

Camine con Nosotros: Connecting Theory and Practice for Promoting Physical Activity Among Hispanic Women

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Over the past 30 years, the fields of health education and health promotion have shown significant development, particularly in program planning and evaluation. A considerable contributing factor has been the application of behavioral and social science theory, which facilitates the planning and evaluation of programs. However, practical explanation of the processes by which theories are selected and applied is lacking in the literature. As a consequence, practitioners find it difficult to connect theory and practice and to design and implement theory-based programs. The recognition of the difficulties faced in applying theory in everyday practice is not new: In the 1980s and early 1990s, theorist researchers made some effort to address the issue (D'Onofrio, 1992; Turner, 1987; van Ryn & Heaney, 1992). Nevertheless, there is still a recognized need for bridging the gap between theory and practice (Bartholomew, Parcel, & Kok, 1998; Glanz, Lewis, & Rimer, 1997), and innovative models to facilitate the process of selecting and applying theories are being proposed (Bartholomew et al., 1998).

Despite the popularity and widespread use of theory in health education, practitioners still find it difficult to design and implement theory-based interventions. This is especially true when working with ethnic/racial minority groups, including Hispanic groups. Practitioners working with Hispanic communities face additional barriers that may often discourage them from using theories when planning interventions. These barriers include the diversity that exists within the Hispanic population, lack of reliable data, and issues related to cross-cultural applicability of current behavior theories. However, the use of theory constitutes a valuable tool for developing more effective programs, and theorist researchers should be more sensitive to practitioners' needs. By explaining the processes for selecting and applying theory in the same detail as outcome results, researchers will contribute to increasing practitioners' interest in theory. This article describes Camine con Nosotros, a theory-based physical activity program for Hispanic women, and explains the process of selecting the theoretical framework of the program and connecting theory and practice.

Despite efforts to overcome utilization barriers, connecting theory and practice is, in many cases, a challenge for health educators, especially for those working with Hispanic populations. Lack of familiarity with cultural and psychosocial issues can lead practitioners to choose theories that are inconsistent with the particular characteristics of the participant population or to inappropriately predict the relationship between their key variables. It is the responsibility of the program planner to understand the cultural and psychological contexts of the population subject to intervention, and to select theories that properly address the factors related to the behavior to be studied. From this perspective, it has been suggested that researchers who belong to the same ethnic group being studied are better able to understand and analyze the cultural and psychosocial realities of that group (Marín & VanOss, 1991; Rogler, Malgady, & Rodríguez, 1989). Other researchers argue that some of the differences between Hispanics and non-Hispanics in epidemiological studies can, in part, be explained by the misinterpretation of data by professionals who are not familiar with Hispanic cultural issues (Good & Good, 1986). The recognized lack of Hispanic public health professionals, including researchers (Cantor, Bergeisen, & Baker, 1998; Palepu et al., 1998; Soto Mas & Papenfuss, 1997), may constitute a considerable barrier to the use of theory with Hispanic communities.

Practitioners working with Hispanics face additional barriers that may discourage them from considering the use of theory. First, the Hispanic population is composed of a variety of groups, with different national origins, acculturation levels, language skills, races, and life experiences. Second, the health status of Hispanics is still imprecisely known and insufficiently analyzed; contradictions exist not only in reported mortality and morbidity but also in risk factors and behavior data (Soto Mas, Papenfuss, & Guerrero, 1997). This makes it more difficult for practitioners to find the resources for developing a sound theoretical framework for a particular Hispanic group and to understand the circumstances that influence the health behaviors of the participant population. It may also be the reason why some authors point out that, in planning and delivering health education and promotion programs, practitioners usually depend on models that have not been developed to meet the needs of Hispanic communities (National Coalition of Hispanic Health and Human Services Organizations [COSSMHO], 1995).

