

VISUAL AND PARTICIPATORY RESEARCH METHODS IN THE DEVELOPMENT OF
MASS COMMUNICATION HEALTH MESSAGES FOR UNDERSERVED POPULATIONS

BY

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THESIS

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ABSTRACT

Mass communication health campaign messages play critical roles in public health, yet studies show mixed effectiveness in reaching and impacting underserved populations. The purpose of this study was to evaluate the benefits of using visual and participatory research techniques towards health message development. Demographic information and levels of physical activity were first obtained in a sample of older Hispanic women ($n=23$; aged 71.9 ± 7.6 years) living in the city of Chicago. Perceptions of physical activity were then assessed using a visual research method known as photo-elicitation as well as supplementary methods. Health messages promoting physical activity were developed with a subsample of the target population using a participatory approach. Findings suggest that this method may be a valuable tool in the development of mass communication health messages, extracting rich and meaningful data from target audiences while fostering a sense of partnership between researchers and community members. Tailoring and improving the message design process around the needs of underserved populations—many of which are faced with a lack of health care resources, literacy, and social support—is essential in the effort to eliminate the burden of health disparities. This study takes a step towards building a more robust evidence-base for public health communication initiatives with the use of innovative interdisciplinary research techniques and may present new ways to strengthen the formative research process to better impact underserved populations.

ACKNOWLEDGEMENTS

You were born with wings

You are not meant for crawling so don't

You have wings... Learn to use them and fly

Excerpt from "You Have Wings" by Rumi

Thanks to my mentors, Andiara Schwingel, Wojciech Chodzko-Zajko, and Marian Huhman, for their unwavering support and guidance in my development as researcher.

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CHAPTER 1

INTRODUCTION

1.1 Public Health, Communication, and the Intersection between Them

In a fast-paced and evolving world, we stand at a crossroads, squarely at the intersection of two major disciplines: public health and communication. These are two bodies that have intertwined to develop a unique relationship over time, often impacting each other (Kreps & Maibach, 2008). Communication activities, within the arena of important health concerns such as tobacco use, chronic disease and cancer prevention, possess the distinctive propensity to influence beliefs, behavior and the social climate itself (United States Department of Health and Human Services, 2000; Evans, Uhrig, Davis, & McCormack, 2009). Conversely, a burgeoning focus on public health has provided the communication discipline with a platform to grow further by testing theories, methods, and effects. While many issues in public health continue to become more complex and create a need for advancement in public health and communication efforts greater than ever before, interdisciplinary science promises to generate enhanced solutions for the improvement of health outcomes (Kreps & Maibach, 2008).

Often referred to as an interdisciplinary science, the blending of public health and communication surpasses simply drawing ideas and methods from different disciplines and seeks, rather, to integrate disciplinary perspectives and build new scientific frameworks and applications (Stokols, Harvey, Gress, Fuqua, & Phillips, 2005). It refers to the partnership of two historically and traditionally separate fields of study—an integration to create a novel conceptual and theoretical lens towards several research areas.

Several similarities exist in the roots and objectives of public health and communication. The differences between them, however, may define a new methodological approach when merged, highlighting the individual strengths of each field. Public health and communication,

both steadily gaining credibility and stature in academia as well as the public sphere, stem from ancient Greek influence and intellectual traditions (Porter, 1999), combining social and physical science disciplines with those of the arts and humanities. Both disciplines concern themselves with the ways in which people function and at various levels of analysis—an individual, a social network, communities or populations—and the ways in which people interact with the attributes of place around them (Kreps & Maibach, 2008), ultimately aspiring to effectively respond to the challenges of society by understanding complex, dynamic systems (Renisow and Page, 2008).

Public health, along with its wide array of subfields, attempts to study threats to societal health and develop evidence-based strategies to improve the health of populations (Anderson, Brownson, Fullilove, Teutsch, Novick, Fielding, & Land, 2005; Kass, 2001; Brownson, Gurney, & Land, 1999). Communication, also composed of numerous subfields, aims to appreciate the influences of message design and exchanges as well as the conception of meanings (Morreale & Backlund, 2002) across various channels in society.

Both fields have experienced rapid growth and development over the years and their convergence at this intersection offers us new insight and innovations for addressing the emergent needs and promotion of public health, equipping us with more sophisticated tools in the areas of research, practice, education and public health communication (Kreps & Maibach, 2008). Further, the collaboration of these two disciplines may allow for key opportunities and answers in tackling the complex challenges in the realm of public health today.

1.2 The Needs of Public Health

A marked challenge for many Americans is a pattern of striking differences in health status that are present in certain groups. These growing and urgent social problems are known as “health disparities” and are acute among a number of population groups, creating inequalities in

health outcomes spanning various ethnic backgrounds, age, socioeconomic status, sexual orientation, and gender (Centers for Disease Control and Prevention, 2011). Bridging the gaps in health disparities necessitates that researchers and professionals in public health to employ the use of every beneficial strategy (Freimuth & Quinn, 2004).

Strengthening the effectiveness and reach of communication-based health initiatives may be a valuable response towards a variety of health disparities (Ratzan, 2001; Freimuth & Quinn, 2004) and issues currently facing public health—many directly corresponding to social norms, attitudes and knowledge related to health. The convergence of the public health and communication disciplines offers innovative and effective perspectives, applications and frameworks towards health promotion through communication (Kreps & Maibach, 2008), such as building awareness and informational resources, shaping behavior and perceptions, and empowering communities.

