CONTINGENCY CONTRACTS IN PRIMARY CARE TO ENCourage
PHYSICAL ACTIVITY IN MEXICAN AMERICAN WOMEN

By

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ABSTRACT

Physical inactivity is a growing problem in the United States contributing to chronic health problems such as obesity, diabetes, hypercholesterolemia, hypertension, gall bladder disease, pulmonary problems, pregnancy complications, and psychological hazards. Mexican American women are less likely to participate in physical activity than their non-Hispanic white female counterparts or their Mexican male counterparts. Mexican American women also have a higher risk of cardiovascular disease than non-Hispanic white women of similar age and socioeconomic status. This lack of physical activity added to their high risk of cardiovascular disease puts them at extremely high risk for complex health problems.

The purpose of this project is to develop a contingency contract to be used in a primary care setting to encourage physical activity in Mexican American women. The contingency contract is based on Prochaska’s Transtheoretical model and Stages of Change theory. During the clinic visit, the benefits and possible barriers to participation in physical activity are discussed between the primary care provider and the patient. Then, the exact parameters of the contract are agreed upon by both parties. The contract serves as a motivator for patients to follow a physical activity regimen.
CHAPTER I

Problem Identification

Mexican American women (MA) do not participate in physical activity (PA) as often as their non-Hispanic white counterparts putting them at greater risk for chronic diseases such as cardiovascular disease and diabetes. Little is known about what motivates this group to participate in PA. Intervention programs to increase PA in this group have had mixed results with limited success. Therefore, purpose of this project is to develop a contingency contract tool for use by clinicians with MA women as a way to encourage PA.

Background

The Third National Health and Nutrition Examination Survey (NHANES III) found that MA women had higher prevalence rates than non-Hispanic white women for diabetes, higher blood pressure, higher BMI, and higher incidence of inactivity even after adjusting for age and socioeconomic status (1998). The CDC released data showing 57 % of Hispanic females grades 9-12 exercised in contrast to 65% of non-Hispanic white females in the same age group. All girls in all ethnic groups are less likely to exercise than boys (CDC). Crespo, Smit, Carter-Pokras, & Anderson (2001) found Mexican-born Spanish-speaking MAs living in the US had lower rates of PA during leisure time than their more English proficient counterparts.

In 1999-2002 the CDC reported that 61.7% of the general female population was overweight, affecting only 57% of non-Hispanic white females, but a noteworthy 71.4% of Hispanic females. Obesity has been linked to numerous other health problems

The benefits of PA include osteoporosis reduction, increasing functional status and reducing cardiovascular disease-related risk factors (Juarbe, Lipson, Turok, 2003). Berg (2003) also notes that some perimenopausal symptoms can be alleviated with PA. Non-medical benefits of PA are reduced stress, opportunities for social interaction, improved physical appearance, greater ability to participate in family activities, enhanced physical prowess, improved psychological outlook, and freedom from restrictive diets or medications (Caldwell, 1988). Healthy People 2010 lists PA as one of the leading indicators of health status. Participation in PA is one of the best indicators of good overall health.

Purpose

The purpose of this project was to review the extant literature on barriers to PA and attitudes about PA in MA women as a way to develop a culturally sensitive tool to assist primary care practitioners in guiding health promotion behavior of PA in MA women.
Significance

This project has significance to the health of MA women, to the U.S. economy, and to health care providers. Since the MA population of the US is growing and is now the largest ethnic minority group, the numbers of individuals affected by sedentary behavior and its morbidity sequelae, is highly significant. Mendelson (2002) reported the Latino population has increased by almost 60% since 1990 and the US Census Bureau 2001 also reported that MAs are the fastest growing minority group in the United States. Moreover, Latinos tend to be less educated, younger, unemployed, living in poverty, living in larger households, and living in more urban areas than non-Latinos in the US (Therrien & Ramirez, 2000). Many of these are risk factors for sedentary behavior and a higher incidence of chronic illness. Greater risk factors, limited PA, and a ballooning population mean greater cost to the public to treat emerging chronic diseases of this ethnic group.

Diabetes costs in the US 2002 were $132 billion per year, which included medical costs and costs including work loss, premature death, and disability (Wood, 2003). It is known that greater PA is linked to lower prevalence of Type 2 diabetes. Nurses are well positioned to encourage MA women to increase their PA via educating about benefits and barriers that can be overcome (Wood). Nurses in advanced practice may suggest PA as a prescription for health promotion and disease risk reduction. Together, these professionals can have profound impact on attitudes about PA and its many benefits. As well, nurses may suggest ways to incorporate PA in MA women's busy lives. Nurses work closely with patients and are therefore strategically well placed to positively affect
change in patients. Although many health care professionals do not speak Spanish, Spanish language reading materials may be helpful with non-English speakers. This is important because less acculturated MAs, as indicated by their language preference, are more at risk for inactivity. Any intervention program should target this particular population.

Definitions

*Acculturation* is the merging of two cultures caused by an extended period of contact (Crespo et al., 2001). It has also been described as a bi-dimensional process where individuals learn or accept certain parts of the dominant cultural while keeping aspects of their own culture (Ayala et al., 2004).

*Exercise* is defined as leisure time planned activity outside of daily routine work like jogging, aerobics, swimming, biking, and intentional walking that is done to improve physical fitness. The term is often used interchangeably with the term physical activity performed to increase physical fitness (Gonzalez & Jirovec, 2000).

For this project *physical activity* (PA) is defined as any movement of body parts by skeletal muscles that cause energy expenditure. The focus will be on leisure-time intentional PA, however vigorous activities, such as gardening, vacuuming, and tending very young children will be recognized and encouraged.

*Self-efficacy* refers to whether one has the ability to and confidence in one’s self to complete a task regularly even in the face of distracting conditions (Laffrey & Asawachaisuwikrom, 2001). The term self-efficacy has its roots in social cognitive theory, developed by Bandura.
Summary

In this chapter, the problem of sedentary behavior in MA women was outlined as were the detrimental sequelae. The purpose of the project was presented. In the next chapter, the theoretical underpinnings for health promotion via increased PA will be outlined. Relevant literature will be reviewed.
CHAPTER II

Introduction

In this chapter, the theoretical framework for this project will be explained. Relevant literature will also be reviewed and critiqued and this will include literature related to contingency contracts.

Theoretical Framework

The theoretical framework for this project is Prochaska’s Transtheoretical Model and Stages of Change Theory. This theory has long been used in psychotherapy for persons with addictive behaviors. The model allows a person to move in and out of different stages, returning to previous stages as needed, allowing for a more cyclical and fluid concept of behavior change. This theory was developed by Dr. James Prochaska and Dr. Carlos DiClemente in 1979. At that time, there were nearly 130 distinct theories of psychotherapy. This encouraged Dr. Prochaska to pursue his own theory after he witnessed his father die from depression & alcoholism without being able to help him with any existing psychotherapy. To create this theory, he did a comparative analysis of major theories of the day including: helping relationships from the Rogerians; consciousness raising from the Freudian school; and contingency management from the Skinnerian tradition. Since he borrowed theories from many schools of thought, he named it the Transtheoretical Model (Brown, 1999).