Practitioners working with Hispanics may have other reasons to be confused about the appropriateness of using theory. Generalization across populations is considered by some authors to be a characteristic of formal theory (Green, 1991; van Ryn & Heaney, 1992), and studies have found that the combination of elements from different models has broad applicability across ethnic groups (Pasick, 1997). On the other hand, the lack of cultural sensitivity has been cited as a main weakness of current health behavior theories (Pasick, 1997; Pasick, D'Onofrio, & Otero-Sabogal, 1996). The literature also alerts researchers to the danger of assuming universality of theoretical concepts or constructs, and recommends the distinction between what is ethnic or universal and what is emic or group specific (Marín & VanOss, 1991). Although teasing apart these conflicting views and agreeing on the cross-cultural applicability of theory are essential to research in social and behavioral sciences and health education, the discourse confuses practitioners and discourages them from using theory.

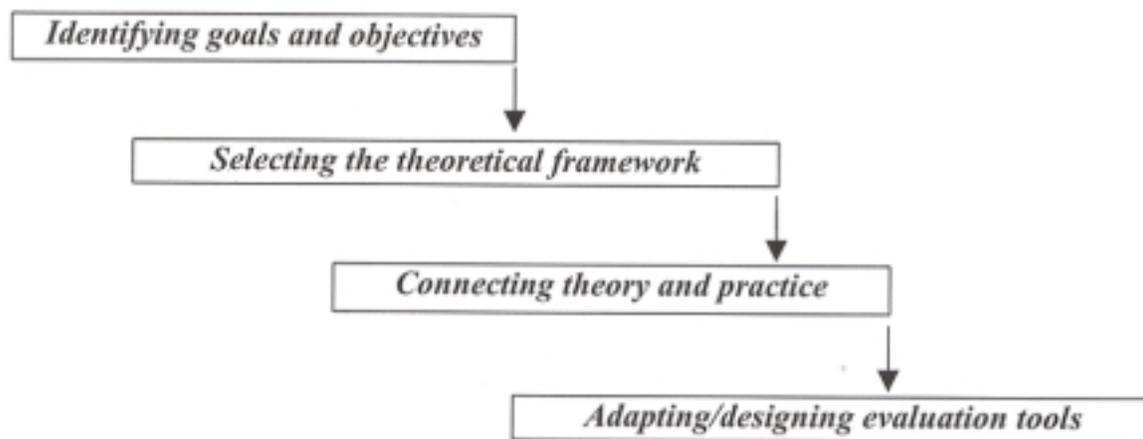
Nevertheless, we should insist on the benefits of developing theory-based interventions for Hispanic populations. Although using theories and models cannot guarantee the success of a program, they provide a framework in which programmers can better plan, implement, and evaluate an intervention. They also contribute to the understanding of conditions affecting specific behaviors and help us identify factors and circumstances that are most likely to produce particular results (D'Onofrio, 1992). Therefore, we should commit to building practitioners' confidence in theory and to providing them with the resources to select and apply theory in a rational way. *Camine con Nosotros* (Come Walk with Us), the program described here, is an example of a theory-based intervention that was developed following a rational process that facilitates the selection and practical application of a theoretical framework.

CAMINE CON NOSOTROS

Background

The first surgeon general's report on physical activity and health (U.S. Department of Health and Human Services, 1996) declares the need for promoting physical activity among minority populations and developing theory-based strategies that facilitate the planning, implementation, and evaluation of physical activity interventions. One group in need of effective programs

