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Evaluation of the Arthritis Foundation's *Camine Con Gusto* Program for Hispanic Adults With Arthritis

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Abstract

Introduction—*Camine Con Gusto* (CCG) is the Hispanic version of an evidence-based walking program for people with arthritis. This study examined CCG outcomes, feasibility, tolerability, safety, and acceptability and potential tailoring.

Method—A pre and post 6-week evaluation was conducted in Hispanic people with arthritis. Outcomes included pain, stiffness, fatigue, functional capacity, helplessness, and self-efficacy. A formative evaluation with program participants and key stakeholders explored program tailoring.

Results—Participants' mean age was 46.9 years, 44.4% had a high school degree or less, 2.5% were born in United States, 60.1% spoke only Spanish, and 74.7% were female. Moderate effect sizes were found: 0.50 for pain, 0.75 for fatigue, 0.49 for stiffness, 0.33 for function, 0.26 for helplessness, and 0.24 for self-efficacy. There were 285 participants recruited with an 82% 6-week retention (feasibility), no adverse events were reported (safety), and 98% reported program satisfaction (acceptability). Recommended adaptations included simpler language, more pictures and content addressing nutrition and chronic conditions, shortened materials, and inclusion of motivational strategies.

Conclusion—CCG showed improvement in outcomes in Hispanic individuals comparable to those noted in non-Hispanic White and Black individuals with arthritis.

Keywords

chronic conditions; Hispanic Americans; health disparities; health promotion; quantitative methods; qualitative methods

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Introduction

While Hispanics have a lower rate of arthritis (15.9%) compared with non-Hispanic Whites (22.4%) and Blacks (21.9%; National Center for Health Statistics, 2016), they shoulder a disproportionate share of its clinical manifestations of pain and disability, as well as work and activity limitations (Bolen et al., 2010; Centers for Disease Control and Prevention, 2005). The health disparities are even more striking when looking at age, gender, and racial and ethnic subgroups. For example, the prevalence of arthritis among all Puerto Ricans age 18 and older is actually higher (22.6%) than it is for non-Hispanic Whites (22.4%) and Blacks (21.9%), and the rates of arthritis for Puerto Rican women ages 45 to 64 years are greater (36.9%) than their non-Hispanic White (35.6%) and Black (36.3%) counterparts. The prevalence among those Hispanics age 65 and older increases dramatically to 44.9%, nearly matching the prevalence among older non-Hispanic Whites (49.6%). Half (49.9%) of all Hispanic women have been diagnosed with arthritis, with Puerto Rican women (54%) and Mexican American women (52%) carrying an even greater burden (National Center for Health Statistics, 2016). These disparities are likely to increase in the coming years. The Hispanic population is the fastest-growing demographic group in the United States, accounting for half of all population growth during 2000 and 2010 (Colby & Ortman, 2015; Ennis, Ríos-Vargas, Albert, & U.S. Bureau of the Census, 2011). Hence, the development of effective interventions for Hispanics with arthritis demands immediate attention.

Physical activity (PA) has well-documented effects on overall health and fitness (Ickes & Sharma, 2012), and it plays a central role in the nonpharmacological management of arthritis (Nelson, Allen, Golightly, Goode, & Jordan, 2014). Despite this, the proportion of Americans who meet *Healthy People 2010* PA guidelines is low across demographic groups (48.8%), particularly so among Hispanics (42.1%; Centers for Disease Control and Prevention, 2008). Although PA interventions have been evaluated in Hispanic adults in a limited number of studies (Ickes & Sharma, 2012), there are no evidence-based PA interventions available specifically designed for that population.

The *Walk With Ease* (*WWE*) program was developed in 2007 by the Arthritis Foundation to help manage arthritis symptoms by promoting healthy walking habits. Evaluated in a sample of English-speaking Caucasian and African American participants with arthritis from North Carolina, the intervention yielded meaningful improvements on key indicators of symptoms, function, and overall health (Callahan et al., 2011; Wyatt et al., 2014). Its self-directed format is publically available on the Foundation's website. The *WWE* workbook was translated into Spanish, *Camine Con Gusto* (*CCG*) in 2011, with some cultural adaptations; however, *CCG* has not been evaluated in the Hispanic population.