The Transtheoretical Model has more recently been explored and tested as a tool for helping people change general health behaviors because poor patterns of eating and inactivity can mimic those of addictive behaviors. Studies first using this model focused
on smoking, but have expanded to include alcohol and substance abuse, eating disorders & obesity, delinquency, anxiety and panic disorders, HIV/AIDS prevention, medication compliance, unplanned pregnancy prevention, pregnancy and smoking, sedentary lifestyles, mammography screening, and sun exposure (Prochaska, Redding, Evers, 2002). The theory is even starting to be applied cross-culturally as well; one study in particular looked at the stage of change readiness for PA among family caregivers in Taiwan (Tung & Gillett, 2005). In another weight-loss treatment plan study, application of the Transtheoretical Model with MA women was supported (Surís et al., 1998). This theory is popular with behavioral change professionals because it makes it possible to utilize individual treatment plans by meeting the patient where they are. The emphasis in this model is on changing “for good,” for the rest of the individual’s life.

**Stages of Change**

The stages of change identified in the Transtheoretical Model grew out of ten processes of change observed in an empirical analysis of self-changers versus persons in professional treatment plans (Diclemente & Prochaska, 1982). There are currently 5 stages of change: precontemplation, contemplation, preparation, action, and maintenance.

*Precontemplation*

In the *precontemplation* stage the individual is not ready to begin thinking about behavioral change. Their knowledge may be limited or they may have attempted change many times in the past and have become burned out and dispirited. These individuals are usually labeled the “hard to reach” and “resistant” (Prochaska et al., 2002).
**Contemplation**

During the *contemplation* stage individuals have become more convinced that they should change behavior and have intentions to begin within the next 6 months. However, immediate action is not a possibility for this group. A tenuous balance exists between the pros and cons which can create ambivalence to change that may last for a long time (Prochaska et al., 2002).

**Preparation**

The *Preparation* stage is a time when individuals are ready to take immediate action within the coming month. A plan of action has been created with the intent of following through or the individual may already have taken action during the past year. Usually this is the group best suited for action oriented programs (Prochaska et al., 2002).

**Action**

The *Action* stage is characterized by individuals who have actually made visible changes during the last six months. The difference between this phase and the last phase is that the action performed in this phase meets criteria set up by professionals and scientists that is significant enough to reduce long term complications. In the previous phase individuals may have attempted changes, but ones that are not quite enough to make a real difference in his or her life (Prochaska et al., 2002).

**Maintenance**

In the *maintenance* phase individuals have become more confident in their abilities to continue their changes. They are attempting to prevent relapse, but do not use change processes as often as those in the previous stage. This phase is generally accepted
to endure from 6 months to 5 years since the inception of the change. The stage is considered to last until 5 years because relapse rates do not decrease to 7 percent until this time (Prochaska et al., 2002).

Termination

One stage that is not generally considered part of the stages of change model is the termination phase because this phase is not practical for the majority of individuals. This is the point where the individual does not have to worry about relapse at all, and total self-efficacy is reached. Even if they are bored, sad, depressed or stressed they do not need to worry about returning to their old behaviors, it is as if these behaviors never existed. This stage expects near perfection. For this reason, is not emphasized (Prochaska et al., 2002).

Decisional Balance, Self-efficacy, and Temptation

In addition to the 5 stages of change there are two other important concepts in the Transtheoretical Model, decisional balance, and self-efficacy. Decisional balance is the ability of a person to weigh the pros and cons of changing a behavior. Persons who are able to cope with high-stress/ risky situations without relapsing have a situation-specific confidence called self-efficacy (Prochaska et al., 2002). A person with strong self-efficacy can stave off the temptation to participate in unhealthy behaviors. These two concepts affect how and possibly why an individual moves from one stage to the other, and why they choose to use a certain process of change.
Processes of Change

Prochaska’s model also lays out ten processes of change which are described as any activities that help individuals modify their thinking, feeling or behavior (Brown, 1999). The 10 processes of change are consciousness raising, dramatic relief, self-reevaluation, environmental, reevaluation, self-liberation, helping relationships, counter conditioning, contingency management, stimulus control, and social liberation (Prochaska et al., 2002). One or all of the processes may be used over the course of a behavior change. Understanding these processes helps guide the development of intervention programs.

Consciousness raising is any process that individuals participates in that help them learn more about the benefits and barriers of a behavior problem. Interventions of particular importance in consciousness raising are media campaigns, confrontations, interpretations, and feedback (Prochaska et al., 2002).

Techniques that can move people emotionally like role playing, grieving, personal testimonies, psychodrama, and media campaigns are examples of dramatic relief. Any activity that attaches negative emotions to negative behaviors and positive emotions to positive behaviors is a form of this technique.

Self-reevaluation is a time when individuals examine their self-identity and reform it. Their identity may change, for example, from a beer and pizza person to a new healthy identity as the “walker”. Techniques to help people change their self-visualization are imagery, and values clarification (Prochaska et al., 2002).
Environmental reevaluation is a time that allows individuals to reflect on the impact of their actions on other people (Brown, 1999). How are these new changes going to affect their identity in society? What are societal norms and will other’s opinions affect this change?

Commitment to change and confidence in one’s ability to follow through with the change is considered self-liberation (Brown, 1999). In the future, the person occasionally must recommit to the change.

To support individuals through their change processes, helping relationships are often utilized. These relationships offer caring, openness, accountability, acceptance, trust, and modeling of appropriate behavior.

Counter conditioning requires individuals in the process of change to learn other behaviors to cope with their stressful situations instead of the old unhealthy ones. For example, when person A is stressed they would start snacking; now they are learning to go for a walk when they begin feeling stressed.

Social liberation is a time when the individual seeks out others who are making similar changes for the purpose of mutual encouragement. This change process is particularly important for oppressed groups of people, since they are more socially isolated. Empowerment procedures, advocacy, and appropriate policies can help create opportunities for health promotion for impoverished people, minority health promotion, and gay health promotion (Prochaska et al., 2002). Such policies might include, for example, allowing food stamps to be collected at farmer’s markets, limiting smoking to certain outside public areas, and mandating walking paths in new developments.
Providing consequences for certain behaviors is called *contingency management*. In the past *contingency management* has included punishments as a part of the consequences for participating in a particular behavior, however, it has been found that self-changers mainly use positive reinforcement and very few negative consequences. Activities that fall under the heading of *contingency management* are overt and covert reinforcements, group recognition and contingency contracts (Prochaska et al., 2002).

Project Relationship to Theoretical Framework

The purpose of this project is to focus on the use of contingency contracts, one aspect of Prochaska’s contingency management stage, as a way of reinforcing healthy behaviors. The contingency contract as introduced in the third chapter of this paper incorporates five of Prochaska’s ten processes of change: self-reevaluation, environmental reevaluation, self-liberation, helping relationships, and counter conditioning.

Through self-reevaluation, the patient will begin to see herself as a person who participates in physical activity. It slowly becomes part of her self-concept. Questions asked by the practitioner can help facilitate this self-concept transition like “How would you describe yourself as a person? What would you look like and act like, what would your week look like if you were a person engaging in planned physical activity?”

Environmental reevaluation challenges the client to go home and think about how her PA plan will affect her families and those closest to her. “What will be the hindering factors? How can I work my daily routine around this PA, how can I incorporate the PA? How will I get my family to participate with me? Will they support
me?” These questions also closely relate to helping relationships. It is of utmost importance for the women who sign a contract to find someone who is supportive of their decisions, someone who will hold them accountable and will care about them.