Corroborating the need for greater advancements in health-promoting communication efforts is the Department of Health and Human Services' platform for providing comprehensive, data-driven public health objectives, *Healthy People 2010*, which first recognized health communication as one of the nation's top health concerns (United States Department of Health and Human Services, 2009). Proposals for *Healthy People 2020*, fueled with its mission to foster a healthier nation with evidence- and needs-based strategies, have also identified a number of new communication goals. These goals recommend increasing the proportion of strategic health communication activities that include research and evaluation, increasing the proportion of adults who report having social support, and improving the health literacy of the population, and increasing the use of social marketing in health promotion and disease prevention (USDHHS, 2009).

Several objectives proposed by *Healthy People* are supported by and based on data collected by the National Cancer Institute's *Health Information National Trends Survey*. While focusing specifically on cancer communications, the *Health Information National Trends Survey* (HINTS) reveals important data regarding information seeking, perceptions of communication barriers, evaluations of information recognition and efficacy, and health literacy and knowledge (Health Information National Trends Survey, 2007). Results from 2003 and 2005 HINTS data demonstrate that—not only are effective health communication strategies critical for improving population health but also that—cancer communication has served a vital role in reducing the burden of cancer in the United States (HINTS, 2007). Furthermore, the Survey found that Americans are, in fact, continuing to seek information about cancer: 45% of respondents claimed that they had sought information about cancer in 2003, compared with 49% in 2005 (HINTS, 2007).

Underserved populations, typically underrepresented groups with less access to healthcare as compared with the general population—including the uninsured or lower socioeconomic status groups, the elderly, racial and ethnic minorities, and immigrants—are particularly vulnerable to disparities in health and health communication (Kelly, Sturm, Kemp, Holland, & Ferketich, 2009). Mass communication health campaign messages, although vital in building awareness and informational resources, show limited effectiveness in reaching and impacting underserved populations (Freimuth and Quinn, 2004) such as minority groups and aging populations. Emerging innovative and interdisciplinary tools in health communication research and social marketing offer new strategies towards the needs of public health (Bellows, Anderson, Gould, & Auld, 2008). These research-grounded strategies may provide creative and effective ways to improve message design that is tailored to the needs of underserved

populations (Hawkins, Kreuter, Resnicow, Fishbein, & Dijkstra, 2008; Horner, Romer, Venable, Salazar, Carey, & Juzang, 2009).

1.3 Research Objectives

Consistent with the overarching theme of interdisciplinary research, we sought to integrate perspectives from the public health and communication disciplines to explore the use of visual and participatory methods in health message development among underserved populations. Specifically, in a mixed-methods and cross-sectional study targeting older women of Hispanic origin, our primary objectives were to utilize a visual and participatory research approach to:

- (1) enhance our understanding of choices related to being physically active and maintaining overall wellness;
- (2) deepen our understanding of the complexities and sociocultural context that influences such decisions;
- (3) construct new messages promoting physically activity based on collected data; and
- (4) assess the benefits of using visual methods and participatory research in health message design targeting underserved populations.

We anticipated that the use of visual and participatory research methods would be an effective and useful means to derive data that captures the key drivers of physical activity behavior, such as sociocultural and contextual elements, in this target population.

CHAPTER 2

LITERATURE REVIEW

2.1 Physical Activity among Older Hispanic Women

One area of significant health concern is disparate physical activity levels found across older adults of Hispanic origin. Despite an array of health benefits, including enhancements in longevity, quality of life, physical and mental wellness (CDC, 2011), it is estimated that only 34% of Hispanic adults over the age of 65 engage in physical activity according to nationally recommended guidelines (CDC, 2008). Another 30% of older Hispanic adults are known to be inactive, achieving less than 10 minutes of moderate physical activity per week (Bennett et al, 2009), compared to over 40% of non-Hispanic whites who are physically active and only 20% that are inactive (CDC, 2008). Recent research also finds substantial discrepancy between self-reported physical activity levels and those collected by acceleration measuring devices, suggesting that American adults from minority and aging backgrounds may obtain even less physical activity than anticipated (Tucker, Welk, & Beyler, 2011). Further, many Hispanics struggle with predispositions to obesity, type II diabetes and cardiovascular disease, the advent of which may be prevented with regular physical activity (Hovell, Mulvihill, Buono, Liles, Schade, Washington, Manzano & Sallis, 2008). The significance of these disparities is additionally compounded by population projections that find the Hispanic population to be the fastest growing minority likely to triple by the year 2050 (United States Census Bureau, 2008).

Many older Hispanic women belong to underserved population groups, facing major barriers to physical activity and health care access due to language, culture and socioeconomic status (Van Duyn, McCrae, Wingrove, Henderson, Boyd, Kagawa-Singer, Ramirez, Scarinci-Searles, Wolff, Penalosa, & Maibach, 2007). Recent research suggests that Hispanic women may

conceptualize physical activity differently from non-Hispanic women (Fleury, Keller & Perez, 2009). This may be due to differences in sociocultural and contextual factors and may explain why this population is less responsive to public health messages and unaware of guidelines around the topic of physical activity. With large sedentary and physically inactive proportions of older Hispanic women coupled with increased risks of diabetes, obesity and cardiovascular disease, the need for successful public health intervention in this population group is critical.

2.2 The Need for Improved Communication Strategy

Communication studies demonstrate the power of formative research and the need for effective message design to change health behaviors and outcomes by employing strategies such as tailoring, personalization and content-matching (Atkins & Freimuth, 1989; Hawkins et al, 2008). Careful strategic message development based on needs-assessments of underserved populations to account for numerous barriers to physical activity is essential at each stage of formative research (Horner et al, 2009; Freimuth, Cole, & Kirby, 2001). Effectively translating communication efforts into changes in behavior requires an integrative understanding of the distinctive cultural and contextual elements and perspectives that are key determinants of physical activity and health behavior (Fleury et al, 2009; Maddock, Silbanuz, & Reger-Nash, 2008; Snyder, 2007).

