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The Animadora Project: Identifying factors related to the promotion of physical activity among Mexican Americans with diabetes

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Abstract

Purpose—There is a dearth of information about factors related to physical activity among Mexican Americans with diabetes. Self efficacy and social support are associated with physical activity, however little is known about their role within different cultural groups.

Design—Focus groups were used to identify factors that motivate walking.

Setting—Two Mexican American communities located in Tucson, Arizona.

Subjects—Individuals who attended diabetes education.

Intervention—A community-based provider organized walking groups with people who previously attended diabetes classes. Walkers participated in focus groups exploring themes related to their experience.

Measures—Self efficacy, social support, and collective efficacy. Grounded theory was used to analyze focus group results using two rounds of analysis; the first identifying references to self efficacy and social support and the second adding collective efficacy as a theoretical basis for walking.

Results—Among 43 eligible participants, 20 participated in focus groups. Social support was expressed as commitment and companionship. Walkers demonstrated a high level of self efficacy for walking. Development of group identity/social cohesion was also a motivator to walk.

Collective efficacy emerged as an applicable theoretical model encompassing these themes and their interrelationship.

Conclusion—Collective efficacy, or the belief that the group can improve their lives through collective effort, is a viable theoretical construct in the development of physical activity interventions targeting Mexican Americans with diabetes.

Keywords

Mexican Americans; physical activity; walking; social support; self efficacy

Purpose

Diabetes poses one of the most serious threats to Latino health, and specifically to Mexican Americans, who are twice as likely as Anglos to develop the disease¹. Diabetes can have serious consequences if unchecked and untreated, and Mexican Americans suffer diabetes complications at a rate of 2 to 3 times that of Anglos^{2,3}. Complications include heart disease and stroke, kidney failure, blindness, foot problems, and neuropathy or nerve damage that can lead to amputations⁴. Not only are the consequences dire, but they can also be costly in the long run⁵. Diabetes self management is the most effective strategy to avoid diabetes complications and, along with diet and medication, physical activity presents a cornerstone of successful diabetes self care^{6,7}. However, Mexican Americans in general do not achieve recommended levels of physical activity^{8,9} and this health challenge extends to those with diabetes. In a study of Mexican Americans with diabetes, 37% reported no physical activity in the past month¹⁰. In the general population, factors identified as contributing to the initiation and maintenance of physical activity include both social support and self-efficacy^{11,12}, however, there is little understanding of the role these constructs in different cultural contexts. Among Mexican Americans specifically, current literature fails to adequately investigate factors related to physical activity or to identify health interventions that respond to specific cultural aspects of specific subpopulations. The purpose of the study is to understand factors that motivate older Mexican Americans with diabetes to maintain regular physical activity and whether these factors can be utilized in interventions promoting physical activity among diabetic Mexican Americans.

Approach

The *Animadora* Project uses qualitative techniques to study factors related to physical activity among Mexican Americans with diabetes who participated in a walking intervention located in two neighborhoods in Tucson, Arizona. Self-efficacy and social support provide the theoretical basis and grounded theory is used to explore these constructs as predictors of physical activity.

Self efficacy

Perceived self-efficacy is defined as people's beliefs regarding their capacities to perform in a certain manner or produce certain results in their lives¹³. In general, there are four main sources of influence in the development of a person's self-efficacy: mastery experiences; vicarious experiences provided by social models; social persuasion; and interpretation of

somatic and emotional reactions¹³. Self-efficacy has been found to be predictive of exercise in previous studies; however few have identified factors most likely to contribute to the development of exercise self-efficacy¹² or to consider cultural interpretations of this construct. With respect to the Latino population, the evidence is conflictive. Marquez and McAuley¹⁴ found that Latinos reporting high levels of physical activity gave more importance to physical activity outcomes than those reporting low levels and thus concluded that interventions focusing on self-efficacy could be helpful in increasing physical activity among Latinos. However, in a study by Evenson¹⁰, Latino women with high self-efficacy were less likely to engage in physical activity. The authors concluded that although women believe they are capable of engaging in physical activity, they do not engage in the behavior for other reasons. More investigation into both the development of self efficacy and its role in physical activity among Latinos is necessary in order to adequately apply this construct to health interventions.