This mixed methods study was conducted in two phases: First, we evaluated the efficacy (effect sizes [ES]) of the self-directed version format of *CCG*, as well as its feasibility (recruitment), tolerability (retention, adherence), safety (adverse events), and acceptability (satisfaction). Second, we then identified ways to better adapt and enhance the acceptability and appeal of *CCG* in its target population. All procedures were approved by the Biomedical Institutional Review Board of the University of North Carolina (UNC) at Chapel Hill.

Method

Phase 1: Pre–Post Intervention Evaluation

Intervention design—*Camine con Gusto* is a 6-week self-directed community-based PA intervention for Hispanic adults with arthritis. It uses the social cognitive theory conceptual framework (Bandura, 1977), which identifies self-efficacy and outcome expectations as important to promoting exercise. Participants received a copy of the 6-chapter, 183-page work-book—*Camine Con Gusto: Su guía de caminatas para mejorar su salud y condición física, y reducir el dolor (Walk With Ease: Your Guide to Walking for Better Health, Improved Fitness, and Less Pain)*. Designed at a sixth-grade reading level, the Workbook includes chapters on benefits of walking, ways to develop a walking plan and get started, how to stay motivated and overcome barriers, managing symptoms, and resources to keep walking and stay active.

Sites, recruitment, and participants—For Phase 1, our bilingual team recruited 285 participants from the Rheumatology, Gastrointestinal, Geriatrics, and Internal Medicine clinics in the UNC Hospitals Center for Latino Health (CELAH) program, a CELAH-sponsored health fair, the Mexican Consulate, and three local churches with Hispanic ministries. Recruitment approaches differed according to the sites but were always conducted in Spanish. In the clinics, people with arthritis were approached to participate. Eligible participants included self-identified Hispanic individuals age 21 years or older, reporting arthritis, joint pain, or a diagnosis of arthritis by a health care professional, who were able to walk unassisted but currently walking on average less than 150 minutes/week. Potential enrollees were excluded if they were scheduled for surgery within the study period or were experiencing one or more significant medical conditions not under adequate control (e.g., uncontrolled hypertension or diabetes).

Two senior investigators on the team trained the bilingual staff on engaging participants, answering questions about the study and *CCG* program, and how to administer the survey without introducing bias. Furthermore, all team members completed the university's institutional review board training. We conducted baseline activities from May to September of 2014 including screening potential participants, securing informed consent, administering the baseline self-report questionnaire, and obtaining contact information for the 6-week follow-up assessment. We provided assistance in reading and completing materials and briefly reviewed the *CCG* Workbook content. At 6 weeks, a follow-up survey to assess patient-reported outcomes and satisfaction was mailed with a return envelope. If a survey was not returned, the survey was remailed or administered by phone by our bilingual team. All data collection tools were available in Spanish and in English; all but four participants completed questionnaires in Spanish. Follow-up survey completers received a \$30 gift card.

Measures

Demographics—Demographic information included race, age, education, sex, marital status, health status, and comorbid conditions. Age was measured as a continuous variable using self-reported date of birth; education was based on response to “What is the highest level of education you have finished in school?”: 1 to 8 grades, 9 to 11 grades, high school

graduate, some college, junior college degree, college degree, some post-college, or advanced degree. Body mass index (BMI [kg/m²]) was a continuous measure calculated by using self-reported height and weight. Participants rated their health status in general as excellent, good, fair, or poor (Centers for Disease Control and Prevention, 2006). Participants reported each condition they had from a list of 13 common chronic conditions (cancer, fibromyalgia, glaucoma, emphysema, high blood pressure, heart disease, circulation problems, diabetes, stomach or intestinal disorders, osteoporosis, chronic liver or kidney disease, stroke, or depression). Comorbid conditions represent the sum of all self-reported conditions not related to arthritis. The short form acculturation scale for Hispanics was used to measure country of birth; parent's country of birth; language in childhood; language in which one thinks, reads, and writes; and language spoken at home and with friends (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987).

Primary Outcomes

Primary outcome measures were valid and reliable participant-reported arthritis symptoms and physical function that have been translated into Spanish. These measures were all assessed at baseline and 6-week follow-up.