Previous analyses of physical activity messages explain the importance of frame selection, persuasive technique, tailoring and the use of theory in the construction of new messages (Latimer, Brawley & Bassett, 2010; Berger, 2000). Message testing trends show that the use of gain framed messages, or those that highlight the benefits and convenience of a behavior, are often more effective in increasing physical activity than loss frame messages that address the potential negative impacts of not engaging in the behavior (Ko & Kim, 2010;

Rothman, Bartels, Wlaschin, and Salovey, 2006). Additionally, an emphasis of theory-based approaches, particularly messages that incorporate elements of self-efficacy and self-actualization, have proven to be advantageous in translating promotional messages into improved physical activity (Latimer et al, 2010). Studies exploring physical activity among adult and older Hispanic women find that it is imperative for interventions to be culturally competent and adapted to the needs and values of Hispanic communities (Hovell et al, 2008). Tailoring messages to match the contextual and sociocultural features of target audiences and its segments, thus, a critical step for strengthening communication strategy (Rodgers, Chen, Duffy, & Fleming, 2007) for this population.

Successful communication-based intervention encourages the use of social marketing approaches, using basic marketing principles towards health promotion (Kotler and Lee, 2007), and requires that the target audience's characteristics, perspectives and barriers towards certain health behaviors are thoroughly accounted for. Older Hispanic women, such as those studied in this research, not only experience language and cultural barriers, but also face barriers stemming from age, including fears of falling and lack of motivation (Cerin, Leslie, Sugiyama & Owen, 2010; Van Duyn et al, 2007). Health communication research emphasizes the importance of considering such characteristics using innovative, ethnographic and community-based approaches to fully understand pertinent audiences and the complexities of their needs.

2.3 Visual and Participatory Research Methods

Effectively reaching and impacting underserved population groups may necessitate researchers to take a step beyond traditional public health and communication research techniques. The use of visual and participatory methods have been utilized previously in media, psychology and sociology (Buckingham, 2009; Noar, 2006), but its use in public health research

is relatively nascent. In a method known as photo-elicitation, researchers provide participants with cameras or other instruments, inviting them to participate by taking pictures and visually interpreting a given subject (Wang et al, 1998). Guided by research questions and prompts, participants are given the unique opportunity to take pictures of meaningful elements of their environment—capturing objects, landscapes, events and people—that relate to the research topics being explored. Pioneering studies in this area have found the technique to be beneficial in extracting perceptions and attitudes defined by an individual’s viewpoint and context (Baker & Wang, 2006). In addition, studies in media and communication research find that the use of participatory and visual methods may be a viable tool in bridging the gaps between researchers and research subjects, an effective technique for comprehensive learning about various social issues and phenomena (Buckingham, 2009).

The use of photo-elicitation to grasp sociocultural perspectives and develop research-grounded health communication messages for Hispanic women around the topic of physical activity has been particularly limited. In a recent study, Fleury and colleagues (2009) investigated cultural elements and resources that influence physical activity among Mexican women aged 23-60 using photo-elicitation. The researchers determined that the use of the visual research technique was valuable in delivering rich, meaningful qualitative data that perhaps may not have been extracted through words and conventional methods alone.

Ultimately, the researchers concluded that creative formative research addressing cultural, contextual and social factors that drive physical activity is especially important in designing research-grounded interventions for underserved and physically inactive Hispanic women (Fleury et al, 2009). Our research sought to explore these issues and the capabilities of

visual and participatory methods in greater detail within the older, female Hispanic population, which, to our knowledge, has not yet been surveyed.

2.4 Summing it All Up

Previous literature from the fields of both public health and communication played a vital role in informing the research team about the needs of older Hispanic women with respect to physical activity as well as recommendations for enhancing communication-based initiatives. We learned that, not only would a collaborative approach between communication and public health likely be beneficial for older Hispanic women and their physical activity participation, but also that creative research techniques may improve the overall impact of such approaches, providing in-depth understanding of an audience's perceptions and contextual background. Combining the use of these particular innovative techniques with the physical activity needs of older Hispanic women previously had not been explored, and understanding its capabilities in further detail may assist with some of the public health challenges faced by underserved populations. These findings were elemental in determining the scope and design of the research study, ultimately providing a research-grounded foundation for our efforts.

CHAPTER 3

METHODOLOGY

3.1 Study Design and Theoretical Framework

The purpose of this mixed-methods study was to learn how older Hispanic women might benefit from a communication-based intervention promoting physical activity that is culturally sensitive and driven by visual and participatory research methods. Specifically, targeting older women of Hispanic origin, our objectives were to enhance our understanding of the choices related to being physically active and maintaining health, deepen our understanding of the complexities and social context which influences such decisions, and assess the value in using visual methods and participatory research in health message design targeting underserved populations.

The study procedure was guided by the Social Ecological Model, a theoretical framework that helps explain the role of multiple levels of integration and influence in shaping individual behavior and beliefs (Stokols, 1996). In order to probe the relationships between the individual and the broader community (both physical environment and sociocultural context), this study adopted a community-based participatory research technique known as photo-elicitation, inviting participants to take photographs of salient features in their lives that are both personally meaningful and possess significant explanatory power.

In order to make the data collection process more manageable, the procedure was divided into three separate phases, each focusing on a different component of the research and building upon the next phase. The first phase was centered around the photo-elicitation method and participant screening. Visual images gathered from photo-elicitation were explored in greater

detail through in-depth interviews in the second phase. Finally, the third phase examined the use of visual and participatory technique in the health message development process.