FIGURE 1
From Theory to Practice



promoting regular physical activity is the Hispanic adult population. Regional and national data demonstrate that Hispanic adults have lower levels of physical activity than Whites (Burchfield et al., 1990; Centers for Disease Control and Prevention [CDC], 1992, 1994; Crespo, Keteyian, Heath, & Sempos, 1996; Hovell et al., 1991; Perez-Stable, Marín, & Marín, 1994). In addition, the *Healthy People 2000 Review, 1997* (National Center for Health Statistics [NCHS], 1997) shows that Hispanics are far from reaching the year 2000 physical activity objectives: 34% of Hispanics age 18 years and older are sedentary (year 2000 target = 25%), and only 13.6% engage in vigorous physical activity and 20% in moderate physical activity (year 2000 target = 17% and 25%, respectively). Within the Hispanic population, adult women merit particular attention. The prevalence of physical inactivity is higher among Hispanic women than among Hispanic men. In comparison with White women, Hispanic women have been shown to have lower levels of leisure-time physical activity and lower levels of light to moderate and vigorous physical activity (CDC, 1991a, 1991b). Sixty-one percent of Hispanic women report a sedentary lifestyle (defined as less than 3 sessions of leisure-time physical activity a week), compared with 56.4% of White women ("Prevalence of Selected Risk Factors," 1994).

Given the demonstrated relationship between physical activity and health, the promotion of physical activ-

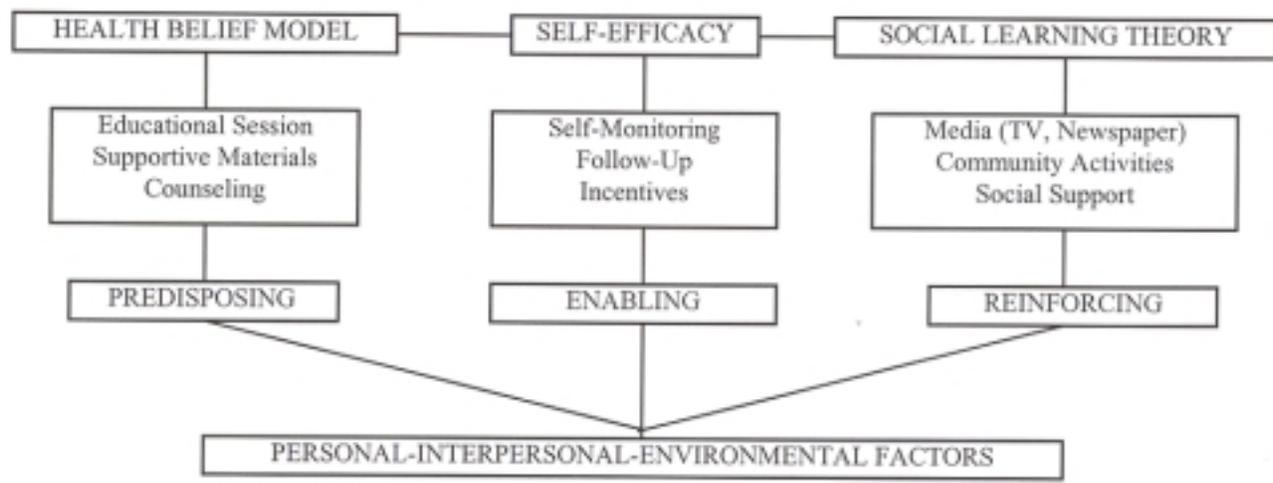
ity among Hispanic women should become a public health priority. Although health promotion programs aimed at Hispanic women have traditionally focused on maternal health (CDC, 1994), the prevalence of chronic diseases among this group calls for a different approach. Coronary heart disease, stroke, breast and colorectal cancer, diabetes, and hypertension are the leading causes of morbidity and mortality among Hispanic women (CDC, 1994), all of which point to physical activity as a particularly effective prevention strategy. In addition, the impact of chronic conditions on this group is expected to increase during the next two decades. As more Hispanics move into an older age group, more women will be living with chronic disease and disability for longer periods of time (Soto Mas, 1999).

Camine con Nosotros is a theory-based physical activity program for Hispanic women age 50 years and older in Maricopa County, Arizona. The program selected a theoretical framework through a step-by-step process that began with the identification of the goals and objectives of the intervention (see Figure 1).