Social Support

Social support is another factor within the social environment that impacts health and health behavior and has been well-studied by researchers. Social support is characterized and measured in a variety of ways within the literature, but has been defined as “availability of people whom an individual trusts, on whom he or she can rely, and who make him or her feel cared for and valued as a person”¹⁵.

Both the perception that support is available and the extent of the actual delivery of support in a specific situation have been explored. Support networks, or the extent to which a person is connected to others, are considered predictive of health behaviors separate from the quality of that support¹⁶. Social support has been positively correlated with exercise behavior, although whether it has an independent influence or aids in the development of exercise self-efficacy is unclear. In investigating long term physical activity, McAuley, et al., identified a predictive model in which increased levels of social support within the exercise context played an instrumental role in the extent to which the exercise experience was perceived to be a pleasant affective experience¹². Affect contributed to the development of self-efficacy, the main predictor of maintenance. Studies that focus on Latino populations most commonly relate social support as predictive of exercise. In these studies, social support is described as having a friend who is supportive⁸, knowing people who exercise or seeing people exercise¹⁷, or being involved in a group exercise activity¹⁰.

Collective Efficacy

The concept of self efficacy is based in an individualistic perspective in which one's success depends primarily on oneself, and studies have focused primarily on the Anglo culture. Collective efficacy may be a more appropriate theoretical model in the Latino culture, in that it focuses on group rather than individual success and has the potential to encompass aspects of both self efficacy and social support in encouraging regular physical activity. As a collectivist culture, Mexican Americans place great value on group goals, emulate behavior of members of their group¹⁸ and are more likely to emphasize the importance of group membership¹⁹. According to Bandura (1986), collective efficacy is the belief that a group can solve problems and improve their lives through group effort²⁰. This definition is

applicable to exercise programs that incorporate group dynamics to improve the health of the group as a whole. While collective efficacy has been linked to health outcomes and quality of life²¹, collective efficacy among groups coping with disease management has been less explored, however the interrelationship of self efficacy, social support and collective efficacy warrants investigation. Social cohesion has been identified as constructs related to the development of collective efficacy²², as has the self efficacy of the members of the group. It is possible that group knowledge about diabetes and benefits of exercise may boost the determination of individuals in group goal attainment.

Methods

Setting and Background

The *Animadora* Study relied upon a community-based intervention to promote walking among Mexican Americans with diabetes living in two communities in Tucson, Arizona. The community agency, Carondelet Health Network (CHN), had been providing free diabetes classes in the community for three years, and was aware that knowledge of diabetes risk did not necessarily translate into behavior change. Of all the behavior modifications, physical activity tended to be the most challenging for participants. CHN had attempted to reduce barriers by providing free passes to a local indoor walking track; however the majority of program graduates did not take advantage of the passes. The program coordinators noted, however, that having become educated in diabetes self management, several individuals had initiated a walking routine that they adhered to faithfully, and that they attempted to draw other individuals both to the classes and to the walking track. These individuals displayed traits of both self efficacy and of social support, that is, they sought to build social networks around the common issue of diabetes and the need to exercise for your health. The *Animadora* Study was generated out of a desire to understand the factors that motivated these successful walkers and to create a context in which their motivation might be transferred to other people.

Sample

CHN organized a series of walking groups which were led by individuals who had demonstrated success in developing a walking regimen and expressed a desire to help others. CHN recruited walkers over the telephone from the list of individuals who had participated in the diabetes classes in the past. If they expressed interest in the walking groups, they were invited to an intake day during which they met briefly with the CHN Certified Diabetes Educator. They chose a walking group based on their preferred time to walk and agreed to participate in the program over a 12-week period. At this time, researchers spoke individually to each person who signed up for the program to recruit them into the study. The consenting process was approved both by the CHN internal review board and the academic human subjects internal review board. Potential participants were told that if they agreed to participate, they would be asked to respond to a short questionnaire and would be invited to a focus group that would take place after the 12-week walking group. Researchers emphasized that the questionnaire and focus groups were separate from the walking program and that they could choose not to participate in the focus group and still walk in a group. All of those signing up for the walking groups also signed the consent form

and filled out a descriptive questionnaire which was used to provide a demographic description of the sample.

