for students in group 2 has an average of 1.20 and standard deviation of .453. In the questionnaire,

question 2 asks how the participant evaluated overall health. For capacity, group 1 has a mean of 1.00 with a standard deviation of .000, and group 2 has an average of 1.15 with a standard deviation of .420. The third question in the questionnaire asks to describe the capacity to perform ballroom dancing during lessons. Some participants were diagnosed with illnesses and diseases, and the average for group 1 consisting of instructors was 6.87 with a .516 standard deviation, and group 2 consisting of students had an average of 6.59 with a standard deviation of 1.359. For variable name, feel healthier, group 1 had a mean of 1.00, and a standard deviation of .000. Group 2 had an average of 1.83 with a standard deviation of 1.060. The question here asks if the participant or the spouse feels healthier as a result of ballroom dance lessons.

For DanceSport memberships choices included NDCA, USAD, WDC, IDSF, None, and Other. In group 1 for membership the mean is 4.07, with a standard deviation is 1.668, and group 2 had an average of 4.67 with a standard deviation of 1.117. The gender in group 1 had an average mean of 1.60 with a standard deviation of .507. Group 2 had a mean of 1.83 with a standard deviation of 3.83. Another variable name was listed in the codebook as employment. The question here was whether participants were retired, employed full time, or employed part time. The mean for group 1 consisting of instructors was 2.27 with a standard deviation of .458. Group 2 with students has an average mean of 2.07 with a standard deviation of .490. Marital status for group 1 had a mean of 3.33 with a standard deviation of 1.234, and group 2 had a mean of 2.28 with a standard deviation of 1.361. To answer this question answers included married, divorced, widowed, or never been married. Age categories included 18 to 24, 25 to 35, 36 to 45, 46 to 55, 56 and above. The mean for instructors in group 1 was 2.13 with a standard

deviation of 1.187, and group 2 for students had an average of 3.67 with a standard deviation of 1.230.

Table 4

Independent Samples Test: Levene's Test for Equality of Variances

		Levene's Test for Equality of Variances	
		F	Sig.
Organization	Equal variances assumed	27.562	.000
	Equal variances not assumed		
Overall Health	Equal variances assumed	5.138	.027
	Equal variances not assumed		
Capacity	Equal variances assumed	9.918	.003
	Equal variances not assumed		
Diagnosed	Equal variances assumed	7.412	.009
	Equal variances not assumed		
Feel Healthier	Equal variances assumed	165.212	.000
	Equal variances not assumed		
Membership	Equal variances assumed	7.062	.010

	Equal variances not assumed		
Gender	Equal variances assumed	8.384	.005
	Equal variances not assumed		
Employment	Equal variances assumed	.983	.326
	Equal variances not assumed		
Marital Status	Equal variances assumed	3.848	.055
	Equal variances not assumed		
Age	Equal variances assumed	1.094	.300
	Equal variances not assumed		

Note: This represents 22 Arthur Murray studios in the U.S.

Table 4 provides information on organization, overall health, capacity, diagnosed, feel healthier, membership, gender, employment, marital status, and age with equal variances assumed. The "Levene's Test for Equality of Variances" column provides information to make a decision on the null hypothesis. The decision has to be made to either reject the null hypothesis, or fail to reject the null hypothesis.

In Table 4, the columns labeled "Levene's Test for Equality of Variances" tell us whether an assumption of the *t*-test has been met. The *t*-test assumes the variability of groups 1 and 2 is approximately equal. If this assumption is not met, a special form of the *t*-test has to be used. Take a look at the column labeled "Sig." under the heading

"Levene's Test for Equality of Variance." For Organization the significance (p value) of Levene's test is .000. If this value is less than or equal to the α level for the test which is usually .05, reject the null hypothesis that the variability of group 1 and 2 is equal implying the variances are unequal. If the p value is less than or equal to the α level use the bottom row of the output which is labeled "Equal variances not assumed" when the p value is greater than α level, use the middle row of the output where the row is labeled "Equal variance assumed."