Self-liberation is an important part of contingency contracts because it requires the patient to continually be committing to the changes they have made, not just make a one time commitment. Practitioners must give positive praise to reinforce the patient’s commitments to her contract and to her behavior changes.

Finally, in order for behavioral changes to be long lasting, patients must learn counter conditioning. Practitioners must help patients envision fresh reactions to stressful situations that can replace old negative coping mechanisms so patients are able to maintain their behavior change.

Review of Literature

The review of literature will focus on what is known and not known about MA women related to PA; self-efficacy and its role in health promotion; barriers to PA participation; stages of change; perceptions of health; suggestions for intervention; and contingency contracts.

*Mexican American Women, Physical Activity and Health Problems*

Physical inactivity is an escalating problem in the United States. In particular, MA women participate in less PA than MA men and Anglo-American women. A study conducted by Duffy, Rossow, Hernandez (1996) found that MA women had lower scores of PA participation than their non-Hispanic white counterparts even with socioeconomic status removed, although MA women did exercise more than other minority women.
Wood (2003) studied a group of MAs with diabetes and found that 45% of women did not exercise compared to 28.8% of men. In another study looking at MAs over the age of 60, a majority was found to be mostly sedentary (Dergance et al., 2003). Bacardí-Gascón, Garay, and Jiménez-Cruz (2004) found that only 6% of Mexican women in Tijuana with type 2 diabetes did more than 150 minutes of PA weekly. Another large study that sampled women from rural and urban settings in Mexico found that most women of childbearing age hardly ever participate in sports (Hernández et al., 2003). The CDC reported leisure time PA for the general population (ages 18 and over) to be 30.6%, with rates of 33.9% for non-Hispanic whites, and only 24.3% for MAs.

The NHANES III (1998) study about ethnic and socioeconomic differences in risk factors for cardiovascular disease, found that even well educated MA women exercised less than their non-Hispanic white counterparts of equal socioeconomic status (SES). This is distressing since the study also found higher risk factors for cardiovascular disease in MA & African American (AA) women than non-Hispanic white women of equal age and SES. A similar study by USDHHS (1996) also found that this inactivity puts MA women at greater risk for chronic diseases than non-Hispanic white women. Another study by Sundquist and Winkleby (1999) takes the cultural distinction even further showing that MAs born in the US who speak Spanish have significantly higher risk factors for CVD than their Mexican born Spanish speaking counterparts who live in the US.

The number of obese MA women is nearly double the number of obese women in Mexico and other Latin American countries (Martorell, Khan, Hughes, Grummer-
Strawn, 1998). Ayala et al. (2004) found obesity rates for MA women of 39.9%. The obesity rate for women in Mexico is 25% (Martorell et al., 2003). The CDC (2006) reported that between 1999-2002, 34% of Hispanic American women were obese and 61% were overweight. Alan (1998) found that 47% of women were overweight. Obesity has been linked to numerous health problems including hyperlipidemia, diabetes mellitus, cardiovascular disease, hypertension, surgical risk, sleep apnea, pulmonary and renal problems, gall bladder problems and complications during pregnancy (Surís et al., 1998).

MA are at high risk for abdominal obesity and excess weight (Ayala et al., 2004). Martorell et al. (2003) also found MA to be more at risk for central obesity than non-Hispanic whites which has been positively linked to poor morbidity and mortality outcomes. For over 20 years, centralized upper body fat and early weight gain has been associated with early onset of diabetes in MA (Joos, Mueller, Hanis, Schull, 1984).

In a Finnish study, lower mortality rates were found in those who exercised at an intensity equivalent to vigorous walking and had less cardiovascular risk factors than their counterparts who had more sedentary lifestyles, even after genetics, familial factors, and gender variables were taken into account (Kujala, Kaprio, Sarna, & Koskenvuo, 1998). Since minority women generally have a higher risk of obesity and therefore higher risk for morbidity and mortality, these women would benefit the most from PA interventions designed to reduce these health risks (Manson et al., 1999). Important changes in body fat can be made through low-intensity PA programs even without dietary modifications (Keller & Treviño, 2001). This is clinically significant since dietary changes are much more difficult to make and maintain, therefore an exercise option may
prove to be more effective in providing long-term positive health changes (Keller & Treviño).

**Mexican American Women and Stages of Change**

In a study of behavior change for obesity, Surís et al. (1998) found that MA women in the precontemplation cluster tended to be less acculturated, less educated and had lower incomes than those in other stages of change. The study suggests that the more acculturated MA women become, the more they subscribe to the Anglo American ideal of thinness. Only 3 of 79 participants in this study fell within the precontemplation cluster in this particular study.

In a sample of employed MA women, Duffy et al. (1996) found that high scores of self-efficacy and social support making the women prime targets for action-oriented intervention related to health promotion activity. Laffrey (2000) also found that 49% of a group of older MA women fell within the action or maintenance phase regarding physical activity. Even 39% were within the contemplation and preparation stages. Only 13% were in the precontemplation phase and not interested in exercising.

Gonzalez & Jirovec (2001) studied an older group of Mexican women of lower-socioeconomic status and found that nearly 40% of these women were contemplating some type of PA even though they lived in a society where PA for this age group is not normative. Nearly half of the participants stated they would be interested in a PA program. Interestingly, there was only a weak correlation between stage of change and role commitments; in fact, the precontemplator non-believers had less time commitments in role responsibilities than those in other categories. This suggests that persons who
participate in more activities are more open to new PA, thus implying a difference in personality type.

In another group of MA immigrant women in southern CA of low socioeconomic, low-acculturation, and married status, 75% believed they should be exercising regularly even though only 22% were actually doing so (Juarbe et al., 2003).

**Self-efficacy**

Self-efficacy is the concept that one has a high degree of control over their behaviors and can positively affect change or believe that they are capable of continuing the behavior change even when competing factors are present (Laffrey & Asawachaisuwikrom, 2001). Duffy et al. (1996) found that self-efficacy was a significant predictor of health promotion behaviors in a group of employed MA women ages 19 to 70. Laffrey & Asawachaisuwikrom also found that self-efficacy was positively correlated with PA in a group of older MA women, though it did not predict daily activity. Self-efficacy predicted PA even after controlling for socioeconomic status. In a different study by Laffrey (2000), self-efficacy was again found to predict PA participation similar to another study with older MA type 2 diabetes patients (Wen, Shepherd, Parchman, 2004).

**Barriers and Non-participation**

In a study by Poston II et al. (2001) barriers to activity included time, PA skills, transportation, family, work obligations and childcare. Women of lower socio-economic status from Mexico named barriers as care of their husbands, care of grandchildren, commitments to church, children at home, and job responsibilities as barriers to PA in a
study conducted by Gonzalez & Jirovec (2001). Reasons these women gave for not participating in PA included dislike of PA, jealousy from their husband, perception that it wasted their time, feeling that it was not appropriate, and physically limiting conditions. In a study by Berg, Cromwell and Arnett (2002), the major barriers for a group of MA women in Arizona were cost and transportation.