Participant sample in this study included immigrant women of Mexican origin who are over the age of 65. Most participants, representing both physically active and inactive lifestyles, were from low-income families with little education. They were recruited from four different urban neighborhoods in Chicago (zip codes: 60608; 60632; 60804; 60623) that are known for their large Mexican population and commonly referred to as “Little Village.” We established networking links with community agencies (Cook County Area Agency on Aging, Little Village Community Council, and the Saint Agnes Church) that each had extensive experience working with Hispanic seniors in the Chicago area and agreed to assist us in recruiting participants who both self-identified as Mexican and were females over the age of 65.

3.2 Phase One: Photo-Elicitation and Screening

Twenty three participants (n=23; aged 71.9 ± 7.6 years) were recruited for Phase One of the study. All research materials and guidelines were approved by the University of Illinois Institutional Review Board and were provided in both the English and Spanish languages to accommodate for linguistic preferences. All participants signed a consent form approved by the Review Board upon voluntary enrollment in the study, after which orientation took place to familiarize each participant with the study goals and provide basic instructions for their participation.

In order to accurately obtain physical activity information, participants were asked to wear an accelerometer during two week days and one weekend day. An instrument that measures acceleration and intensity of human activity, accelerometers have been previously used to

successfully gather physical activity data among Hispanic populations and older adults (Marquez, Bustamante, McAuley, and Roberts, 2008; Murphy, 2009). This step enabled us to stratify the target audience into segments that were either physically active or inactive based on actual physical activity data and later develop messages specific to physical activity behavior. A demographic questionnaire was also administered to identify each participant's body mass index, self-reported physical activity levels, socioeconomic status, and other characteristics.

In addition, participants were asked to use a disposable camera to capture images of meaningful physical activity opportunities as well as perceived barriers to physical activity. Participants' photography was guided by a set of prompts provided by the research team. Using a modified version of the procedure of Fleury et al. (2009), we asked the older women to take photographs of resources they identify for engaging in physical activity, with particular attention to factors that make staying active easier or more difficult. We encouraged participants to define physical activity for themselves, across a wide range of dimensions of physical activity including home, transportation, work, and leisure time physical activity. Previous studies have shown discrepancies among Hispanic adults with respect to the different dimensions of physical activity (Marquez et al, 2008), an aspect that this study has taken into consideration in through photo elicitation. Women were asked to include photographs representing both week and weekend days.

Participants first engaged in ethics and instructional training (in English and/or Spanish) regarding using accelerometers, cameras and taking photographs for the study. Participants were asked to take about 27 pictures during this phase of the study.

Upon completion, the accelerometer and cameras were retrieved by the research team for data analyses.

3.3 Phase Two: In-Depth Interviews

Nine participants were selected from Phase One for follow-up interviews. In order to ensure that we obtained both active and less-active participants, we used accelerometer data to assist in the identification of interview participants. We included four older women that engaged in at least 150 minutes per week of moderate-intensity physical activity and five older women who clearly did not meet the Department of Health and Human Services' (DHHS) Physical Activity Guidelines (≤ 30 min/wk). We included individuals from all four neighborhoods in this phase of the study.

For each individual, we selected 4-6 of their own photos that served as discussion topics for the interviews. The interviewer then explored in greater detail how active and sedentary participants view physical activity opportunities in their local environment, and probed about factors that may pose as barriers or facilitators for physically active behavior. A sample interview guide was developed to address these factors based on participants' visual data (Table 1). For each photograph, participants were asked to describe (a) What the image is? (b) What is happening in the photograph? and (c) Why the image is important? Among the questions used to elicit detail included: (a) What do you see in this photograph? (b) What is happening in the photograph? (c) What resources for physical activity are shown in the photograph? and (d) In what ways do these resources influence physical activity? Finally, participants were asked to look at all of the photographs together to identify any recurring ideas or themes around resources for physical activity, and to comment on the relevance of these themes. Interviews were audiotaped and held in English or Spanish, depending on participants' preferences. Upon completion of the interviews, each was transcribed, and all data - photographs and interviews - were coded in order to analyze and explore common, recurring themes.

3.4 Phase Three: Communication Strategy and Message Development

Our objective in this component was to develop a communication strategy that could elicit a positive change in this community by increasing awareness and promoting physical activity in a manner that was meaningful to the target audience. We sought to drive this research process using the visual and supplementary data collected from previous phases as well as focus groups to design and pretest messages. Communication strategists recommend that this phase occur in a series of roughly three steps (Berkowitz, Huhman, Heitzler, Potter, Nolin, & Banspach 2008; Freimuth, Cole, & Kirby, 2001). The first step involves an exploration of the motivators and barriers the target audience has about the behavior. This facilitates the development of a “message platform” on which to build a group of message concepts. The second step is message concept testing where several message ideas are shown to members of the target audience. From this information, the messages that most resonate with the target audience are further developed into the final materials that will be disseminated for the campaign. If resources are available, final message testing can be done to ensure that there are no unintended consequences of any of the messages or images.

Preproduction Exploratory Research and Theoretical Framework

Previous literature served as a guide with respect to study and message design, and the photo-elicitation method, supplemented with interviews, demographic and physical activity data functioned as a primary method for preproduction research. These sources and techniques indicated the specific health needs of this population and the sociocultural context that influences their physical activity behavior. Learning this information helped us determine key factors that needed to be accounted for in our health messages.

Remaining consistent with the use of the Social Ecological Model in previous phases, this framework was also reflected in newly constructed messages, recognizing that physical activity behavior and beliefs are a product of the individual and other levels of the physical and social environment. Additionally, principles of self-efficacy, social marketing and the marketing mix (price, promotion, production and place) guided our conceptualization of physical activity promotion.

Using a participatory approach, an hour-long focus group was facilitated to create a platform upon which a portion of the study participants could voice their opinions and preferences with respect to message design. Although only two participants were able to attend the focus group, they represented both physically active and inactive lifestyles. Despite this limitation, we obtained participant feedback in a small group discussion format, which was then incorporated during message construction. The session was held in Spanish and audio-taped.