For Organizational Treatment, .000 is (less than) α, so assume the variances are not equal, and use the bottom row of the output. Overall Health significance (p value) of Levene's test is .027 (less than); Capacity .003 (less than); Diagnosed significance (p value) of Levene's test is .009 (less than); Feel Healthier is .000 (less than); Membership the significance (p value) of Levene's test is .010 (less than); Gender is .005 (less than); Employment is .326 (greater than); Marital Status .055 (less than); and Age is .300 (greater than). If the value is less than or equal to the α level for the test which usually .05, reject the null hypothesis that the variability of group 1 and 2 is equal implying the variances are unequal. If the p value is less than or equal to the α level use the bottom row of the output, and see the row labeled "Equal variance not assumed." Notice that Employment .326 is (greater than); Age is .300 (greater than), and because it is not less than or equal to .05, we fail to reject the null hypothesis.

Table 5

Independent Samples Test: T-test for Equality of Means

	T-test for Equality of Means			
	t	df	Sig. (2-tailed)	Mean Difference
Organizational Treatment				
Equal variances assumed	-1.306	59	.197	-.609
Equal variances not assumed	-1.747	45.339	.087	-.609
Overall Health				
Equal variances assumed	-1.045	59	.300	-.129
Equal variances not assumed	-1.367	42.807	.179	-.129
Capacity				
Equal variances assumed	-1.396	59	.168	-.152
Equal variances not assumed	-2.458	45.000	.018	-.152
Diagnosed				
Equal variances assumed	.775	59	.441	.280
Equal variances not assumed	1.162	57.466	.250	.280
Feel Healthier				
Equal variances assumed	-3.000	59	.004	-.826
Equal variances not assumed	-5.283	45.000	.000	-.826
Membership				
Equal variances assumed	-1.609	59	.113	-.607
Equal variances not assumed	-1.317	18.271	.204	-.607
Gender				

Equal variances assumed	-1.828	59	.073	-.226
Equal variances not assumed	-1.585	19.490	.129	-.226
Employment				
Equal variances assumed	1.404	59	.166	.201
Equal variances not assumed	1.454	25.318	.158	.201
Marital Status				
Equal variances assumed	2.653	59	.010	1.051
Equal variances not assumed	2.790	26.022	.010	1.051
Age				
Equal variances assumed	-4.246	59	.000	-1.541
Equal variances not assumed	-4.325	24.583	.000	-1.541

Note: This represents 22 Arthur Murray studios in the U.S.

In Table 5, the column labeled "*t*" gives the observed or calculated *t* value. For example, Organization equal variances not assumed is -1.747. The sign of *t* is ignored for a two tailed *t*-test. The column labeled "df" gives the degrees of freedom associated with the *t*- test. Looking at "Equal variances not assumed" for Organization there are 45.339 degrees of freedom. The column labeled "Sig. (2-tailed)" gives the two-tailed p value associated with the test. For Organization because the p value is .087 use the bottom row of the output which is the row labeled "Equal variance not assumed."

For Organizational Treatment the p value is (.087) greater than, Overall Health (.179) greater than, Diagnosed (.250) greater than, Membership (.204) greater than, Gender (.129) greater than, Employment (.166) greater than. These are not less than or equal to .05 so we fail to reject the null hypothesis. Hypothesis H_0: There is no

statistically significant difference in terms of the organization's treatment towards better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers. Hypothesis H_0: There is no statistically significant difference in terms of overall better health (dependent variable) through ballroom dancing (independent variable) for students and teachers. Hypothesis H_0: There is no statistically significant difference in terms of being diagnosed with better health (dependent variable) while taking ballroom dancing (independent variable) for students and teachers. Hypothesis H_0: There is no statistically significant difference in terms of DanceSport Membership toward better health (dependent variable) by doing ballroom dancing (independent variable) for students and teachers. Hypothesis H_0: There is no statistically significant difference in terms of a gender's better health (dependent variable) by taking ballroom dancing (independent variable) for students and teachers. Hypothesis H_0: There is no statistically significant difference in terms of better health (dependent variable) during employment status when taking ballroom dancing (independent variable) for students and teachers.

For Capacity the p value is (.018) less than, Feel Healthier p value is (.000) less than, Marital Status p value is (.010) less than, and Age p value is (.000) is less than .05 so we reject the null hypothesis. Hypothesis H_A: There is a statistically significant difference in terms of performance capacity for better health (dependent variable) through ballroom dancing (independent variable) for students and teachers. Hypothesis H_A: There is a statistically significant difference in terms of feeling better health (dependent variable) when taking ballroom dancing (independent variable) for students and teachers. Hypothesis H_A: There is a statistically significant difference in terms of

better health (dependent variable) during marital status when taking ballroom dancing (independent variable) for students and teachers. Hypothesis H_A: There is a statistically significant difference in terms of better health (dependent variable) in an age group when taking ballroom dancing (independent variable) for students and teachers. This implies we observe a difference between groups 1 and 2 in terms of the groups capacity to perform during lessons, how the spouse or self feel healthier as a result of ballroom dancing, marital status, and age.