Arthritis symptoms—We measured pain using the validated Visual Numeric Pain Scale (Gonzalez, Stewart, Ritter, & Lorig, 1995). Endpoints on the 10-point scale are 0 (*no symptom*) to 10 (*the symptom was as bad as it could be*). Participants were asked to indicate a number on the scale corresponding to their pain experience during the preceding 7 days. The Fatigue Visual Numeric Scale developed by Lorig and colleagues (<http://patienteducation.stanford.edu/research/vnsfatigue.html>) was used to measure fatigue. For parity, we adapted the Visual Analog Scale for stiffness (Lorig et al., 1996; Satish, Postigo, Ray, & Goodwin, 2001) into the same format and the numeric scales as used for pain and fatigue.

Physical function—The validated Spanish modified Health Assessment Questionnaire scale measures perceived level of difficulty in performing activities of daily living (Gonzalez et al., 1995). The eight-item scale contains activities rated from 0 (*without any difficulty*) to 3 (*unable to do*), and the average of the eight items was used in analyses.

Secondary Outcomes

Self-efficacy and helplessness scales—Secondary outcomes included two psychosocial measures that have been translated and validated in Spanish. The 11-item short form Arthritis Self Efficacy Scale (ASES) characterizes the respondent's confidence in managing their arthritis pain and symptoms, with response options range from 1 (*very uncertain*) to 10 (*very certain*), with the average of the 11 items used in analysis. Higher scores express greater confidence for managing arthritis (Lorig et al., 1996). The five-item helplessness subscale of the Rheumatology Attitudes Index (RAI) measures perceived helplessness (DeVellis & Callahan, 1993; Escalante, Cardiel, del Rincón, & Suárez-Mendoza, 1999). The five items are scored from 0 to 4 (*least to greatest amount of helplessness*), and the average of the five items was used for the analysis.

Additional 6-Week Follow-Up Measures

In addition to the outcome measures described above, the 6-week follow-up questionnaire assessed participants' walking experience and program satisfaction.

Walking—We asked participants if they did any walking during the past 6 weeks (yes, no), and if not, why. For those who walked, we asked how many days per week they walked (1-2 days, 3-4 days, 5 or more days); how many minutes they usually walked per day (less than 15 minutes, 15-30 minutes, 30-45 minutes, more than 45 minutes); whether they walked all of those minutes at one time or broken up; and whether they usually walked alone or with other people (alone, one or more than one). Individuals were classified as having met recommended walking levels if they walked 5 or more days a week. We also asked participants to compare their activity level before starting the *CCG* program with their postprogram activity level (no change, less active, slightly more active, moderately more active, a lot more active). Participants also rated their confidence in being able to continue to walk or being physically active after doing the program (not at all confident, slightly confident, fairly confident, extremely confident).

Satisfaction—We surveyed participants about their use and opinion of the Workbook, overall satisfaction with the *CCG* program, and perception of its benefits. With respect to the Workbook, we asked, “How much of the *CCG* workbook did you read?” (none, a little, some [2-3 chapters], most [4-5 chapters]). Using a 4-point Likert-type scale (1 = *Strongly disagree*, 2 = *Disagree*, 3 = *Agree*, 4 = *Strongly agree*), participants rated their agreement to the following questions: “The Workbook motivated me to become more physically active,” “I was satisfied with the *CCG* program,” “I benefitted from doing the *CCG* program,” and “Would you recommend the *CCG* book to any of your friends or family?”

Analyses

We calculated descriptive statistics to depict demographic characteristics of the entire population, using means with standard deviation (*SD*) for continuous variables and percentages for categorical data.

Data were assumed to be missing at random since it is difficult to verify variables are missing completely at random and were therefore presumed to have a minor impact on the estimates (Schafer & Graham, 2002). To investigate whether our data are at least partially missing at random, we assessed whether missingness was related to other predictors and found only education to be a predictor. We used the Markov Chain Monte Carlo method of multiple imputation with SAS PROC MI using all covariates to estimate multiple values of missing covariates, including BMI. Results from 10 iterations indicated that there were no meaningful differences between results from the imputed data and a complete-case analysis; therefore, we present results from imputed data to increase the precision of our estimates.