Primary role of contemporary MA women include being the primary person to complete housework, being a parent, and caring for family (Mendelson, 2003). Other roles described in this study were household manager, money manager, and breadwinner. Sometimes in traditional MA culture, individual needs of the woman are considered subordinate to family stability and integrity. Therefore, MA women have honed skills at monitoring family member’s illnesses, even though they may not be in tune with illnesses within themselves. Mendelson (2003) concluded that practitioners must be critically aware of the conflicting responsibilities MA women face through their unique personal & family experiences. The cultural context for each individual cannot be overstressed. Berg et al. (2002) supported these findings describing that MA women will almost always take care of their families before taking care of themselves. These women also stated that church and caring for their grandchildren took up a lot of time and these commitments came before PA.

The significance of economic and environmental barriers was described in a study that measured rates of pap smears and mammography screening in older MA women. The researchers found that cultural barriers were important, but not as important as economic and environmental barriers (Fernandez-Esquer, Espinoza, Torres, Ramirez,
McAlister, 2003). Their community intervention program to promote breast and cervical cancer screening was not statistically significant in affecting pap-smear screenings, but was effective in promoting mammography screening.

Class and knowledge deficits were found to affect MA overweight status (Allan, 1998). MA and African American (AA) women of lower class tended to see their overweight problem as acceptable and didn’t have poor body images compared to a similar group of non-Hispanic white women. In a possible demonstration of knowledge deficit, the same group of AA and MA women didn’t think of their overweight status as a major health problem, nor did they view their overweight status as a disease. Therefore, overweight is not a motivator to increase PA in MA women (Allan, 1998). Also, MA did not attribute emotional problems to being overweight unlike AA and non-Hispanic white women. MA women in this study; who ranged from 19-56 years of age and had varied levels of economic status and education level, stated that no one talked about PA when they were younger.

Lafferey (2000) also discovered that MA lagged behind on prevention knowledge. In contrast, a study by Dergance et al. (2003), found a group of older MA women did not lag behind on prevention knowledge. In the same study, factors of education and socioeconomic status did not contribute to low levels of LTPA. Another study found similar results in that no relationship was found between income and LTPA in a study of AA, MA, or urban non-Hispanic white women (Ransdell & Wells, 1998).

Unmarried MA and AA women were less likely than married women to be highly active (Ransdell & Wells, 1998). Martial status predicted LTPA with 77% accuracy in
this study group of minority women from Phoenix AZ, making it the most important predictive variable. The authors discussed other studies that had inconclusive evidence linking marital status to LTPA. However, two other studies have shown that married women, especially women with children, are the least likely to engage in LTPA (Verhoef & Love, 1994: Wiest & Lyle, 1997). Another study showing similar results stated that the two major barriers that remained for MA women in this PA program was no encouragement from their spouses and no encouragement from families (Juarbe et al., 2003).

A descriptive study conducted by Juarbe et al. (2003) n=68 Mexican immigrant women of low socio-economic status and low-acculturation status may explain some of these findings. Of the 68 women participating in the study, 89% stated their partners/spouses or other family members had negative feelings toward PA. Most women stated how their perceptions of PA were influenced by their spouse’s or other family member’s cultural beliefs about PA. For example, family members and spouses thought that PA was not good for reproductive health. In a lengthy discussion participants described how motherhood can be incongruent with PA because PA can cause one to be more concerned about body image. Wearing exercise clothing and jogging can be seen as grooming one’s image of sexual attractiveness reserved for unmarried women only. One participant’s spouse stated that women who exercised were “easy” (Juarbe et al.). PA in this context is framed completely within the bounds of physical image and not as a manner in which to promote health. However, these women reported spousal support as essential to maintaining a routine of PA. Juarbe et al. made
this comment related to their research: “Our findings suggest that a cross-cultural feminist perspective is essential in understanding how exercise beliefs and behaviors are socially constructed around gender and power issues for this group of women” (2003, p.115).

MA women, who had spent more time in the United States, but still had low levels of acculturation tended to have the highest BMI’s (Ayala et al., 2004). Unemployment also negatively affected BMI. MA women who were bicultural were more likely to be employed, be more educated, report higher household income, and feel they had fewer barriers to eating a healthy diet than their traditional Mexican female counterparts. The acculturation process possibly has an effect on behavior because of more knowledge of PA benefits, changes in social norms and PA expectations, or more ready access to PA options (Ayala et al., 2004). Traditional women reported fewer days of vigorous or moderate PA for at least 30 minutes and reported poorer self-rated health than bicultural women. Along these same lines, the NHANES III (2001) study found that MAs whose first language is English or who were born in the United States had a lower prevalence of physical inactivity than those who were Mexican-born. The authors suggest targeting the population with the lowest English proficiency first, since they are most at risk. Bacardi-Gascón et al., (2004) reasoned that the Mexican government does not widely promote PA and community role models tend to be overweight.

Cousins et al. (1992) attempted to utilize family participation in a weight loss program since MA culture emphasizes family unity. However, this program failed to gain even 50% attendance to dietary classes from participant’s husbands. The authors
also commented that many of the participants in the study stated that someone in their family or close friends had attempted to sabotage some of their new behaviors because they found them disturbing. Wen et al. (2004) commented that despite previous study results have been mixed when attempting to demonstrate family support encouraging PA, their study showed perceived family support positively related to PA self-care.

One study that developed culturally appropriate interventions to increase PA participation using bilingual materials, culturally tailored rationales, contracts, social support networks, and instruction by peer leaders failed to show any difference between the control and treatment groups (Poston II et al., 2001). There were a number of problems with the study however, randomization failure, much attrition from the treatment group, and close contact of the two groups possibly resulting in contamination of the samples. Some of the women also complained that the PA program was too difficult. Likewise, Keller and Treviño (2001) found that most PA programs described in other studies require participants to follow-up in a gym or PA lab or that the level of PA is too intense for most women to continue. Also, the PA may simply be too time-consuming for them to maintain.

Age has been linked to PA participation. Berg (2003) found that age was not related to health promotion behaviors in English speakers, but she did find that older women were more willing than younger women to do PA 20 minutes 3 times weekly if no cost was involved. Wen et al. (2004) stated that arthritis, pain, and time were the 3 most commonly reported perceived barriers by older adults in their study of older MA women. Laffrey & Asawachaisuwikrom (2001) found that making excuses, illness, and
medical conditions were reasons older MA women gave for not exercising. In a study of older MA women compared to non-Hispanic white women, both groups recognized self-consciousness as well as a lack of time, companionship, knowledge, and facilities as barriers to PA (Dergance et al., 2003). Participants in this study, valued the perceived benefits of PA equally, however MA women were less likely to exhibit PA behavior. As MA women age, they become increasingly less likely to be physically active.

Berg (2003) discusses findings that show differences in language use were more important in her study than the actual ethnicity of the participant therefore demonstrating that homogeneity should not be assumed based on ethnic identity. In fact, it may not be possible to compile data simply based on status as MA women, but should be categorized based on language use and acculturation status.