Table 6

Independent Samples Test: T-Test for Equality of Means, 95% Confidence Interval

	t-test for Equality of Means		
	95% Confidence Interval of the Difference		
	Std. Error Difference	Lower	Upper
Organizational Treatment			
Equal variances assumed	.466	-1.541	-.324
Equal variances not assumed	.348	-1.310	.093
Overall Health			
Equal variances assumed	.123	-.376	.118
Equal variances not assumed	.094	-.319	.061

Capacity			
Equal variances assumed	.109	-.370	.066
Equal variances not assumed	.062	-.277	-.027
Diagnosed			
Equal variances assumed	.361	-.442	1.002
Equal variances not assumed	.241	-.202	.762
Feel Healthier			
Equal variances assumed	.275	-1.377	-.275
Equal variances not assumed	.156	-1.141	-.511
Membership			
Equal variances assumed	.377	-1.362	.148
Equal variances not assumed	.461	-1.575	.360
Gender			
Equal variances assumed	.124	-.474	.021
Equal variances not assumed	.143	.524	.072
Employment			
Equal variances assumed	.143	-.086	.489

Equal variances not assumed	.139	-.084	.487
Marital Status			
Equal variances assumed	.396	.258	1.843
Equal variances not assumed	.377	.277	1.825
Age			
Equal variances assumed	.363	-2.267	-.815
Equal variances not assumed	.356	-2.275	-.806

Note: This represents 22 Arthur Murray studios in the U.S.

In Table 6, the Standard Error Difference is the estimated standard deviation between the sample means. In the 95% Confidence Interval of the Difference there are the lower and upper bound of the confidence interval for the mean difference. A confidence interval for the mean specifies a range of values in which the unknown population, such as the mean might be.

Summary

The purpose of this quantitative study was to explore, identify, and confirm the health benefits of ballroom dancing. A preliminary pilot study used a quantitative approach to identify a valid set of measures. The pilot study tested these measures using ballroom dancers as participants. Questions respondents of the pilot study determined to be valid for measuring health issues and benefits of ballroom dancing were in the main study survey instrument.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

Chapter 4 contained the results of the statistical procedures, and an analysis of the data with respect to the research question and hypothesis in this study. In a comparison of the descriptive statistics, the participating students and instructors had the highest agreement to statement 5, "Taking ballroom dancing makes people feel better emotionally, mentally, and physically." The lowest agreement was to statement 8 "Taking ballroom dancing helps prevent illness and diseases." The inferential statistics of the *t* test for both the students and the instructors resulted in that organization, overall health, diagnosed, membership, gender, employment were not less than or equal to .05 so we fail to reject the null hypothesis.

Capacity, feel healthier, marital status, and age were less than .05 so we rejected the null hypothesis. This implies a difference is observed between students and instructors. The difference would be in terms of the capacity to perform during lessons, how the spouse or self feel healthier as a result of taking ballroom dancing, marital status, and age.

Chapter 5 contains a synopsis of the quantitative research study. A discussion of the conclusions is based on the analysis of the findings in relation to the purpose of the study. The purpose of the study was to determine through statistical comparison any significant differences among students and teachers who experience better health as a result of taking ballroom dancing. This chapter includes recommendations for future research related to this study.

Synopsis of Study

The quantitative cross-sectional survey study involved an evaluation of the measurable outcomes using students and teacher surveys to examine how ballroom dancing affects health. Organizations in the U.S. need a better understanding on how to deal with illnesses and diseases. Physical inactivity accounted for an estimated $75 billion in medical costs in the U.S. alone (Keller, 2007). To stay competitive in the global economy organizational leaders should encourage employees to develop healthy habits resulting in the cutting down of health care costs (Lauer, 2002; Moore, 2008). Organizational leaders can plan health promotion programs that include exercise through, for example, aerobic classes, yoga, and ballroom dancing. Taking ballroom dancing could result in a long and healthy life. Studies to date support and confirm that ballroom dancing make people healthier. Some theories of why people do ballroom dancing is that fun exercise is possible, ballroom dancing has many health benefits, and people want to remain healthy (Matthew, 2001; O'Rourke & Sullivan, 2003).