Identifying Goals and Objectives

The goal of *Camine con Nosotros* was to decrease risk factors for cardiovascular disease by increasing participants' daily physical activity level. Because the qualifying requirements for participation included not having medical insurance or not qualifying for state

FIGURE 2
Camine con Nosotros Theoretical Design



medical assistance, it was expected that the participating population would include mainly low-income women from underserved communities. Because of the region's proximity to the border, a high percentage of Mexican-descendent participants were expected.

Focus groups and a review of the literature assisted in the identification of the measurable objectives of the program. Several studies have demonstrated that the level of intensity is related to participation in physical activities. Low to moderate intensity, home-based activities are more likely to be adopted (King, Haskell, Young, Oka, & Stefanick, 1995; Pollock, 1998), especially if cognitive-behavioral strategies and regular follow-up support are included (e.g., self-monitoring, personal contact, and feedback) (King et al., 1997). In addition, walking is one of the preferred types of leisure-time physical activity of U.S. adults, including Mexican Americans (Crespo et al., 1996), and it is well suited to the population in this study, which faces limited availability of and access to exercise facilities. Therefore, a home-based program was identified as the most feasible approach for this group. To be consistent with current recommendations for physical activity in healthy adults, the objective of the program was established as engaging participants in 30 minutes of walking, 5 days a week, during the period of the intervention (1 year). A moderate intensity level was adopted (between 50% and 70% of the age-predicted maximum heart rate, defined as 220 minus age).

Selecting the Theoretical Framework

Through focus groups made up of community lay health advisers (*promotoras*), prospective participants, and health education specialists, key issues related to physical activity in the population studied by *Camine con Nosotros* were identified. Although the idea of exercising appealed to focus group participants, program planners found three main issues of concern: (a) lack of knowledge of the relationship between moderate physical activity and health, (b) perceived lack of personal resources for engaging in regular physical activity, and (c) lack of environmental support (family, friends, and community) for performing the intended behavior. Three theoretical frameworks were selected to address these factors: the Health Belief Model (HBM), self-efficacy (SE), and the Social Learning Theory (SLT) (see Figure 2).

HBM. According to the HBM, a person's health-related behavior depends on his or her perception of (a) the severity of the problem or illness, (b) his or her vulnerability to that problem, and (c) the benefits and barriers to taking preventive action (Houchbaum, 1958). Although the model focuses on cognitive-perceptive variables, which have been questioned as predictors of physical activity behaviors (Dishman & Sallis, 1994; Mirotnik, Feldman, & Stein, 1995; Oldridge & Streiner, 1990), researchers recommended the use of the HBM for a number of reasons. It is known that

knowledge and information vary across populations (Finnegan, Viswanath, Kahn, & Hannan, 1993; Tichenor, Donohue, & Olien, 1970), and due to language and cultural barriers, Hispanics may have less access than other groups to quality health information (Jacobson, 1999). This may influence their health-related knowledge, perceptions, attitudes, and behaviors. The San Antonio Heart Study found that Mexicans were significantly less informed than non-Hispanic Whites on how to prevent heart attacks and on the benefits of regular exercise (Hazuda, Stern, Gaskill, Haffner, & Gardner, 1983). Other studies have found that Hispanics have more misconceptions about the health consequences of certain risk behaviors than Anglos (Ford & Jones, 1991; Perez-Stable, Sabogal, Otero-Sabogal, Hiatt, & McPhee, 1992). Therefore, a theoretical model such as the HBM, which emphasizes knowledge and perception, seemed appropriate for a population to which the health outcome of a preventive behavior (e.g., physical activity) may never have been properly presented. Other studies have shown an association between the knowledge of and belief in the health benefits of physical activity and the adoption and maintenance of an exercise program in men and women (Dishman & Gettman, 1980; Dishman & Steinhardt, 1990; Sallis et al., 1986). In addition, positive (benefits) and negative (barriers) behavioral outcome expectations, both principal constructs of the HBM, have been associated with physical activity among adults (Ali & Twibell, 1995; Neuberger, Kasal, Smith, Hassanein, & DeViney, 1994). It has been proposed that decreasing the perceived barriers to exercise may facilitate walking among healthy middle-class Hispanic adults (Hovell et al., 1991). All of these issues can be addressed through an educational component based on the HBM.