During the course of the program, walking groups met at least three times a week. The group leader or *Animadora* (Motivator) was tasked with contacting group members to remind them to walk and to check on participants who did not show up. At the end of the 12 weeks, the CHN coordinator contacted participants to take part in a focus group regarding their experiences as a member of their walking group. Members of a particular walking group were invited to the same focus group. Slightly more than one-half of those who joined the program and the study actually showed up for the focus groups. Review of data from the questionnaire revealed no demographic differences between those that attended focus groups and those that did not. The majority of those that participated in the focus groups, however, had participated actively in the walking groups, while those who did not walk regularly did not attend the focus groups. Thus the sample of this study was limited to individuals who had successfully engaged in a physical activity regimen over a 12-week period.

Focus groups were held in a conference room at the community neighborhood center where many of the walking groups chose to walk. The focus groups were conducted by a team of facilitators comprised of one researcher and one graduate research assistant (GRA). All of the facilitators were bilingual and with one exception bicultural. The GRAs were trained in focus group facilitation and were responsible for taking notes. At the opening of each focus group, the consent form was revisited and the researcher reminded participants about the confidential and voluntary nature of their participation. They were encouraged to discuss ideas between themselves and reminded that they were sharing opinions and that no response was right or wrong.

Measures

A focus group guide was used to explore themes related to social support and self efficacy. For example, a discussion on self efficacy was initiated by the question: What is it like to try and exercise regularly? Probes were used (What makes it easier or harder?) to guide the discussion and stay focused. Sources of social support were investigated as both external to the group (Is there someone who cares whether or not you exercise regularly?), and from within (What is it like to walk as part of a group?). Participants were also asked to reflect upon why some of their neighbors or friends with diabetes were able to engage in regular physical activity and others not. The focus groups were conducted almost entirely in Spanish and were audio recorded. The GRAs later transcribed the recordings. The transcriptions were not translated and analysis was conducted in the Spanish language transcriptions.

Focus groups were analyzed using grounded theory as a qualitative research methodology. Rather than a preconceived hypothesis driving data collection, it is assumed that the theory is implicit in the data and will emerge through analysis. Thus, while self efficacy and social support had already been identified as areas of interest, the researchers analyzed the data with no preconceptions regarding the role of these constructs or the relationship between the two. Analyzing the post-intervention focus group data can provide a window into the psyche of the groups, including perspective and perceived efficacy. Focus groups facilitate the collection of accurate data, especially on minority populations' beliefs and values²³. In

addition, focus groups provide a platform for study participants to express their particular needs and views.

Two researchers and one GRA coded the data separately around categories of self-efficacy and social support. For example, self efficacy was coded, and then, where applicable, subcategorized by the specific sources of influence, such as mastery. Social support was categorized by type of support, such as informational, emotional and tangible. Coders met as a group to discuss coding and resolve discrepancies in coding. Based on preliminary findings in which self efficacy and social support appeared to be highly relevant but not clearly related, collective efficacy emerged as a means to explore the interrelationship between these two factors. The coded data was then organized into tables for easier referencing.

These preliminary findings were then used to generate specific research areas, which were investigated through secondary analysis. These included: the extent to which individuals reported collective efficacy within their group; the relationship between self-efficacy and collective efficacy; the relationship between social support and collective efficacy; and the extent to which collective efficacy of a walking group influenced individual walking behavior or attitude toward walking.