The study involved a quantitative cross-sectional survey research approach. A total of 22 Arthur Murray ballroom dance schools were asked to take the Health Issues and the Benefits of DanceSport survey. The sample for the study consisted of 100 students and 100 instructors; total number of participants were 46 students, and 15 instructors. The data analysis included both descriptive and inferential statistics. The descriptive statistics included the minimum, maximum, mean, and standard deviation for eight statements on health. Inferential statistics included a *t*-test to compare students and instructors. Inferential analysis is used to compare groups or relate variables. Hypothesis

testing helped in making a decision about results by comparing an observed value of a sample with a population value to decide if no difference or relationship exists between values (Creswell, 2005). The cross-sectional design was appropriate for collecting data about opinions (Creswell, 2005).

The results of this study should be used as a guide for further research in this area. A limitation in this cross-sectional survey design is that the collection of data is done at one point and data is on present views. The defined period to conduct the study required good communication through email and telephone. Participants agreed to cooperate and complete an online questionnaire. The study involved analyzing the participant's opinions. Participation in the study determined the participation rate. The next section includes a presentation and interpretation of the conclusion drawn from the literature review, methodology, and analysis of the data.

Conclusion

The study involved a quantitative comparative study between students and instructors of the Arthur Murray organization based on who experienced better health through ballroom dancing. The cross-sectional survey helped provide answers by using data to support or reject the theory. Collecting data through a questionnaire during the survey made it possible to analyze data. The study revealed the opinions and experiences of the participants, and investigated the effects of ballroom dancing on a diverse group consisting of students and instructors. This section includes a discussion of the conclusions based on the analysis of the findings in relation to the purpose of the study, research question, and the hypothesis.

Research Question: How do students differ from teachers in terms of better health?

The students and instructors rated eight statements with statement 5, "Taking ballroom dancing makes people feel better emotionally, mentally, and physically," having the highest agreement between both groups. For Statement 7 "Taking ballroom dancing lowers stress levels" was the second highest agreement between group 1 and 2. Students and instructors believe that "Taking ballroom dancing increases self-esteem." Based on the lowest average score for statement 8 from participants it seems that students and instructors are not aware of the confirmed studies on the benefits of ballroom dancing on health.

For how the students and instructors evaluated the Arthur Murray organization in their ability to treat individuals health problems during dance lessons; how the students or instructors evaluated their overall health; how students and instructors were diagnosed with illnesses and diseases; membership to a DanceSport organization; gender of the students and instructors; and whether the students and instructors were retired or employed full-time or part-time, we failed to reject the null hypothesis.

Questions asked the students and teacher about the capacity to perform ballroom dances during a lesson; if the participants or spouses feel healthier as a result of ballroom dance lessons; marital status included married, divorced, widowed, or never been married; and age had groups listed as 18 to 24, 25 to 35, 36 to 45, 46 to 55, to include 56 and above. For capacity, feel healthier, marital status, and age we rejected the null hypothesis.

Implications

The comparison between students and instructors is a clue that people are turning to ballroom dancing not just to socialize but for healing (Hanna, 2006). Studies confirm that ballroom dancing is beneficial. Some theories as to why people take ballroom dancing is to reduce stress and increase self-esteem. In the Likert-type scale students and instructors scored statement 5 "Taking ballroom dancing makes people feel better emotionally, mentally, and physically" the highest. Students and instructors also believe that taking ballroom dancing improves health, and makes people feel energetic and physically fit. The theories in the literature review explain why people take ballroom dancing, and responses from participants in this study point to these theories.

The collection of interrelated concepts guided the research study. The theories explained why the problem exists, and served as a basis for conducting the study. The survey helped provide answers by using data to support or reject the hypothesis (Neuman, 2003). The data supported the hypothesis in this research study. The findings in this research study confirmed that people experience better health through ballroom dancing at the Arthur Murray organization.

In the questionnaire, for the first question the null hypothesis was that there is no statistically significant difference in terms of the organizational treatment toward better health. The data on organizational treatment suggests that both students and teachers in most cases thought the Arthur Murray organization did a good to excellent job in treating individual's health problems during ballroom dance lessons. This positive experience can lead to better health.