*Mexican American Women's Perceptions of Health*

Mendelson (2002) conducted a study assessing MA women’s perceptions of health and found that most MA women rated their health as poor to fair. There is an awareness of health within a community and MA women are aware of their role to facilitate health. Spirituality was found to be a key part in MA women’s perceptions of health. MA women also described illness as being sick in bed and unable to care for family members, unlike a chronic disease like cancer which is not considered an illness because they can still be up doing household activities. The women were more likely to be aware of their body and health when they know it has a vulnerability. For most women a balanced life is when one is physically at her best (Mendelson, 2002).
Mendelson (2003) conducted an additional study looking at contemporary MA women’s willingness to promote health in themselves and within their families. The participants in this small ethnographic study were well acculturated and fluent in English. These women encouraged PA for their children, stating the activity they received from their children’s PA related activities was sufficient to meet their needs for health. Even in the acculturated population, their perception of sufficient activity may or may not be enough to actually promote health. It is difficult to measure actual exercise when they attend their children’s events. Although these women value PA for their children, they do not appear to have the same value for themselves. Hopefully, the importance of lifelong PA is shared with the children.

MA women are much more likely to do PA if they see it as a way to rehabilitate themselves or fix a disease process, and less likely for, health promotion purposes (Berg et al., 2002). The authors surmised that MA women may feel less of a need than Anglo American women to be physically active because they rely on immediate and extended family for health care as they age.

**Suggestions for Intervention**

The NHANES (1998) study emphasizes the need for intervention programs that identify high-risk populations, develop strong and lasting partnerships with communities, and create programs that meet language/ literacy needs as well as values and culture of the population. Laffery (2000) described walking as the most preferred form of PA for MA women, followed by dancing and gardening. Women equally preferred both inside and outside walking as well as walking with a partner or alone. It was also important for
the woman to understand her current PA activity program before moving forward to a
different stage of change (Laffery). Walking was also reported as a favorite LTPA for
MA and non-Hispanic white urban women in a study by Ransdell and Wells (1998) with
weight lifting the second favorite activity for MA women. Wood (2003) also found both
walking and gardening to be favorite activities among MA women. The least preferred
activities were swimming, aerobics, and jogging due to cost, time spent away from home,
and safety issues. Another study found women enjoyed walking the most and showed
that many of them preferred to walk their children to school and to walk to get groceries
(Juarbe et al., 2003).

Keller and Treviño (2001) comment that PA and lifestyle change programs must
adapt the PA to fit a person’s lifestyle. This is a crucial element to success. Low-
intensity walking is a sustainable activity for most MA women. Adherence rates are
higher when a participant can perform the PA in a setting close to their environment
(Keller and Treviño, 2001). In this study, the authors found that a group of MA women
ages 18-45 years who self-reported participation in a walking program of 30 minutes, 3
days a week, effectively increased serum HDL-C levels and reduced serum cholesterol
and body fat. Also, all of the participants in the 3 day per week PA commitment group
finished the study, contrasting the 12% attrition rate in the control group requiring 5 days
a week of commitment (Keller and Treviño, 2001). Women who had originally been
completely inactive were able to make 3 days a week of PA their habit and those who
attempted to jump to 5 days a week had much more difficulty. This supports the concept
that smaller changes are much more plausible for MA women to achieve. Other reasons
these women were able to maintain their PA participation include: no equipment was required; frequent professional contact; and PA that was informal or unsupervised.

In a similar study, Kennedy, Devoe, Skov & Short-DeGraff (1998) designed a PA teaching program for 50 sedentary MA women in order to increase positive attitudes towards PA and were able to facilitate changed behaviors. At the end of the 9 month course MA women perceived fewer barriers to PA than a group of non-Hispanic white women. Also, the attitude score, which impacts self-efficacy, increased substantially (Kennedy et al.). Women in this program benefited greatly from the social interaction that the PA sessions provided. This program taught the women ways to exercise and how to overcome barriers of fatigue, access, and cost of PA facilities.

Berg et al. (2002) performed interviews using focus groups with MA women to determine some of their attitudes about PA. They found that MA women were willing to participate in PA as a way to fix a health problem rather than prevent a disease from starting. Reasons women gave for participating in PA were: feeling better physically, experiencing improved sleep, and enjoying increased energy. Other suggestions provided by the women to increase PA participation were to include family members and get them exercising as well. For women who don’t have family support, the women described a pamphlet of PA suggestions like doing sit-ups while they are doing chores at home. More creative ideas about how to remain physically active need to be provided. The participants also recommended PA programs that had easy access, ability to walk to the program, and neighborhood safety.
One study showed that older MA women did not view their daily housework as PA, when it can in fact benefit their health. Therefore, one possible intervention in older MA women is simply to encourage their daily housework activities like cleaning and gardening (Laffrey & Asawachaisuwikrom, 2001). Another study with older MA women showed they may benefit from familial involvement in PA plans as well as interventions that include time management training (Wen et al., 2004).

**Contingency Contracts**

Contingency contracts have become more popular within the last 20 years as a tool to actively involve the patient in decisions related to his or her treatment plan (Janz, Becker, Hartman, 1984). These contracts are best suited for patients in the preparation and action phases of the stages of change model. The contracts can even be used in the contemplation phase for patients who are weighing the pros and cons by helping them write out and visualize the benefits and possible barriers they face. These clients can take home a “hard copy” to mull over their plan of action. Those in the maintenance phase can continue to use their contract as a measure for how well they are keeping their personal health goals. The contract is a negotiated agreement between the practitioner and the patient. Each responsibility, time, and frequency commitment must be recorded in each contract (Janz et al., 1984). Leslie & Schuster (1991) also add that instructions for patients on necessary skills, reinforcement at the proper time, and performance checks over time are other key elements in a contract agreement process. These contracts differ from a traditional hierarchical model in that patients themselves are the active owners of a health care regimen that they help develop.
In one study, practitioners contracted with cardiac rehabilitation patients for minutes of PA, heart rate parameters, number of exercise sessions per week, and compliance rewards. The use of this contingency contract positively affected cognitive learning related to knowledge of safety guidelines as well as positively influencing participation in the cardiac rehabilitation program (Leslie & Schuster, 1991).

Specifically, two benefits of the contingency contract were the ability to monitor patient’s adherence to regimens over time, and the ability of a practitioner to give appropriate reinforcement when needed to shape behavior.

Contingency contracts always use some type of reinforcement either positive or negative to influence behavior. Morgan and Littell (1988) state that a dearth of scientific studies exists with contingency contracting related to many different types of patient populations. Their study deals had two groups of diabetics in the home setting, both groups had educational interventions, but the experimental group had to sign contracts as a part of their treatment plan and was rewarded with lottery tickets for keeping their contract. Findings from their study showed that the contract group did no better after 8 weeks than the non-contracted, education only, group. Morgan and Littell discussed that approximately 1/3 of the participants in the contract group were not totally committed to contracting and a smaller portion of the sample stated they were overwhelmed with stresses related to financial instability or marital problems. Those subjects who were motivated and ready to make change responded very well to contracting (Morgan & Littell). For this reason, the contracting tool for this paper has been developed to be used
with the Stages of Change Model. The woman’s readiness to participate in PA must be assessed prior to initiating a contract.

In the past, most contingency contracts have been tested for short periods of time, with 8 weeks as normative and 3 months at the outside. In contrast, the tool promoted in this project is designed to be used with patients for the entire time they are under a practitioner’s care. Also, contingency contracts have often taken advantage of positive external motivators like rewards of lottery tickets, use of new exercise equipment, food, money or made use of negative reinforcement such as monetary fines every time a goal is not met. Alternately, the tool designed for this project utilizes internal motivators. The patient’s understandings of the positive health outcomes and the possible negative health outcomes will both be the “contingencies” in this tool.