SE. SE is the confidence that people have in performing a behavior in a specific situation (Bandura, 1977). SE has been found to be significantly associated with the adoption and maintenance of an exercise program (Caspersen, Christenson, & Pollard, 1986; Sallis, Hovell, & Hofstetter, 1992; Sallis et al., 1989). It has also been positively correlated with physical activity among older adults, women (Sallis et al., 1989), and Hispanics (Hovell et al., 1991). SE is a major construct in SLT, and Bandura (1986) considers SE to be the most important prerequisite for behavioral change. Performance accomplishments, vicarious experiences, verbal persuasion, and physiological feedback are factors influencing SE (Bandura, 1977). It has been suggested that

feelings of low SE may be more common among racial/ethnic minority groups, including Hispanics. Some authors relate this lower SE among Hispanics to misconceptions about the relationship between certain risk behaviors and disease, given that misconceptions can give a false perception of the need for change (Jackson, Proulx, & Pelican, 1991).

SLT. Finally, Bandura's (1986) SLT depicts human behavior as an interactive model between environmental, personal, and behavioral factors. Reinforcement, observational learning, self-control, expectations, behavioral capability, and emotional coping responses, together with SE, are principal constructs in SLT (Bandura, 1977). Another construct is the environment, or the external factors that affect behavior. These factors can be particularly important for promoting physical activity among Hispanic women for several reasons. First, the term *environment* includes the social environment, such as family members, friends, and peers, who are part of the cultural legacy of Hispanics. In Hispanic culture, the family constitutes an emotional support system that includes both immediate and extended members. This broad conception includes the community, which generally serves as a support network (COSSMHO, 1995). Second, environment also refers to factors such as place, time, or facilities, which are also crucial in health promotion programs for underserved Hispanic communities. More than 26% of Hispanic families live in poverty (U.S. Bureau of the Census, 1993) and in neighborhoods that are likely to be lacking in available spaces for exercise and recreational activities. They may also live in areas with critical social problems and safety concerns. All of these factors influence the adoption and maintenance of a physical activity program.

The three theories discussed above were deemed appropriate for this program, given the particular characteristics of the problem to be addressed, the population, and the identified socioeconomic and environmental factors.

Connecting Theory and Practice

The next question that a program planner confronts after deciding on a theoretical framework is how to connect theory and practice, that is, how to develop an intervention that is consistent with the concepts and variables of the selected theory or theories. *Camine con Nosotros* took a comprehensive approach to addressing the modifiable determinants of physical activity. The

intervention considered individual, interpersonal, and environmental approaches.

To be consistent with the HBM, an educational session based on the three key variables of the model was developed. This included a lesson plan with goals and measurable learning objectives. The leading causes of mortality and morbidity within the Hispanic female adult population and their relation to physical inactivity served as a basis for addressing perceived susceptibility. Perceived severity was addressed by presenting the most common illnesses among this population for which a sedentary lifestyle constitutes a risk factor. Preventive action to be taken (increasing daily physical activity through walking) and specific instructions on how, where, and when were included for developing a positive effect on expectations (perceived benefits). Perceived barriers, such as the identification of an appropriate location, safety issues, and walking equipment, were also addressed. Activities for SE, such as assessing the heart rate while walking, preventing injury, and self-monitoring, were included as part of the educational component. In addition to the educational session, a bilingual booklet containing information learned during the session was developed and distributed to participants.

Other intervention components included a mail-delivered packet that was sent to participants monthly during the yearlong intervention (see Table 1). The packet included three items.