For question two the participants evaluated overall health, and it was determined that there is no statistically difference in terms of overall better health through ballroom dancing. The data suggests that ballroom dancing benefits both teachers and students even when mildly physically impaired with minor illnesses for seven students and one teacher, and up to moderate physically impaired with one or more illnesses and diseases for one student.

For question three participants had to describe the capacity to perform dances during lessons, and in the comparison it was determined there is a statistically significant difference in terms of performance capacity for better health through ballroom dancing for students and teachers. The data suggests that both students and teachers had different capacities, but for five students with good capacity needing some help, and one student with moderate capacity each was willing to exercise by doing ballroom dancing.

Question four was on illnesses or diseases, and if the participant was diagnosed with either diabetes, cancer, Parkinson's, osteoporosis, arthritis, heart disease, none, or other. It was determined in the comparison that there is no statistically significant difference in terms of being diagnosed with better health while taking ballroom dancing for students and teachers. The data suggests that students and teachers were aware of illnesses and diseases, and had made a conscious decision to take ballroom dancing to improve health as in the theories in the literature review.

Question five had to do with whether the participant or the spouse was feeling healthier as a result of ballroom dance lessons. It was determined in the comparison that there is a statistically significant difference in terms of feeling better health when taking

ballroom dancing for students and teachers. The possible answers were self, spouse, both or neither. The data suggests that although there was a difference between teachers and students, with 28 students who answered self, 16 students answered both, and all 15 teachers answered self, all participants knew there were health benefits to taking ballroom dancing.

Question six was on whether participants were members of a DanceSport organization. It was determined in the comparison that there is no statistically significant difference in terms of DanceSport membership toward better health by doing ballroom dancing for students and teachers. The data suggests that both students and teachers found dance benefits in hobby dancing or participation in competitions, for those who were members of DanceSport organizations, such as three teachers and two students with the NDCA, three students with the USAD, and one teacher with the WDC.

Question seven was on participant's gender, and it was determined in the comparison that there is no statistically significant difference in terms of a gender's better health by taking ballroom dancing for students and teachers. The data suggests that six males and nine females who are teachers, with eight males and 38 females who are students, both teachers and students benefited from taking ballroom dancing at Arthur Murray's ballroom dance schools.

Question eight was on whether the participant was retired, employed, widowed, or never been married. It was determined in the comparison that there is no statistically significant difference in terms of better health during employment (status) when taking ballroom dancing for students and teachers. The data suggests that both students and

teachers were able to enjoy ballroom dancing whether employed or not. Students were able to balance work with a fun hobby, with 4 students retired, 35 employed full-time, and seven employed part-time. Teachers found pleasure in working at an Arthur Murray school with 11 full-time workers, and four part-time workers.

Question nine was on marital status, and it was determined in a comparison that there is a statistically significant difference in terms of better health and marital status when taking ballroom dancing for students and teachers. For students, 22 were married, four were divorced, five were widowed, and 15 never been married. For teachers, three were married, one was widowed, and 11 never been married. The data suggests that although there was a difference in marital status for groups 1 and 2 both experienced better health when taking ballroom dancing.

Question ten was on age category, and it was determined in the comparison that there is a statistically significant difference in terms of better health in age groups when taking ballroom dancing for students and teacher. The data suggests although there was a difference in ages for students and teachers both experienced better health when taking ballroom dancing. There was one student in the 18 to 24 age group, 11 in the 24 to 35 age group, five in the 36 to 45 age group, 14 in the 45 to 55 age group, and 15 in the 56 plus group. For teachers, five were in the 18 to 24 age group, six were in the 25 to 35 age group, two were in the 36 to 45 age group, one was in the 46 to 55 age group, and one was in the 56 plus age group.

Recommendation

The student's capacity to perform ballroom dancing during lessons could present a challenge for an instructor. The study results indicate that there is not a difference between students and instructors on the questions on organizational treatment, overall health, diagnosed, membership, gender, and employment. There is a statistically significant difference for the questions on capacity, feeling healthier, marital status, and age. The results provided information about the capacity of students to perform during ballroom dances, and teachers should keep in mind the health issues students may have. It seems some students can perform physical activities without assistance, but at times may need some help. There might be a need for the leaders of the Arthur Murray studios to increase the awareness of a student's health condition before a dance lesson. Personalized dance programs can focus more on dancing and the student's health.