We used multivariate regression models with study site as a random effects variable to calculate mean changes between baseline and 6-week follow-up scores, where a positive difference indicates an increase from baseline to follow-up for an outcome, controlling for baseline outcome score and covariates. Covariates included age, BMI, education, gender,

and number of comorbidities. Mean change scores were used to estimate ES, expressed as Cohen's *d*, which was calculated comparing the mean change scores from baseline to 6-weeks divided by the pooled *SD* (Cohen, 1992). ES were calculated among all *CCG* participants for changes from baseline to follow-up, as well as a comparison for those who achieved recommended walking levels (5 days/week) and those who did not. All tests were two-sided and considered statistically significant at the $p < .05$ level. All statistical analyses were completed using SAS Version 9.4 (SAS Institute Inc., Cary, NC).

Phase 2: Postprogram Formative Evaluation

For Phase 2, we conducted a formative evaluation (focus groups and key informant interviews) as a means to guide program improvement by identifying *CCG* participant and stakeholder preferences pertinent to program enhancement. Using this methodology to explore the contexts in which participants live and in which the program is carried out enhances the likelihood that program refinements will be relevant and feasible (Jilcott, Laraia, Evenson, Lowenstein, & Ammerman, 2007; Kumanyika et al., 2002; Teufel-Shone, Siyuja, Watahomigie, & Irwin, 2006; Vastine, Gittelsohn, Ethelbah, Anliker, & Caballero, 2005).

Sites, recruitment, and participants—We drew a sample of potential focus group participants from the range of recruitment sites. During February and March of 2015, we conducted 3 focus groups in Spanish with 14 program completers. Bilingual team members were trained as focus group moderators and note-takers. Focus groups lasted approximately 1.5 hours, and all participants received \$20. Other team members conducted nine structured key informant interviews in English with clinicians serving Hispanic patients and community stakeholders (Hispanic outreach ministry staff, Hispanic community services administrators) who had helped promote *CCG* and recruit participants. Interviews lasted on average 30 minutes.

Measures

There was both overlap and variation among the questions posed to the participants and stakeholders. *The Focus Group Moderator Guide* explored amount of and challenges to walking, Workbook usage, recommendations about the Workbook, satisfaction with the program format, and recommended changes. *The Community Key Stakeholder Interview Protocol* focused on experience with the *CCG* program, other health programs at the organization, getting information about the *CCG* program, motivators and recruitment of participants, and ways to enhance the *CCG* program. *The Clinical Key Stakeholder Guide* similarly covered experience with the *CCG* program, getting information about the *CCG* program, and motivators and recruitment of participants.

Analyses

After focus groups were completed, the bilingual team members immediately held a debrief session at which they reviewed key insights from the session. Note-takers typed their interview notes, which were then compiled and reviewed independently by a couple of team members who conducted a conventional content analysis (Krippendorff, 2004). Our aim was to create a basic description of the opinions and feelings of participants. This type of

analytic design is appropriate when existing theory or research literature on a phenomenon such as *CCG* is limited. After this independent review, team members then met to collectively review their respective interpretations and inductively derive overarching themes and consensus across all interview topics.

Results

Phase 1: Pre–Post Intervention Evaluation

Participant characteristics—We assessed 346 individuals for eligibility (Figure 1). Of those 58 were ineligible, including 37 with no joint symptoms, one with an uncontrolled medical condition, and six who were already sufficiently active. Fourteen screened individuals declined to participate. We enrolled 288 individuals and 285 completed baseline questionnaires. At 6 weeks 233 participants (82%) completed the follow-up survey.

Baseline characteristics of the 233 participants who completed the 6-week follow-up are presented in Table 1. Mean age was 46.9 years (age range = 23–82 years), 74.7% were female, 44.4% had less than a high school education, and 45.4% had a BMI > 30 kg/m². The majority (60.1%) spoke only Spanish, and only 2.5% were born in the United States (Table 1). Participants reported an average of 1.2 comorbid conditions, and 47.3% reported fair or poor general health. Arthritis symptom scores at baseline were 54.2 for pain, 45.2 for fatigue, and 44.6 for stiffness, all on a 0- to 100-point scale.