The first item was a self-monitoring daily activity log that participants were instructed to fill out and return by mail at the end of each month. The number of minutes walked and whether the target heart rate was reached were the two main sections that participants were asked to complete. Self-monitoring is considered an effective behavioral management technique for starting a physical activity program (Weber & Wertheim, 1989), and it provides internal reinforcement. A space for comments was provided on this form, which allowed participants to provide feedback on the program.

The second item was a component to provide incentive for participation and maintenance, and it consisted of a contest in which participants responded to monthly questions related to well-known Hispanic people and cultural and historical events. Incentives have been identified as a way of reducing perceived barriers and motivating people to act (Bandura, 1986). In addition, the questions allowed family members and friends to be involved, promoting a positive social environment.

TABLE 1
Program Components

| |
|-------------------------------|
| Educational session |
| Booklet |
| Mail-delivered monthly packet |
| Daily activity log |
| Contest |
| Newsletter |
| Staff telephone calls |

The third item was a newsletter to provide information about the program and to help participants maintain motivation and a positive attitude toward behavior, both of which have been positively correlated with physical activity (Dishman & Steinhardt, 1990; Kimiecik, 1992). Other topics that were expected to appeal to family members and friends (e.g., child development) were included to contribute to a positive social environment.

These components of the intervention focused on perception and SE, the core constructs within the theoretical framework chosen by *Camine con Nosotros*. Knowledge, attitudes, and skills, which are also predisposing and enabling factors that facilitate the initiation and adoption of health behaviors, were crucial factors addressed in these activities and materials.

An additional environmental component was developed to create positive social support related to community, family, friends, and peers. Social support is a core component of SLT and an important reinforcing factor that has been positively related to adult physical activity (Felton & Parson, 1994; Minor & Brown, 1993). Instrumental in this effort was the involvement of *promotoras de salud* or lay health advisers. The use of lay workers has gained recognition as a valuable health promotion strategy (Eng, 1993; Eng & Young, 1992; Israel, 1985; Meister, Warrick, Zapién, & Wood, 1992). This approach has been proposed as a way of overcoming cultural and linguistic barriers between health providers and community groups (Baker et al., 1997). As active community members, *promotoras* were involved in television and radio promotional activities, community health fairs, school and church meetings, and clinical activities that were organized for recruitment, promotion, and retention purposes. They assisted participants in filling out recruitment forms and evaluation questionnaires, and they served as facilitators for the educational session and follow-up

activities, which included regular phone contacts and personal one-to-one interaction. As peers, many *promotoras* participated in the walking program and provided vicarious support and modeling for participants. The *promotora* activities and the family involvement pursued through the contest and newsletter were directed toward creating a positive neighborhood and family climate for the promotion of physical activity.

Finally, a main concern of program planners should always be the cultural and linguistic competence of the intervention. Focus groups and *promotoras* provided continuous feedback during the assessment and preparation stages of the program, and a Hispanic health promotion specialist was involved in the planning stage and contributed to the development of the intervention and evaluation protocols. Materials were initially developed in Spanish by a Hispanic health education specialist and translated into English by a professional translator. The final version was then revised by a bilingual staff (*promotoras* and health professionals) to ensure appropriate language level and health information accuracy. All written materials were bilingual, and the educational session was offered in both Spanish and English.

Evaluation

The overall project included three levels of evaluation: process, impact, and outcome. The study involved a control group that received standard provider interaction with no specific walking message. However, given that the purpose of this article is to describe and justify the theoretical design of the intervention, only process and impact evaluation protocols will be described here. Outcome protocols and results will be subsequently reported.

As previously discussed, the heterogeneous characteristics of Hispanic populations and the lack of agreement as to the cross-cultural sensitivity of health behavior theories represent special concerns for practitioners when considering the use of theory. An additional barrier is the lack of available evaluation tools (Green, 1991), including social behavior instruments. Evaluation tools are particularly problematic when dealing with Hispanic groups because existing instruments must often be culturally and/or linguistically adapted, which changes their internal structure and compromises their validity and reliability (VanOss & Marín, 1991). In many cases, researchers working with minority groups have to choose an instrument, adapt it, and

use it, because validating an instrument requires additional time and resources that are often unavailable.