Based on the findings and conclusions of the study other recommendations are for students, teachers, and leaders of Arthur Murray to be more informed through confirmed studies about health and the benefits of exercise through ballroom dancing. Leaders of Arthur Murray should encourage staff to focus on health during a dance lesson. Leaders should develop more instructors who put emphasis on the importance of student's health. Leaders of Arthur Murray should communicate effectively with staff and students on dance and health.

More researchers should investigate illnesses and diseases, such depression, graves disease, endometriosis, Lou Gehrig's disease, schizophrenia, and how ballroom dancing can help. Understanding these diseases and illnesses is crucial for people and

organizations. Researchers should continue gathering useful information to guide improvement efforts by conducting surveys and requesting input from teachers and students. The research will assist leaders, and instructors of ballroom dance schools.

Future research could include a mixed method which would be appropriate. This method mixes both quantitative and qualitative data in a single study to further understand a research problem (Creswell, 2005). More research should be done between teachers and students capacity to perform ballroom dancing. The research can be a mixed method approach consisting of student questionnaires and teacher interviews. This would add to existing research on the topic of health and dance, and further investigate the health issues facing teachers and students. In this study, the question on capacity was whether teachers and students could perform physical activities, and students answered excellent, good, and moderate capacity. It seems that the teachers answered excellent in most cases, but when diagnosed with illnesses and diseases the null hypothesis was rejected. It was determined that there is no statistically significant difference in terms of being diagnosed with better health while taking ballroom dancing for students and teachers.

Out of 46 students, 17 had illnesses and diseases, such as back problems, torn cartilage, diabetes, arthritis, torn meniscus, high blood pressure, heart disease, bunions, graves disease, and osteoporosis. For teachers, diagnosed with illnesses and diseases 14 answered none of the above, except for one teacher who had arthritis. More research using interviews would reveal teachers health issues, and if teachers experience certain illnesses. It seems that although teachers experience, for example, arthritis that the

constant exercise through ballroom dancing does control the pain (Ward, 2008). Ballroom dancing provides a boost to people with arthritis (Delany & McVeigh, 1992; Ward, 2008). This supports the theory that better health is possible through ballroom dancing.

Organizations are realizing the benefits of incorporating ballroom dancing in health and wellness programs (Moss, 2008). Health care costs are on the rise by the billions, and leaders should invest and think creatively about having wellness programs (Keller, 2007). The process should begin with a positive attitude toward including ballroom dancing in support of promoting health within the organization. Improvement efforts should include collaboration with people within the organization.

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APPENDIX A

INFORMED CONSENT: PARTICIPANTS 18 YEARS OF AGE AND OLDER

Dear [Participant's Name],

My name is Theresa Velazquez and I am a student at the University of Phoenix working on a Doctor of Management in Organizational Leadership degree. I am conducting a research study entitled, "Health Issues and the Benefits of DanceSport." The purpose of the research study is to determine the health benefits students and teachers experience while ballroom dancing using a survey questionnaire to statistically analyze data. The quantitative study will test the theory by comparing individuals who experience better health, by taking ballroom dancing for students and teachers at the Arthur Murray ballroom dance schools.

Your participation involves a survey to compare students and teachers in relation to health and the benefits of ballroom dancing. In this survey, approximately 100 students and 100 teachers will be asked to complete a survey. The survey will be conducted through a secured online site which will prompt you to answer a questionnaire. The survey will take approximately 15 to 20 minutes to complete. Please return the survey within two weeks. Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, you can do so without penalty or loss of benefits to yourself. Your survey responses will be strictly confidential, and data from this research will be reported only in the aggregate. The results of the research study may be published, but your identity will remain confidential and your name will not be disclosed to any outside party. In this research, there are no foreseeable risks to you.

Although there may be no direct benefit to you, a possible benefit of your participation is the awareness and knowledge you will gain about prevention of illness and diseases through fun ballroom dance exercise. This research will be a contribution for today's and future generations of social hobby ballroom dancers, amateur competitive ballroom dancers, professional ballroom dance instructors, championship organizers, ballroom dance studio owners, and other researchers interested in this topic.

If you have any questions concerning the research study, please contact me at (209) 477-6713 and my email address is tvel12@excite.com

As a participant in this study, you should understand the following:

1. You may decline to participate or withdraw from participation at any time without consequences.
2. Your identity will be kept confidential.

3. Theresa Velazquez, the researcher, has thoroughly explained the parameters of the research study and all of your questions and concerns have been addressed.
4. Data will be stored in a secure and locked area. The data will be held for a period of three years, and then destroyed.
5. The research results will be used for publication.