Critique of the Body of Literature

Many large scale studies exhibit the lower incidence of PA participation in MA women. This sedentary behavior relates to health status and links them to more diabetes and heart disease as compared to non-Hispanic white women. However, there is a disparity in the literature regarding helpful intervention programs to positively and consistently affect behavior change in MA women specifically related to PA. Contingency contracts have been used with other cultural groups, but not with MA women. This is a serious gap in knowledge, because MA women have high morbidity related to physical inactivity. Interventions to stimulate PA participation are needed to improve health promotion behaviors in this population that have significance for
individuals, families, and communities. This project was designed to develop a tool that may encourage PA and link it to health care.

Most studies support that the more acculturated a woman is, the more likely she is to engage in PA. The effect socioeconomic status has on PA participation is as of yet highly disputed. Some studies report personality as a more important variable than economics and others report acculturation status as the most important. Higher education is usually associated with increased levels of PA, although one study disputed this finding. Some studies say that the amount of responsibility at home negatively affects one’s willingness to participate in PA yet other studies refute this. Studies examining married and unmarried MA women also disagree as to which of these two groups is more likely to adopt PA.

Qualitative research is most commonly utilized to study MA women, because so little is known about attitudes and ways to stimulate PA in this population. Qualitative research is appropriate for the state of the science. Overall, studies describing MA women’s perceptions of PA tend to have small sample sizes. Many of the descriptive studies have small sample sizes which may account for differences in results. Also, there is usually no randomization of study subjects; convenience samples are the most common, which can skew results. There are more studies that deal with MA women’s perceptions of their health and PA, but many fewer studies about how to positively affect behavior change. This suggests that more representative samples must be included in larger studies before any reliable conclusions can be drawn. In addition, larger studies are required for generalization.
Interestingly, most MA women in these studies are in a stage of change where they are at least contemplating PA or are seeking actions signifying they are ready for an action plan, they just have not yet been successful in achieving behavioral change on their own. A high level of self-efficacy has definitely been linked with positive behavioral change. MA women are also more likely to engage in PA when they have some type of weakness or known illness and are less likely to consider PA as a way to prevent disease.

Almost every intervention program has had mixed results. Intervention groups have slowly changed focus to include families and these studies have had mixed results as well, probably due in part to the mixed emotions family members and spouses have towards PA. This is possibly related to the fact that MA are not a homogenous group, and therefore more specific studies should be performed that focus on different subgroups of MA women. Implications for research may also be to direct intervention programs toward individuals in ways that appeal to persons with different backgrounds, experiences and support systems. The literature makes it very clear that there is little to no agreement as to what works for or motivates all MA women.

Health care practitioners need to be aware of these differences and have different approaches for different types of patients or at least an approach that allows for flexibility. More information is needed to guide clinician towards motivating this group. The Transtheoretical Model with its stages of change and contingency contracts both allow for this flexibility in clinic practice and encourage cooperation between the patient and provider.
Summary

MA women engage in PA at a rate substantially less than non-Hispanic white women and male counterparts. As a group, MA have higher rates of cardiovascular disease and diabetes. PA is a way to prevent onset of CVD and diabetes as well as reduction of morbidity caused by these diseases. Programs to increase PA have had mixed results in the past. Therefore, the need exists to create an intervention that is appropriate and effective for this population.

Contingency contracts have been used for a plethora of other behavioral health interventions related to suicidal ideation, smoking cessation, alcohol withdrawal and other mental health disorders. These contracts have also been used in the medical arena to encourage PA, change dietary behaviors, and other regimen changes that are disease specific. Contracting is starting to be tested in other cultural group arenas, but thus far contingency contracts have not been used with MA women.

The next chapter will discuss these PA contracts and how to utilize them in clinical practice.
CHAPTER III

Introduction

This chapter provides a detailed description of the project including the contingency contract and its elements, implementation of the contract, and an evaluation plan for the contract effectiveness. The assumed outcome of this contingency contract is increased physical activity (PA) in Mexican American women.

Contingency Contract

The contingency contract designed for this project is intended to encourage MA women to increase PA, particularly leisure time PA. It was developed from the literature and incorporates Prochaska’s stages of change, self-efficacy, barriers, & how to incorporate PA in everyday life. It is important to assess readiness for change prior to signing of the contract. Tools for this purpose have already been developed and tested (Laffrey, 2000). However, elements of this assessment are beyond the scope of this project. Once the clinician is able to ascertain where the patient is and if they are willing to make change, the contingency contract can be discussed. See Appendix A for the contract and Appendix B for the Spanish translation of the contract and pre-contractual questions for discussion. The contract explicitly states what the patient hopes to gain from the contract, what the specific goals are and how they will be met, who will encourage them in the process, and how the family/ friends will participate. A section is included that outlines the practitioner’s obligations: measures to be used in order to encourage the patient, and specifies methods to be used to monitor the patient’s health.
such as blood pressure monitoring, HgbA1C, and cholesterol screening. Signatures of the agreeing parties are included at the bottom of the contract.

Procedure

At every visit to a primary care provider, a contingency contract agreement would be discussed. It is instigated by the primary care provider and discussed with the patient as part of the visit. The purpose of the contract is to stimulate an interactive discussion of the benefits of PA, barriers to PA, and plan for improving PA engagement. Rather than seeing PA as strictly prescriptive, the contingency contract incorporates elements of the Stages of Change model that has historically had better success than the Health Belief Model. The emphasis of the contingency contract is on cooperation between the primary care practitioner and the patient, which is in stark contrast to traditional patient-provider roles. In the MA population that sees PA as a remedy for existing health problems, the contract acknowledges this role of PA yet includes a health promotion perspective as well. This contract helps both the patient and primary care provider identify personal barriers for each patient and discuss how to overcome them, as well as to discuss the exact amount of time the patient will exercise each week.

The contingency contract is to be reevaluated at every clinic visit. In this way, PA is emphasized as health promotion and as prescriptive treatment. Moreover, the continuity of emphasis on PA and its many benefits may assist MA women to engage in it long term. This contract also helps improve continuity of care by facilitating communication between practitioners in a practice with regard to specific goals that a patient is trying to achieve.
The contingency contract must be administered in the language of preference to the patient. The contract in Appendix A was translated into Spanish by linguistic experts. See Appendix B for the translated instrument. In the event that the patient speaks and understands Spanish only, but does not read or write it, the health care provider must access translation services in order to explain the contract to the patient prior to signing. In this case, the contract would be read in its entirety to the patient. In the event the patient is monolingual in English but illiterate, the health care provider must read the contract in English to the patient.

During the initial office visit, or perhaps a separate visit later focusing on health promotion, the following questions should be asked of the patient and discussed.

- How do you feel about physical activity? Do you like it? Do you know you need to do it, but don’t enjoy it? Or you don’t like it and don’t want to have anything to do with it?
- Do you think physical activity is important for your health?
- How confident are you that you can make changes in your life?
- Are you interested in physical activity?
- In the past, what physical activity have you participated in, if any at all?
- How much do you currently participate in physical activity?
- If you had to choose your favorite physical activity or activities, what would it (they) be?
- Describe a normal day for you? (This question helps tease out the physical activity women may be doing, but were not aware of this particular activity)
- How does your family feel about physical activity? What about your spouse (if they have one)?