We collected perceptions and responses based on a set of objectives and questions (Table 2) and obtained feedback on selected content from the National Institute on Aging's Everyday Guide on Physical Activity and Exercise (2009) as well as our own follow up questions (Table 3). Messages from this exercise guide served as a starting point for concept testing: critiquing previous physical activity messages targeting the older adult spectrum, followed by more general questions we asked participants regarding key cultural elements to account for in future messaging. New message concepts were then created based on focus group feedback, review of visual data, and literature review.

Audience Segmentation and Channel Selection

We allowed our data to determine where our target audience should be segmented and how to best reach them. Individual physical activity levels based on data from the accelerometers

and health questionnaire data indicated which participants were generally physically active and which were not. This also provided more insights as to the needs of specific segments within larger sample. We chose to segment our audience by their characteristics and needs pertaining to physical activity. Visual data, supplementary interviews and focus groups very clearly illustrated channels, locations and sources that might serve as valuable messaging platforms.

Message design

At this stage, we constructed new messages based on participant input and visual data as well as research team feedback, ensuring that messages used persuasive technique, promoted self-efficacy, and were sensitive to cultural values and norms of older Hispanic women. Participation and buy-in from the women were important during this step as we were interested in both learning first-hand about the sociocultural elements that need to be addressed in future messages and developing a sense of partnership with the women to take part in evoking positive change in the community through physical activity.

Our aim was to highlight the convenience and benefits of physical activity, describing simple ways to be active and the risks associated with being physically inactive. We developed messages using both gain and loss frames, persuasion, and tailoring strategy for mass communication health campaign messages that would meaningfully encourage physical activity. We also wanted to build credibility by acknowledging those who were most important to older populations and those from minority and ethnic backgrounds, such as doctors, family members, and the community.

3.5 Tables

Table 1. Sample Interview Questions, by Theme (cont.)

General Questions	<p>-What do you see in this photograph? What is this an image of?</p> <p>-What is happening in this photograph?</p>
Family	<p>-What role do these family members play in your life?</p> <p>-Does caring for your family require any sort of physical activity?</p> <p>-Is physical activity important to you or your family?</p> <p>-How might a support system that included your family members encourage you to be more physically active?</p> <p>-If your family members regularly participated in physical activity, would this encourage you to be more active?</p>
Religion	<p>-What significance does religion have in your everyday life?</p> <p>-Do your religious beliefs or practices impact your decisions to be physically active or inactive?</p> <p>-Would an exercise program organized and run by your church be encouraging for you?</p> <p>-How do you think your local churches can help keep people in your community active?</p>
Community and Environment	<p>-How do you feel about your community and environment? The neighborhood, safety, people, etc.</p> <p>-How much time do you spend around your neighborhood each day? What sorts of activities do you engage in?</p> <p>-Do you think that your community has adequate resources for you to be physically active?</p> <p>-What changes, if any, would you like to see in your community to encourage physical activity?</p>
Food and Cooking	<p>-How often do you cook and prepare food?</p> <p>-Is cooking a major component of your daily life?</p> <p>-Do you feel that cooking is a physically intensive task?</p> <p>-How important is eating healthy to you?</p>

	<p>-Do the roles of food and cooking in your culture impact how physically active you are?</p> <p>-How useful or encouraging would a wellness program that emphasized health eating and lifestyles as well as physical activity be to you?</p> <p>-What suggestions do you have in improving physical activity when thinking about food and cooking in your daily life?</p>
<p>Tradition, Culture and Norms</p>	<p>-To what extent do you feel your culture has developed its own gender roles and social norms? What are they?</p> <p>-How much of a presence do culture and norms have in your life?</p> <p>-How do these roles encourage or discourage you from being physically active?</p> <p>-How do you think physical activity can be encouraged through the rich Mexican culture that you are a part of?</p>

Table 2. List of Focus Group Planning and Objective Questions for Exploration (cont.)

<ul style="list-style-type: none">▪ What do participants want to see in health campaign messages geared towards them with respect to physical activity? What would they be most receptive to?▪ What motivates them to change their behavior?<ul style="list-style-type: none">○ What tangible rewards would increase their motivation? For example, a coupon for walking shoes.○ Probe for what non-monetary rewards would increase their motivation (most likely something like feeling stronger, knowing they will be less burden on their children for caring for them—this could be a big one—you are getting at these in the messages on the next page, also, but here to help the moderator think of this. It is the “price” element in a marketing approach.▪ What cultural elements would they like to see included in messages?▪ Should themes that have emerged from our data be a critical aspect of future messages? (ie. Family, religion, food, etc.)?▪ What are participants’ responses to previous messages from the National Institute on Aging’s exercise guide?▪ What channels would be most effective in reaching this population?
<ul style="list-style-type: none">▪ Individual Level Questions:<ul style="list-style-type: none">○ What are your overall thoughts on the messages that we have just discussed with you? Do you find them to be relevant to your everyday life?○ What aspects of your life encourage you to be healthy the most? (ie. Family members or friends, connection to God, personal satisfaction, etc.)○ If I was to post signs encouraging physical activity in your community environment, where should I post signs to make sure that you are able to see and read them? (ie. A laundromat, church, community center, etc.)▪ Community Level:<ul style="list-style-type: none">○ In your opinion, in order to successfully promote physical activity among older Mexican women in a communication campaign, how important is it that the

following topics be considered: should probe more deeply about what about these are important: what emotional strings are they pulling? So, what feelings do they have about family—again will likely be wanting to live a long time to see their grandchildren grow up and don't want to be a burden on their children.