Results

Nine walking groups were initiated as part of the study. In all, 52 people initiated the program, nine of whom were *animadoras*. To ensure that their presence did not influence discussion of the groups, the *animadoras* did not participate in the focus groups. Among the 43 walking group participants, 24 participated in one of six focus groups. However, one focus group consisting of four walkers was removed from the analysis because they were Anglo. The remaining 20 focus group participants were Mexican American. The focus groups were conducted in Spanish. Participant age ranged from 33-95, with an average age of 61. Eighty-five percent of the walkers were women and 15% were men. A demographic comparison between those who participated in the focus groups and those who were not revealed no marked differences in age range and gender. However, review of the walking logs maintained by the *animadoras* demonstrated that 18 of the 20 focus group participants walked regularly (weekly) in the walking group, while among the 19 individuals who did not participate in focus groups, only four walked regularly throughout the 12-week period. Those that participated in the focus groups thus represented individuals who were successfully able to maintain a walking routine for a 12-week period.

Four major themes emerged from preliminary analysis of focus group data: social support as expressed through 1) the participants' feeling a sense of commitment to walk with the group, and 2) having company or social support while walking as a major motivator; 3) the level of self-efficacy related to walking; and 4) the development of group identity and social cohesion among the participants also as a motivator to stay in the program. Based on these themes, collective efficacy emerged as an applicable theoretical model encompassing these four themes and their interrelationship.

Sense of commitment

At the beginning of the *Animadora* study each study participant was asked to sign a commitment form prior to initiating walking. For most participants, signing these forms formalized their participation, thus, walking with the groups became an obligation. For example, one participant indicated “*It is a commitment*”. Another emphasized that “*You feel obligated*”. Another participant was more specific by explaining “*Simply by signing the paper that we signed you are committed*”. Results also suggested that being reminded by their group leader of walking commitments played a key role in increasing the feeling of commitment to a collective group. One participant said “*Having someone call me, I feel more committed*”. Another captured the relationship between commitment and belonging to a group when they recalled being reminded by their group leader, “*you know, we will wait for you, you know that we will be here*”. The participant was thus motivated to walk because as a member of a group there were people waiting for her.

Social support/Companionship

A second facet of social support dealt with the experience of having company when walking. Group members defined the benefits in the following ways: “*The walk seems shorter when one has a [walking] partner*”; “*well, it's more fun walking in a group because you talk as you go*”; and “*you are more motivated, always more motivated in a group.*” Another walker articulated, “*It motivates you to go with somebody else than to go by yourself.*” When referring to the efficacy of the group leader a participant said “*Yes it has helped us (to be in a group) because sometimes you say to yourself, ‘well, I'll go later’, and the Animadora says, ‘no, we're going now, let's go’, and they hurry us on.*”

Self-Efficacy

The level of self efficacy of individual walkers was evident in the focus group data. The data can be categorized by all four influences on development of self efficacy; mastery, social persuasion, vicarious experiences, and interpretation of somatic reactions. However, mastery, or the growing self confidence that one experiences as they successfully engage in an activity, was most frequently expressed by participants. For example, participants were motivated to sustain their walking by their own increasing capacity. One participant stated, “*For me, when I started to walk it took me 40 minutes to do a mile and now I can do it in 20 minutes.*” Individual efficacy and mastery with or without a group was expressed through statements such as, “*Walking is for one's own good. It's not doing anyone good except to yourself, right?*” and “*If I don't help myself, who will help me?*” Success, or mastery, was also expressed through the benefits participants experienced, such as no longer taking pills to control diabetes, being able to keep up with a daughter while shopping, and in general having more energy. Several participants talked of the importance of goal setting, another component in developing mastery. Expressed by one, “*it is really important to have a goal, and if you have one then you start and then little by little knowing that you have one, you know what to do. This is very important.*” In addition to a certain level of walking, goals were also set around lowering blood glucose without insulin, losing weight. Finally, participants expressed their mastery through their determination to walk. As one expressed

in, *“he who wants to walk will find a way”*. Another affirmed, *“I have to leave everything and come and walk. It is a proposition that I made to myself”*.