- How would your family react if they knew you wanted to start participating in physical activity X number of times a week? Would they be supportive or would they be resistant?

- What activities could your participate in as a family?

- Do you like to have an exercise partner or not?

- How many times a week do you think you could try to participate in physical activity and for how long?

- Is there someone that can hold you accountable for and encourage you in the activity you are suggesting?

- What would have to change in your life in order for you to participate in physical activity? What are some of your biggest obstacles?

- Would you be willing to sign a contract together that outlined the type and quantity of physical activity you could participate in? (Emphasize the contract as a means of accountability) If you are not ready yet, could we discuss some options and write up the contract that you could take home and discuss it with your family/people you live with?

The mantra for this program should be start low and go slow. People are much more willing to make changes if they integrate easily into their regular routines. It is easier to move from 3 days/week to 4 days/week of PA than to move from 0 days/week to 4
days/week all at once. During the discussion between the practitioner and patient, the health benefits of improved mood, blood pressure, blood sugar, functional status, weight control, self-esteem, cholesterol, and quality of life must be emphasized. The greater risk of heart disease in MA women must also be emphasized, as well as the influence of physical activity on these risk factors. Other complications of no physical activity should be mentioned like obesity, fractures, high cholesterol, sleep apnea, diabetes, pregnancy problems, increased surgical risks, gall bladder disease, kidney disease, and lung problems as well as difficulty walking and possibly even taking care of their children. MA women must understand the importance of physical activity and its relationship to caring for their families.

After the discussion, the contract should be completed and signed. If the patient is not yet ready to sign the contract, the provider should encourage the patient to take home a draft to discuss feelings, barriers, and options with their family and friends. The next visit the patient may be willing to sign the contract.

When the contract has been signed, a three-month follow-up visit should be scheduled to re-evaluate the success of the contract and appropriate changes should be discussed with the patient. Every office visit thereafter, the contract should at least be reviewed as part of the Review of Systems.

Evaluation Plan

There are a number of ways to assess the outcome of increased PA as a result of this contingency contract. The least complicated way is to create a pre/posttest designed questionnaire related to PA. See Appendix C for this questionnaire. The questionnaire
will be administered prior to a discussion of PA and completion of the contingency contract. It will also be administered at all subsequent health care visits. These data will be compiled by this project director and analyzed for the contract's effect upon women's self-report of PA. In addition, practitioners would be polled at 6 months and at one year after initiation of PA contingency contracts to determine their impression of the effectiveness as well as usefulness of the tool.
CHAPTER IV

Introduction

This chapter will discuss the evaluation of the project as well as strengths and limitations of this contingency contract project. The theoretical framework will be related to the project. In addition, this project will be related to other groups and its significance to practitioners and the field of healthcare. Implications for future behavioral intervention projects will be discussed.

Evaluation

At the end of one year, it would be determined if the contingency contracts had made any impact on PA in the MA women who signed them. If improvement in PA is not observed and clinicians do not find the tool useful, recommendation for discontinuation would be made. Acceptable or successful increases would be that this cohort of MA women increased their activity level by at least one day a week over a one year period 80% of the time. The pretest/ posttest in Appendix C will allow for a baseline score for the amount of physical activity the women participants do at the outset, and this will be compared to their posttest answers after one year. Ideally, each woman with a contract will have an appointment every three months for the first year to evaluate trends since the first year of a major life change can be the most challenging and the women need encouragement. An office staff member will collect and tabulate data.

If the project has been successful after one year, a five-year study would be suggested to determine if the contracts have any long-term significance in these women’s lives. After five years, failure rates drop to less than 7 percent, so this is generally
considered the point at which a life long behavior change has been successfully completed.

Project Relationship to Theoretical Framework

Prochaska’s Transtheoretical Model with stages of change describes the different stages and processes of change that a person undergoes as they seek to make changes in their lives. These descriptions of a person’s attitudes and stages of readiness can help clinicians understand their patient’s position more fully and meet them where they are in terms of readiness to make change. This project utilizes the Transtheoretical model, by first staging the patient and their readiness to change. MA women in the contemplation, preparation, action and maintenance stages should all start a contingency contract. Once the stage of change has been ascertained, the practitioner can move forward with the contract discussion which serves as a time of education as well as changing attitudes and perceptions related to physical activity. Contingency management is one of the processes of change. The contingency contract described in this project is one form of contingency management and a way that consequences are provided for positive behaviors.

The processes of change, which are part of the Transtheoretical model, utilized in this project are; self-reevaluation, environmental reevaluation, self-liberation, helping relationships, counter-conditioning. In self-liberation, the patient’s self-concept slowly changes as they begin to assimilate physical activity into their daily life and their sense of personhood. To support them in their behavior change, the women must find helping relationships, someone who can be her encourager or by surrounding herself with people supportive of her decision. Similarly with environmental reevaluation, the participant
must arrange her life so that physical activity can become a part of her daily routine. Her family and those close to her must be aware of the changes and at least somewhat supportive. A continual commitment to change is part of self-liberation. Perhaps the most important process of change is counter-conditioning; positive coping behaviors for stressful situations. By learning new ways to handle stressful situations, participants successfully learn how to prevent relapse. These processes of change are the behavioral adaptations that a participant must utilize in order to successfully make their behavior change utilizing this model. Thus, stages of change, contingency management, and processes of change are utilized in this project.

Strengths

There are many strengths to this contingency contract project. It addresses an at risk population group, MA women. The project improves discussion about the benefits and the barriers to PA in MA women by asking thought provoking questions. It requires practitioners to have a conversation with their patients about the patient’s unique benefits and barriers to PA. Since the project is situation specific, different for each patient, it allows the clinician the flexibility to meet the individual needs of each patient who utilizes the contract. Through discussions about the patient’s perceptions of PA and their family’s perceptions related to PA in developing an appropriate contract, the project incorporates cultural values and beliefs.

The contingency contract can be utilized by nurses and advanced practice nurses who have primary education responsibility for health promotion. It is ideally crafted for a primary care setting, though its application could be broader ranging.
The tool is intended for use over time, therefore acknowledging the need for reinforcement of the difficulties persons can have with behavior changes specifically related to PA.

Evaluation of the participant’s environment and family involvement is also included in the project as a means of encouraging successful behavioral change. Economic factors and time drains like family responsibilities are also recognized.

Limitations

A number of limitations exist. Contingency contracts do not embrace all stages of changes leaving out the precontemplators and those in the termination phases. It could also be argued that the contract is not well suited for those in the contemplation phase since it requires the participant to at least be ready to make behavior changes.

Evaluation is based partially on self-report which is not an objective measure. Including an additional objective measure of PA, such as pedometers, could possibly bolster the contingency contract. It could also be bolstered by physiological measures of health improvement, such as blood sugar test, BMI, blood pressure, mood, and sleep. These could also serve to reinforce PA. However, all of these measures add additional expense if they're not part of the regular clinic visit.

In addition, evaluation of the project is dependent upon the patient’s willingness to make clinic appointments every three months, or at least after the first 3 months and then in one year. Factors inhibiting evaluation could be patient’s finances and perceptions that the clinic visit is not important. Perhaps phone calls could be utilized for
evaluation for those who did not make follow-up appointments. However, this also adds time and money to the project, but it could also be considered as a form of support.