- Family, religion, food, community members and friends, etc.

Table 3. List of Focus Group Questions for Message Development and Concept Testing (cont.)

Message Concept	Topics Addressed	Focus Group Question
<p>Even if you have difficulty standing or walking, you can still exercise and benefit from it. In fact, in most cases, you have more to lose by <i>not</i> doing anything.</p>	<p>Importance of physical activity</p>	<p>What are your thoughts on this message? Do you agree that you and other older adults have a lot to lose by not being physically active?</p>
<p>See how Greta has benefited from regular exercise: “At age 67, I’m in the best physical condition of my life. Two years ago, I joined a low-impact aerobics class at a nearby senior center. The entire routine is done to music, planned and led by an instructor. My balance has improved greatly, and my osteoporosis has remained stable.”</p>	<p>Testimonials on the effects of physical activity</p>	<p>When hearing about people in your own age bracket who exercise regularly and have improved their health by doing so, do you find that this impacts your attitudes towards physical activity? Do you feel inspired to be more active?</p>
<p>Make it a Priority: Being active and exercising regularly can change your life.</p>	<p>Importance of physical activity</p>	<p>This message conveys a clear and simple message about being active. Do you find it to be effective in encouraging physical activity as compared with the other messages? Why or why not?</p>
<p>Strength training physical activities can maintain your ability to: 1. Carry a full</p>	<p>Benefits of physical activity in everyday life these emotional</p>	<p>Do you believe that strengthening your body is important and good for your health? Are the examples listed</p>

<p>laundry basket up the stairs 2. Carry your small grandchildren 3. Lift bags of mulch in the garden</p>	<p>benefits are critical. Moderator should spend a lot of time here.</p>	<p>important or relevant to your daily life?</p>
<p>There are many ways to fit exercise into your regular routine. Rethink your priorities: how important is an entire afternoon of TV? How about a walk after lunch instead?</p>	<p>Making physical activity convenient</p>	<p>What are your opinions on this message? Do you think that making physical activity a convenient part of everyday life would encourage physical activity among older Mexican women? What changes do they need to make to their place to be active to make it appealing for physical activity?</p>
<p>Try to do moderate-intensity exercises on 5 days per week for 30-minute sessions each. Should this be the 150 minutes per week guideline, which was designed so people wouldn't feel locked into 30 minutes 5 days a week?</p>	<p>Physical activity guidelines</p>	<p>This message conveys the national physical activity recommendations. What are your thoughts on these guidelines? Do they seem easy to understand and achieve? Do they seem too difficult? Why?</p>

CHAPTER 4

RESULTS

4.1 Phase One: Photo-Elicitation and Screening

Employing the use of accelerometers in this initial phase allowed us to clearly identify participants who were typically physically active and inactive. This was critical in deepening our understanding of the needs of the target population with respect to physical activity, as well as in defining audience segments for subsequent study phases. In a quantitative analysis of accelerometer data, on average, women in our study engaged in only 12 minutes of moderate intensity physical activity per day. Sedentary activities, on average, composed about 436 minutes per day, while 354 minutes were spent on light physical activities. Data pointed to high levels of physical inactivity and a lack of vigorous intensity activity across all participants. Only two participants achieved the DHHS recommendation of 150 minutes of moderate or vigorous physical activity over a seven day period. Indeed, the majority of women were far more sedentary, or physically inactive.

Consistent with findings from Tucker and colleagues (2011), analyses of the demographic questionnaire data revealed significant discrepancies between accelerometer-based physical activity measures and self-reported estimates of physical activity. Data showed that 56% of subjects had a body mass index above 30, identified as obese under DHHS guidelines; 33% were overweight with a body mass index that fell between 25 and 29.9. Approximately 11% of participants were below a body mass index of 24, considered by DHHS standards as a normal weight.

4.2 Phase Two: In-Depth Interviews

We performed a qualitative content analysis of all visual data from participant photographs and verbal data from in-depth interviews. We collected a number of prominent themes emerging from the qualitative interviews and visual data. Participants seemed receptive towards the photo-elicitation process and the interviews that were based upon their photographs. Visual data captured many important elements in shaping physical activity behavior, including family and community members, resources and settings around the neighborhood, pets, and social activities. Participants were also able to elaborate in detail on key components of their photographs during interviews, allowing for greater explanatory power. Photographs provided a lens for researchers to learn and visualize social and physical contexts in which participants live and make health-related choices, extracting deeply personal narratives that contribute towards the foundation of beliefs and behavior.

Categorized according to the Social Ecological Model and representing factors that play critical roles in influencing physical activity choices, the themes that emerged from the data. These findings are critical to our understanding of the sociocultural context shaping the target audience and developing health-promoting messages.

At the individual level, health status, beliefs about physical activity, health and wellness, previous physical activity behavior were major indicators for physical activity. Many participants suffered from common conditions associated with old age, such as depression, lack of physical strength and motivation and Hispanic heritage diabetes, such as diabetes and obesity. These factors combined to pose major barriers towards being physically active. Additionally, how participants prioritized and viewed being healthy was a key determinant of physical activity. Those who understood and valued the benefits of physical activity were often more active. Finally, prior physical activity was an important trend and determinant of current physical

activity behavior. We often found those participants who reported being active when they were younger were active as older adults; similarly, those who did not previously value physical activity would likely be found inactive as older adults.

At the social environmental level, family influence and social network support, as well as community involvement and activity played critical roles with respect to physical activity. Most participants did not receive a sense of support from family members to be physically active, perhaps drawing on overarching cultural norms. Previous literature in this area suggests that increasing social support is a key strategy in improving physical activity participation.