Social persuasion, a second influence on the development of self efficacy, was communicated as coming from a doctor or other person with expertise in diabetes. As one participant stated, *“In my head I know that I have to surpass my sickness in order to move forward. Because the doctor told me I have to exercise, walk, and do something for myself.”* Another stated, *“What was most useful to me was knowing what might happen, the sicknesses that can occur. That gave me more motivation.”*

Vicarious experiences, the third influence on self efficacy, were shared by a few participants as seeing other people walking at the walking track both in and outside the walking group and at various ages and states of health. One participant stated, *“Well if they can come walk why can't I? If they can, I can too”*. Referring to other people in the walking group, a participant intimated *“Those people are examples for the rest of us (walkers in the group)”*.

Finally, interpretation of somatic reactions can be seen across different influences as the participants expressed the benefits of walking on their well being in various ways. For example, one participant stated, *“I don't get tired anymore. I don't get sleepy; I am not lazy about doing things. Before I was lazy even in getting up....I didn't have motivation for anything. And when I started to walk and everything... I felt stimulated.”*

Group identity/Social cohesion

A fourth theme emerged from the data that was related both to social support and self efficacy. Participants described development of a group identity among group members and the expression of both goals and successes as communal. This identity was formed partly through the common experience of having diabetes. As one participant explained, *“Simply talking with someone that has diabetes, what has happened to them, what their family has gone through. It helps a lot. I think that has motivated us more.”* Participants took responsibility for each other's involvement and success. Participants expressed group cohesion, motivation, and responsibility in the following ways: *“Having relationships like we do in the group, that is when we found out that we would motivate each other to walk. It is rare that someone would refuse, only those who can't- they're not able to”*; *“Because we push each other. We say, ‘see you tomorrow, see you tomorrow”* and *“We want to keep improving”* (referring to doing more turns about the walking track).

Discussion

While Latinos suffer disproportionately from chronic disease and report less than recommended levels of physical activity, research has been inadequate in providing information about motivating and facilitating factors among Latinos that can be used to increase the effectiveness of physical activity interventions targeting Latino subgroups. This study used a qualitative approach to investigate social support and self efficacy, constructs that have been shown to be relevant to the Anglo populations, in a Mexican American population.

The first theme identified in the study, sense of commitment, was important in terms of motivating participants to walk. Commitment to the group began for some participants through the act of signing the form. Others expressed a growing commitment that arose as they became aware that others were waiting for them and were concerned that they show up to walk. Commitment in this sense appears to be related to social support in that as the individuals became aware that other people in the group cared about them, they felt more committed to walking with the group. The second theme was more clearly centered on social support. Participants described the benefits of companionship while walking as a motivation to walk now rather than later and to walk farther than they might otherwise walk alone. In addition to encouraging each other to stay involved, participants shared knowledge and experiences with diabetes, as well as other issues in their lives. Companionship appeared to be related to the development of social support.

The data from this study suggest that participants who successfully engaged in regular walking over the 12-week period had a high level of self efficacy for walking, the third theme identified from the data. Concerns about diabetes was a major motivator for walking, and the speed which with they increased their capacity to walk, as well as the health benefits they experienced contributed to increased mastery and self efficacy. While it is possible that some participants acquired a level of self efficacy after experiencing social support, the reverse was indicated by some participants who expressed their efficacy by stating they would find someone to walk with since walking was necessary for their well being. Thus, these data did not reveal a clear causal relationship between social support and self efficacy.

However, with the inclusion of the fourth theme, a strong sense of group identity and cohesion, it is possible to integrate the emerging themes into a model of collective efficacy. All four themes identified through the data are related to the concept of collective efficacy. As an aspect of social support, commitment to the group experience is relevant to collective efficacy because when group members understand what is expected of them in order to carry out a task they will be more likely to believe their effectiveness as a group²⁴. Social support was also bolstered by identification with a group, because walking as a group was more enjoyable than walking alone as they shared their personal lives with each other and formed personal bonds. For example, one participant intimated, *“Well we were just sitting there and then I told her my life’s story and she told me hers and we started crying and everything... and now we walk very comfortably together.”* Thirdly, the expression of self efficacy was apparent, without which the efficacy of the group will fail to develop. Finally, social cohesion, a form of social support but dependent upon group identity, is relevant to collective efficacy because the extent of cohesion between group members is positively associated with increased desire to walk, and accordingly group effectiveness²⁵. Taken as components of collective efficacy, the four major themes emerging can thus contribute to development of interventions that capture the needs of an older Mexican American population with diabetes.