The project is theoretical in nature and was not implemented. Therefore, its effectiveness cannot be determined, only hypothesized. A follow-up project using this contingency contract as an intervention to promote PA in MAs is suggested.

Significance

The contingency contract for PA has significance to the health of MA women, to practitioners, to future behavioral intervention projects, and to the US economy. MAs are the largest ethnic minority and have some of the highest rates of obesity causing morbidity sequelae that cost billions per year. It is also well documented that MA women do not participate in physical activity as often as their male counterparts thus putting them at risk. This project aims to assist health care providers in encouraging this group of women in physical activity participation. If tested, this tool could inform future behavioral health intervention projects.

Extension to Other Groups

This contingency contract idea for promotion of physical activity has the possibility to be extended to other cultural groups since it is situation specific. It accounts for cultural perceptions by questioning the participants and their families about their perceptions of health promotional activities and physical activity. Extending the contract across gender boundaries is a possibility as well. Both of these extensions however, must acknowledge possible changes in the suggestions of types of physical activity and reasons for participation in physical activity.
Summary

Physical inactivity is a significant problem for MA women, who are at higher risk for diabetes and heart disease than other ethnic groups. A clinical intervention tool, the contingency contract, has been developed and discussed to help guide practitioners in encouraging physical activity for this risk group.
Appendix A

Physical Activity Contract

1) Type of physical activity_____________________________

2) Minutes of physical activity __________________________

3) Number of times weekly_____________________________

4) I __________will arrive at the location of my physical activity
   by_______________________________ means.

5) My encourager will be ______________________________

6) I __________am participating in this physical activity because
   ____________________________________________________________________

7) (optional) My family members/ friends_________________________ and or
   spouse ______________will participate with me ________ times per week

8) (optional) My target heart rate will be_____ for _______ minutes _________ times
   weekly.

9) (optional) Other activities may include_______________________________

10) I _______hope to gain and prevent______________________________
    ___________________________________________________________________
        from this physical activity.

11) I _______ the provider will encourage the participant in their physical activity and
    will monitor their health and illness changes like blood pressure monitoring, Hgb A1C
    checks, and cholesterol checks. I will also provide the participant with various options
    for physical activity and help the participant think through their barriers to participating
    in physical activity.
12) This contract will be reviewed in 3 months following its signing and with every office visit thereafter. Appropriate changes will be made as are necessary to achieve success.

13) Success is 100% compliance of the above stated elements.

Date ____________________

Signed by,

_____________________________________
Participant

_____________________________________
Provider
Appendix B

Discussion Questions in Spanish

- ¿Cuál es su actitud sobre la actividad física? ¿Le gusta? ¿Sabe que lo necesita hacer, pero no le gusta? ¿O, no le gusta, ni quiere hacerlo?
- ¿Cree que la actividad física es importante para su salud?
- ¿Cuánta confianza tiene en sí mism@ para poder hacer cambios en su vida?
- ¿Tiene algún interés en la actividad física?
- ¿En el pasado, qué actividades físicas ha hecho, si es que las ha hecho?
- ¿Actualmente, cuántas veces por semana hace actividad física?
- ¿Si tuviera que escoger su actividad o actividades físicas favoritas, qué escogería?
- ¿Cómo es un día normal para Ud.?
- ¿Qué opina su familia sobre la actividad física? ¿Qué opina su espos@?
- ¿Cómo reaccionaría su familia si ellos supieran que Ud. tenía ganas de participar en actividad física X veces por semana? ¿L@ apoyarían o no?
- ¿En qué actividades podría participar con su familia?
- ¿Le gusta hacer ejercicio con otras personas o no?
- ¿Cuántas veces por semana piensa que podría participar en alguna actividad física, y por cuántos minutos?
- ¿Hay alguien que pueda hacerse responsable por y animar a en la actividad que está sugiriendo? ¿Qué cambios necesita hacer antes de poder participar en algún tipo de actividad física? ¿Cuáles son sus obstáculos principales?
- ¿Estaría dispuesto/a a firmar un contrato que describiera el tipo y la cantidad de actividad física en la cual podría participar? Si no estás list@, ¿podríamos hablar sobre algunas opciones y escribir un contrato que puede llevar a casa y discutirlo con su familia o con las personas con quienes vive Ud.?
Contrato de Actividad Física

1) Tipo de la actividad física ______________________________

2) Minutos de actividad física _____________________________

3) Número de veces por semana ___________________________

4) Yo, _______, llegaré al lugar donde voy a hacer la actividad física por______________________________________________ .

5) La persona que me animará será __________________________.

6) Yo, ______, estoy participando en esta actividad física porque ____________________________________________________________ .

7) (opcional) Las personas en mi familia/amigos______________________________ y/o espos@, _________________, participará conmigo ______ veces por semana.

8) (opcional) Mi ritmo cardíaco objetivo será _____ por _______ minutos __________ veces por semana.

9) (opcional) Otras actividades pueden incluir_____________________________________________________________.

10) Yo,______, espero conseguir y prevenir_________________________________________________________ por hacer esta actividad física.

11) Yo, ______, el/la proveedor/a de servicios de salud animaré al participante en su actividad física y seguiré los cambios de salud y enfermedad tales como monitorización de la presión arterial, revisiones del nivel de Hgb A1c (hemoglobina glicosilada), y control del nivel de colesterol. También le proporcionaré al participante varias opciones
para hacer actividad física y le ayudaré a contemplar las barreras que pone con respecto a participar en actividades físicas.

12) Este contrato será revisado 3 meses después de su firma y con cada visita al consultorio a partir de entonces. Haremos los cambios apropiados y necesarios para tener éxito.

13) El éxito requiere conformidad de 100% de los elementos indicados anteriormente.

Fecha _________________

Firma de,

_____________________________________
Participante

_____________________________________
Proveedora de servicios de salud
Appendix C

Physical Activity Questionnaire

1. Do you engage in physical activity, such as walking, running, weight lifting, rope jumping, aerobics, swimming or other such activities?
   ___ Yes
   ___ No

2. How often per week do you engage in physical activity?
   ___ Never
   ___ Once a week
   ___ Twice a week
   ___ Three times a week
   ___ More than three times a week

3. What household activities do you engage in? Check as many as are appropriate.
   ___ Vacuuming or sweeping
   ___ Gardening
   ___ Taking care of young children
   ___ Household cleaning

4. Is physical activity important for good health?
   ___ Yes
   ___ No

5. Can increased physical activity treat illness?
   ___ Yes
   ___ No
Cuestionario de Actividad Física

1. ¿Hace actividades físicas como caminar, correr, levantar pesas, saltar a la comba, aeróbic, nadar, u otras actividades semejantes?
   ____ Sí
   ____ No

2. ¿Cuántas veces por semana hace actividades físicas?
   ____ Nunca
   ____ Una vez por semana
   ____ Dos veces por semana
   ____ Tres veces por semana
   ____ Más que tres veces por semana

3. ¿Cuáles actividades hace en su casa? Tache cada respuesta apropiada.
   ____ Aspirar o barrer
   ____ Jardinería
   ____ Cuidar niños
   ____ Limpiar la casa

4. ¿La actividad física es importante para la buena salud?
   ____ Sí
   ____ No

5. ¿Puede un aumento de actividad física tratar una enfermedad?
   ____ Sí
   ____ No
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