While most participants did not reach recommended levels of physical activity, many were active in social and friend networks. Most participants were keen and motivated to engage in social activities, although very few of them were related to improving health and being physically active. Increasing the number of social activities that target exercise may be beneficial for this population group.

Most participants were active in community and church-related groups and activities. Since these platforms played a vital role in participants' daily lives, increasing and promoting physical activity at a community level through neighborhood organizations is critical.

At the physical environmental level, the availability of physical activity resources and opportunities, weather, and neighborhood safety were important factors in driving physical activity perceptions and behavior. Participants often felt that their neighborhood lacked physical activity resources such as gymnasiums and exercise equipment that would help them remain active. We found that building awareness around this topic may be valuable for this community, highlighting methods of physical activity, such as walking or dance, that do not require many resources.

Many participants reported a greater lack of motivation to be physical active during the winter season, citing the cold as a hindrance towards being active. This pointed towards a need for strong physical activity promotion in the warmer season, and strategies to encourage it in the colder months. Some participants felt that their neighborhood and residential area had become less safe over the years, and while this factor was not often a major barrier towards physical activity, promoting neighborhood safety may also help promote outdoor physical activity.

In terms of cultural and social norms, we found that physical activity was also being influenced by values and perceptions on physical activity and being healthy, perceptions on the role of women in the household, and the role of religion in everyday life. We found that most participants did not believe Mexican culture to be supportive of making physical activity a part of daily routine. Cultural values seemed to dictate many roles played by older women, including cooking and cleaning, taking care of children and grandchildren, watching television, and visiting the local church. The culturally defined roles didn't leave much room for promoting physical activity and wellness, and most women who were active were driven by individual factors as opposed to cultural norms. This illustrates the increasing need to address physical activity through a sociocultural context in order to reach participants in a meaningful manner.

According to the data extracted, the roles of women in the household did not typically include physical activity. Expectations of older women included household chores and looking after family members, but did not extend to enhance a woman's health through physical activity. This in part, may also be due to machismo and perhaps a belief that women are responsible for their family, but not their own health. Changing such perception is an initial step in changing physical activity behavior among older Hispanic women.

All participants were self-reportedly religious: making prayer, worship and church visits a routine part of their lives. However, while a connection to God was a key motivating factor for many aspects of daily life, this did not typically extend to encourage physical activity. As a result, we reasoned that building physical activity awareness within a religious context may improve physical activity behavior and knowledge, since faith was an important influence for the target audience. We identified this as a vital component to address in future communication efforts as it impacted nearly the entire sample group, and found a strong need to demonstrate the importance of (1) the role of the faith and faith-based institutions as a platform for physical activity intervention and education, and (2) the role of religion in encouraging taking care of one's body and health.

4.3 Phase Three: Communication Strategy and Message Development

Creating a platform for study participants to engage in the development of our communication strategy provided much insight for health message design. This method, coupled with previously collected visual and supplemental data, facilitated an environment where participants could directly share their thoughts and perspectives on the message development process. While the focus group consisted of very small numbers of participants, it seemed to supply a voice to the older Hispanic women, who responded positively to these activities and were happy to share their perceptions of the needs of the community. The procedure allowed the research team to obtain valuable first-hand information about the characteristics and preferences of our target audience, enabling us to clearly identify audience segments, channels, and cultural elements—from participants' own words and images—that were vital for building a communication initiative.

This unique message development process had a number of implications for health communication efforts focused on older Hispanic women and other underserved populations. For many populations that are low in literacy, socioeconomic status and health care access, conventional formative research methods may not be wholly sufficient to explore the sociocultural and contextual drivers of health behavior. The creative visual and participatory research techniques used were well-suited for use with this population. Partnering with the target audience to build health messages and using visual data to drive the formative research process was not only helpful for the research team to extract important feedback, but also provided community members with an opportunity to be involved with an effort that was relevant to their society's overall wellbeing.

Through this procedure, we learned that participants generally seemed to believe in the physiological and mental benefits of physical activity, claiming that it provided energy, happiness, social activity, a sense of wellness and achievement, improvement of physical appearance, and balance. A significant issue for many older adults, balance and physical strength was an especially relevant problem for participants, informing us about its importance when designing new messages for this population. Derived directly from members of the community, we realized that such benefits might be valuable to include in social marketing campaign messages promoting physical activity.

Participants seemed clear on which types of messages they preferred, reacting particularly positively to loss frame messages that highlighted the risks associated with physical inactivity. Gain frame messages also elicited positive responses, perhaps due an alignment between the benefits of physical activity and participant perception. Having explored a testimonial-based message as well, we found that, while informational, such messages may be

too complex and lengthy for a simple health campaign message targeting this population, many of whom face low literacy rates as well as low levels of physical activity.

Emphasizing the convenience of being physically active was important for participants. Our interview data found that many older Hispanic women spend large portions of the day watching television and soap operas, a prevalent cultural trait among both active and inactive participants. As a result, we found that framing physical activity as a convenient and easy part of the day that can be balanced with a moderate amount of sedentary activity would be essential for future messages.

When it came to obtaining feedback on physical activity guidelines in order to assess how easy or difficult they were to comprehend, both inactive and active participants claimed that the recommendations were easy to understand and follow. This may point towards either a social desirability bias or perhaps cognitive dissonance among inactive older women, who may believe in the benefits of physical activity but do not act correspondingly. We felt that accounting for such discrepancies would also be important for future health messages since many of the target audience were inactive but may be aware of guidelines and benefits around the topic of physical activity.