For *Camine con Nosotros*, we developed an evaluation protocol that included the implementation of existing instruments, the adaptation of existing instruments, and the development of new instruments by the investigators. The Arizona Activity Frequency Questionnaire¹ was used for assessing physical activity levels (related to the goal and general objectives of the program). This questionnaire is a bilingual instrument developed by the University of Arizona, and it is in the process of being validated. The instrument measures the total daily energy expenditure, amount of time spent on various activities, and metabolic-equivalent threshold (MET) levels. The instrument was not modified in this project. SE and attitudes-perceptions questionnaires were used to assess the overall impact of the intervention. The SE questionnaire was adapted from the Exercise Efficacy Instrument developed by Sallis, Pinski, Grossman, Patterson, and Nader (1988), and it consisted of a bilingual, seven-item protocol (e.g., "How confident are you that you could increase your physical activity without it interfering with things you like to do?"), using a 5-point Likert-type scale ranging from *I am sure I could* to *I can't*. The attitudes-perceptions questionnaire was developed by the investigators, and it is composed of a bilingual, five-item protocol (e.g., "I believe that simply walking can provide me with health benefits"), using a 5-point Likert-type scale ranging from *strongly agree* to *strongly disagree*. These three assessments were used in a pretest-posttest protocol over a 1-year period.

The impact of the educational session on knowledge and skills was also assessed using a pretest-posttest design. Two different questionnaires were developed by the investigators. These questionnaires were also bilingual, and the contents were based on the lesson plan and consistent with the learning objectives established for the educational session. Knowledge was assessed using a 10-item protocol (e.g., "Daily walking can prevent diabetes") and a true-false scale. Skills were assessed using a five-item protocol (e.g., "One thing I can do to stick to this program is") and a multiple five-choice scale.

The process evaluation focused not only on assessing participation but also on receiving feedback from participants and *promotoras* regarding the feasibility of the program, quality of materials and information, and their personal evaluation of the program. Three bilin-

gual questionnaires were developed by the investigators, two for collecting participants' feedback and one for collecting *promotoras*' feedback. Five process evaluation activities were scheduled over the 12-month intervention period.

CONCLUSIONS

Although, traditionally, the Hispanic population has been concentrated in certain areas of the United States, the growth of this group is projected to increase in every region throughout the country. It has been estimated that, by the year 2020, persons of Hispanic origin will comprise 29% of the population in the west, 14% in the south, 12% in the northeast, and 6% in the Midwest (Campbell, 1994). This demographic change is already having a great impact at the community level. Latino students make up more than 13% of the public school population, although they sit in about half of the desks in many urban schools (Soto Mas, 1999). In terms of labor force participation, the number of Hispanic workers will increase to more than 16 million by the year 2005, up from 10 million in 1992 (Soto Mas et al., 1997).

It is essential that health promotion programs be sensitive to these facts and develop programs that meet the needs of this growing population. Health behavior theories are a recommended resource for practitioners working with Hispanic communities, although it is the responsibility of researchers to provide constructs and evaluation tools that are consistent with the social, cultural, and linguistic characteristics of different Hispanic groups. In the meantime, existing theories constitute a valuable tool for practitioners who understand how to justify the selection of a theory and properly connect theory and practice.

Health behavior researchers can make a significant contribution toward this effort by focusing more on the process. Describing the rationale for program design, defining intervention components in detail, and providing accurate information on process and impact evaluation protocols are as important as the outcome and should be given equal importance in reporting. This is particularly critical for studies involving Hispanics and other ethnic/racial minority groups, because it will facilitate the use of theory and the design of more effective programs.

NOTE

1. The Arizona Activity Frequency Questionnaire is available on request.

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