"By signing this form you acknowledge that you understand the nature of the study, the potential risks to you as a participant, and the means by which your identity will be kept confidential. Your signature on this form also indicates that you are 18 years old or older and that you give your permission to voluntarily serve as a participant in the study described."

□ I CONSENT – You may use this as my electronic signature consenting to the information above.

□ I do NOT CONSENT.

APPENDIX B: SAMPLE QUESTIONNAIRE

Health Issues and The Benefits of DanceSport Survey

1. First of all, how would you evaluate the Arthur Murray organization in your area in their ability to treat individuals health problems during ballroom dance lessons?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Not sure

2. How would you evaluate your overall health? Would you say you are:

- ☐ In good physical health. (No significant illnesses or diseases.)
- ☐ Mildly physically impaired. (You have only minor illnesses.)
- ☐ Moderately physically impaired. (You have one or more illnesses or diseases which are either painful or which require substantial medical treatment.)
- ☐ Severely physically impaired. (You have one or more illnesses or diseases which are either severely painful or life threatening, or which require extensive medical treatment.)

3. Which of the following best describes your capacities to perform ballroom dances during lessons?

- ☐ You can perform physical activities during ballroom dance lessons. (Excellent capacity)
- ☐ You can perform physical activities during ballroom dance lessons without assistance, but need some help. (Good capacity)
- ☐ You regularly require some help with certain physical activities while ballroom dancing. (Moderate capacity)
- ☐ You need help during each lesson. (Severely impaired capacity)

4. Which of the following best describes you?

- ☐ I have been diagnosed by a doctor with diabetes.
- ☐ I have been diagnosed by a doctor with cancer.
- ☐ I have been diagnosed by a doctor with Parkinson's disease.
- ☐ I have been diagnosed by a doctor with osteoporosis.
- ☐ I have been diagnosed by a doctor with arthritis.
- ☐ I have been diagnosed by a doctor with heart disease.
- ☐ None of the above
- ☐ Other _____

5. Do you or your spouse feel healthier as a result of the ballroom dance lessons?

- ☐ Self
- ☐ Spouse
- ☐ Both
- ☐ Neither

6. Are you a member of a DanceSport organization?

- ☐ NDCA (National Dance Council of America)
- ☐ USAD (United States Dance Organization)
- ☐ WDC (World Dance Council)
- ☐ IDSF (International DanceSport Federation)

- [ ] None
- [ ] Other

7. Gender:

- [ ] Male
- [ ] Female

8. Employment status:

- [ ] Retired
- [ ] Employed full time
- [ ] Employed part time

9. Marital status:

- [ ] Married
- [ ] Divorced
- [ ] Widowed
- [ ] Never been married

10. Age category:

- [ ] 18 to 24
- [ ] 25 to 35
- [ ] 36 to 45
- [ ] 46 to 55

☐ 56+

11. Rate the following items in terms of preference, from 1 being "Definitely" to 5 "Not At All."

	Definitely				Not At All
Taking ballroom dancing is better exercise.	○	○	○	○	○
Taking ballroom dancing makes people feel energetic and physically fit.	○	○	○	○	○
Taking ballroom dancing makes people healthier through exercising and eating properly.	○	○	○	○	○
Taking ballroom dancing increases self-esteem.	○	○	○	○	○
Taking ballroom dancing makes people feel better emotionally, mentally, and physically.	○	○	○	○	○
Taking ballroom dancing improves overall health.	○	○	◉	○	○
Taking ballroom dancing lowers stress levels.	○	○	○	○	○
Taking ballroom dancing helps prevent illnesses and diseases.	○	○	○	○	○

APPENDIX C: INITIAL INVITATION EMAIL TO MAIN STUDY SURVEY

Dear Arthur Murray Students and Teachers,

The University of Phoenix and doctoral student, Theresa Velazquez, has been given approval to develop and distribute a survey entitled, "Health Issues and the Benefits of DanceSport. " The survey is for students and teachers of the Arthur Murray organization, and is completely voluntary and anonymous. The results of the survey will benefit many people concerned with health issues. When the survey is completed, the data from this research will be reported only in the aggregate.

Hoping and encouraging you to take the time to follow the link to the survey. Thank you in advance for your valuable input.