Individuals in the walking groups exhibited collective efficacy with their group by setting group goals to improve their walking performance, and forming close relationships with group members that, in turn, motivated them to continue in the walking group. A sense of collective efficacy seems to have influenced walking behavior and attitude toward walking.

Group cohesion increased motivation to walk as evidenced by the commitment to show up because others were waiting, as well as the desire to walk. Self-efficacy was a factor that facilitated collective efficacy by increasing the level of confidence a walker had in his ability to contribute to the group. Knowledge that exercise was beneficial to their health and the capacity to set and meet personal goals, resulted in participants being more inclined to remain in the walking group, thus facilitating the collective efficacy of the group. While social support was evident in this study, collective efficacy was found to be distinct in that collective efficacy is the belief that the group can improve their lives through collective effort. Not only did the participants lend social support to one another, they also inspired and motivated each other to keep walking by setting an example for others and in the process influencing the efficacy of both themselves and the group. This study has implications for practice and provides evidence that interventions targeting Mexican Americans should utilize a group approach to physical activity. Future research should focus on evaluating an intervention employing collective efficacy as a theoretical basis.

The main limitations of this study are related to the study sample. First, small sample size makes it difficult to generalize findings beyond those who participated in the study. Qualitative inquiry is not designed to be conclusive, but is rather a process of discovery designed to broaden our understanding and to bring new perspectives to inform future research. A second limitation is that those who chose to participate in the focus groups were successful walkers, limiting the potential to explore factors that inhibited participation in walking groups. This information would also be valuable to understanding how to motivate physical activity in this population. Additionally, study participants were for the most part individuals who entered the program with some level of motivation to walk, and it is possible that many of them would have walked without the added benefits of the group experience. However, evidence of the importance of self efficacy and collective efficacy for walking among a sample of Mexican Americans justifies further research in order to identify ways to promote physical activity among this high risk population.

So What

In this study, authors initially sought to investigate the role of social support and self efficacy among a Mexican American sample. In utilizing qualitative inquiry that promoted interactive discussion between project participants, as well as an open data coding process designed to expand rather than narrow understanding of the related concepts, it was possible to identify influences that were not predetermined by the study design. Four themes emerged from the data that were related to physical activity: commitment to the group; companionship/social support, self efficacy, and social cohesion. While the data did not provide evidence of a relationship between social support and the development of self efficacy for walking, each theme could be characterized as a component of collective efficacy. Social support was evident in development of collective efficacy through both the commitment that participants felt to each other and in the manner that they inspired and motivated each other to keep walking. Self efficacy, while a key factor in initiation and maintenance of physical activity among Anglos, in this case facilitated collective efficacy by increasing the level of confidence a walker had in his ability to contribute to the group.

This study seems to indicate that both social support and self efficacy are relevant to attainment of regular physical activity among Mexican Americans. Rather than identifying a causal link between these two constructs, collective efficacy emerges as a potential link between individual motivation to walk and the added benefits of social support achieved in a group setting. Combined with existing research demonstrating the importance of social support as predictive of attainment of physical activity among other Latino subpopulations, there seems to be moderate support for the assertion that the collective efficacy is a motivating factor for Mexican Americans with diabetes. If this assertion holds true, practitioners developing interventions targeting Mexican Americans should utilize a group approach to physical activity designed to contribute to growing self efficacy of participants as well as mutual social support. Implications for research include the need to study self efficacy as a component of collective efficacy in Mexican Americans and the applicability of these findings to other Latino subpopulations.

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