Participants were very clear on motivating factors for physical activity and the best channels for reaching the target audience. Exercise activities that were a part of a structured program that included friends seemed to be strongly preferred. The active participant also stated that she continued to motivate herself to be active, underscoring the need to enhance self-motivation among inactive older Hispanic women perhaps through messages that focus on self-efficacy as well as social networks. Interestingly, participants believed that the best channel to reach the target audience was the Laundromat facility in the community, of which some

participants had taken pictures during the photo-elicitation phase. Additionally, grocery stores, drug stores, church and church newsletters, restaurants, community centers, radio, television and newspapers were also brainstormed by participants as valuable channels.

When asked about their recommendations for a mass communication health campaign in their community, participants believed that acknowledging the cultural importance of family and food to Hispanic women was critical to changing perceptions about physical activity.

These findings, along with previously collected visual and interview data, provided a base for our newly constructed message concepts (Table 4). Having analyzed participant responses and feedback, we assessed that, although this particular community of older Hispanic women continues to face limited resources for physical activity, a strong and culturally sensitive communication-based initiative may be of significant value to the target population. Future messages would need to adequately promote physical activity as well as convey a sense of support and maybe even function as a tool for community building.

4.4 Tables

Table 4. Newly Constructed Message Concepts

Message Concept	Theoretical Construct, Frame and Themes
<p>Being active is easy, enjoyable, and helps you live longer. Why not take a walk around the neighborhood for half an hour every morning instead of watching a soap opera on TV?</p>	<p>Gain frame (addressing benefits of physical activity) and self efficacy <i>Emphasizing convenience of physical activity</i></p>
<p>Take a walk around the park or go salsa dancing with friends: physical activity is a key to a healthier and happier you.</p>	<p>Gain frame/tailored towards the community <i>Addressing friends, cultural elements and associated health benefits</i></p>
<p>Doctors say that diabetes is one of the leading causes of death among Hispanics. Reduce your risk now by adding physical activity to your daily routine.</p>	<p>Loss frame/building credibility <i>Type II diabetes health risks</i></p>
<p>It's simple. To avoid falls, I need to improve my balance and become stronger. That's why I exercise 5 days a week - for just 30 minutes each day. I've got too much to lose if I don't.</p>	<p>Mixed-frame message <i>Addressing physical activity guidelines, and health benefits related to older adults</i></p>
<p>I want to plant flowers in my garden and take care of my grandchildren, but I can't do that without my strength. That's why being physically active everyday is important to me and important to my family.</p>	<p>Loss frame/self efficacy <i>Overcoming barriers to physical activity</i></p>

CHAPTER 5

DISCUSSION

5.1 Using an Interdisciplinary Approach towards Targeted Message Development

Creating a true impact in the health outcomes of underserved populations is a key arena for change in public health. Furthermore, improving health communication research methods is an important direction for public health and a step towards reducing the burden of health disparities (Ratzan, 2001).

The juncture of two major disciplines, public health and communication, present an array of benefits for the future, providing perspectives and frameworks that are integrative and well-suited to help bridge the gaps in health outcomes among underserved populations. The intersection of health message design with participatory and visual research methods, in particular, brings with it many exciting possibilities for public health, and this study is only an initial step in understanding its capabilities. Our method gave our participants a voice—a platform upon which they could express their views, perceptions and needs around the topic of physical activity. Ultimately, this provided a foundation for mass communication health campaign message development and provided an inventive approach towards understanding our target population that may, in turn, yield improved results within the context of disparities in physical activity.

5.2 Limitations

While this study had much strength in its use of mixed and creative methods to extract rich data, as well as its emphasis on sociocultural context and interdisciplinary approach, it also had a number of limitations. One limitation of this study was that our sample size was relatively

small. Conducting our research with fewer participants allowed us to obtain detailed individual information, but did not allow for large-scale generalizability or external validity with respect to the greater population of older Hispanic women. Next, participants were recruited on a voluntary basis at a local church and community center, but recruitment efforts may not have reached women of other parts of the community, which may also have impacted our external validity. Our results may not be applicable to larger portions of this population due to this sampling limitation. In terms of instrumental limitations, the self-report nature of participant questionnaires, interviews and focus groups may introduce additional limitations such as social desirability biases. Finally, the cross-sectional nature of the data presents a methodological limitation. Our study was a snapshot of a point in time, and does not provide any information of changes in perceptions or behavior over a longitudinal period.

5.3 Directions for Future Research

Having analyzed participant responses and feedback, we assessed that, although this particular community of older Hispanic women continues to face limited resources for physical activity, a strong communication-based initiative that is culturally sensitive and driven by participant involvement may be of significant value to the target population. Future messages would need to adequately promote physical activity as well as convey a sense of support and maybe even function as a tool for community building.

Future directions for this research after the message development phase include constructing new messages, pre-testing message efficacy, as well as implementation and evaluation of a mass communication health campaign promoting physical activity among older Hispanic women that employs visual and participatory methods in its formative research. Specifically, the next step following concept testing would entail finalizing message content and

pre-testing with the target audience during additional focus group sessions. After this point, messages would be prepared for mass communication dissemination through printed educational materials and public service announcements, incorporating concepts and channels that were defined from participant data. Collaborating with community and faith-based organizations proximal to the target audience may help develop a sense of partnership to increase the efficacy of the campaign and serve as a resource for awareness building. Process and outcome evaluations would follow these steps to assess effectiveness of the campaign development phase as well as effectiveness of the messages to increase physical activity knowledge and change physical activity patterns.

The significance of these techniques—the intersection between message development and visual and participatory methods—are only beginning to demonstrate their capabilities in better understanding the needs of target audiences and guiding the message design process. Advancements in innovative communication-based public health initiatives may not only strengthen interventions focused on older Hispanic women, but other underserved populations as well who encounter similar challenges in being physically active and maintaining overall wellness. The juncture between communication and public health, thus, brings with it many new possibilities (Kreps & Maibach, 2008) with the promise to make a difference and change lives.

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