Regards,

Theresa Velazquez
(209) 477-6713

APPENDIX D:

FOLLOW-UP INVITATION AND EMAILTO MAIN STUDY SURVEY

Arthur Murray and doctoral student, Theresa Velazquez, of the University of Phoenix are collaborating on a survey entitled, "Health Issues and the Benefits of DanceSport." The results of the survey will be made available to Arthur Murray students and teachers. A high level of participation in the survey will assure that results are more reliable and valuable, and we encourage instructors and students to take the survey at:

Health Issues and The Benefits of DanceSport Survey (Instructors)

http://survey.constantcontact.com/survey/a07e37wbe1dghxis3ur/start

and

Health Issues and The Benefits of DanceSport Survey (Students)

http://survey.constantcontact.com/survey/a07e37tjq33ghvnh623/start

Your participation will take a few minutes, and your input will benefit many people concerned with health.

APPENDIX E: Letter of Collaboration Among Institutions

Date: 10/16/2010

To: Office of the Provost/Institutional Review Board

University of Phoenix

This letter acknowledges that the Arthur Murray's organization is collaborating with Ms. Theresa Velazquez enrolled in the Doctorate of Management and Organizational Leadership (DM) program at the University of Phoenix in conducting the proposed research. We understand the purpose of this research is to determine the health benefits students and teachers experience while ballroom dancing using a survey questionnaire to statistically analyze data, and will be conducted under the supervision of Dr. Thomas Griffin.

This project will be an integral part of our institution/agency and will be conducted as a collaborative effort and will be part of our curriculum/research/data/service delivery model.

Sincerely,

John Kimmins

John Kimmins, President

Arthur Murray, Inc.

APPENDIX F: PERMISSION TO USE PREMISES, NAMES, AND/OR SUBJECTS

John Kimmins, President

Arthur Murray International, Inc.

1077 Ponce De Leon Boulevard

Coral Gables, FL 33134

Dear Mr. Kimmins,

I will need your permission, approval, and signature to the following in order to use premises, names, and/or subjects for my study:

x I hereby authorize Theresa Velazquez , student of University of Phoenix, to use the premises (facility) to conduct a study entitled, "Health Issues and the Benefits of DanceSport."

x I hereby authorize Theresa Velazquez, student of University of Phoenix, to recruit subjects for participation in a study entitled, "Health Issues and the Benefits of DanceSport."

x I hereby authorize Theresa Velazquez, student of University of Phoenix, to use the name of the Arthur Murray organization identified above when publishing results from the study entitled, "Health Issues and the Benefits of DanceSport."

John Kimmins

Print

John Kimmins 10/25/10

Signature Date

John Kimmins, President

APPENDIX G: CODEBOOK OF VARIABLES

Variable Name	Code Description	Values
ID	Identification number assigned to each participant	
Groups	Group 1 and Group 2	1 = Instructors 2 = Students
Organizational Treatment	Evaluation of Arthur Murray's ability to treat individual	1 = Excellent 2 = Good 3 = Fair 4 = Poor 5 = Not Sure 9 = Missing
Overall Health	Evaluation of overall health	1 = Good health 2 = Mildly impaired 3 = Moderately impaired 4 = Severely impaired

		9 = Missing
Capacity	Capacity to perform ballroom dancing	1 = Excellent capacity 2 = Good capacity 3 = Moderate capacity 4 = Severely impaired capacity 9 = Missing
Diagnosed	Diagnosed with illness or disease	1 = Diabetes 2 = Cancer 3 = Parkinson's 4 = Osteoporosis 5 = Arthritis 6 = Heart 7 = None of the above 8 = Other 9 = Missing

Feel Healthier	You or spouse feel healthier	1 = Self 2 = Spouse 3 = Both 4 = Neither 9 = Missing
Membership	Member of DanceSport organization	1 = NDCA 2 = USAD 3 = WDC 4 = IDSF 5 = None 6 = Other 9 = Missing
Gender	Gender of participants	1 = Male 2 = Female 9 = Missing
Employment	Employment status	1 = Retired

		2 = Full time 3 = Part time 9 = Missing
Marital Status	Marital status of participants	1 = Married 2 = Divorced 3 = Widowed 4 = Never been married 9 = Missing
Age	Age category	1 = 18 to 24 2 = 25 to 35 3 = 36 to 45 4 = 46 to 55 5 = 56+ 9 = Missing
Better Health	Likert-type scale	1 = Definitely to 5 = Not At All