Walking adherence at 6 weeks—Forty-three percent of the participants reported walking 5 or more days at the end of the 6-week period (data not shown). Another 45% reported walking 3 to 4 days a week. Almost 80% reported walking all at one time rather than breaking it up over the day. More than 60% reported they were walking 30 minutes or more per day (data not shown). Only 30% were extremely confident that they would continue being active after completing *CCG*, but 52% were fairly confident.

Outcomes

Covariate adjusted results for primary outcomes of symptoms, difficulty with function, and psychosocial outcomes at baseline and 6 weeks are shown in Table 2.

Arthritis symptoms—Scores were converted to a 100-point scale for analyses. Mean Visual Analog Scale pain scores decreased from a 57.45 at baseline to 40.93 at 6 weeks (change [95% confidence interval (CI)]: –16.6 [–22.2, –11.0]; ES: 0.50 [0.35, 0.65]). Fatigue scores decreased from 49.73 to 33.42 (change [95% CI]: –15.5 [–19.2, –11.8]; ES: 0.75 [0.56, 0.95]). Stiffness scores also decreased from a mean of 47.56 at baseline to 31.71 at 6 weeks (change [95% CI]: –15.8 [–20.7, –11.0]; ES: 0.49 [0.31, 0.67]).

Difficulty with function—Health Assessment Questionnaire scores decreased from 0.46 at baseline to 0.30 at 6 weeks (change [95% CI]: –0.16 [–0.21, –0.11]; ES: 0.33 [0.14, 0.51]).

Psychosocial outcomes—Perceived helplessness (RAI) scores decreased from 1.47 at baseline to 1.22 at 6 weeks (change [95% CI]: –0.22 [–0.38, –0.06]; ES: 0.26 [0.08, 0.45]).

Arthritis self-efficacy increased from 7.18 at baseline to 7.79 at 6 weeks (change [95% CI]: 0.66 [0.33, 1.00]; ES: 0.24 [0.07, 0.42]).

Stratified analysis, effect of walking adherence—In exploratory analysis, we observed modestly greater efficacy in domains of pain, fatigue, and perceived helplessness among participants who reported walking five or more times per week (Table 3). Trends toward greater efficacy were observed in stiffness, function, and self-efficacy domains.

Program feedback—Among the 232 participants who completed the satisfaction survey, 99% reported that they would recommend the *CCG* program to a friend or family member and 96% reported benefiting from the program (data not shown). About 60% reported reading two or more chapters of the Workbook.

Phase 2: Postprogram Formative Evaluation

The mean age of the focus group participants was 51.5 years, 73% were female, and 47% had less than a high school education.

Outcomes

Focus group participants recommended that the *CCG* Workbook content be reduced and presented in simpler language, augmented with more information about nutrition and chronic conditions, and feature more relatable pictures of men and “people who look like us” (including those not in shape). They recommended distilling key messages into shorter formats such as flashcards, bookmarks, and magnets that could be used as daily reminders and easily carried or placed around the home. Furthermore, participants recommended enhancing written content with various motivational strategies including weekly in-person or telephone calls, text messaging or e-mails, and use of social media where participants could communicate with each other. The recommendations from the key informants closely paralleled those of the focus groups with additional emphasis on addressing the lower literacy levels of some individuals and employing terminology that is understood across varying Hispanic groups.

Discussion

Participation in the self-directed *CCG* program was associated with improved patient-reported symptoms, daily function, and psychosocial wellness in Hispanics with self-reported arthritis. Participants who reported walking at least five times per week experienced modestly greater improvements in outcomes. These findings were similar to the findings in a prior study of the English language version of the program, *WWE* (Callahan et al., 2011; Wyatt et al., 2014). Although other studies have examined PA interventions in Hispanics (Collins, Lee, Albright, & King, 2004; Marcus et al., 2013; Pekmezi et al., 2009), to our knowledge, this is the first study specifically testing a walking intervention in U.S. Hispanics with arthritis.

The formative evaluation revealed a consensus that adaptations to the *CCG* Workbook and program are needed to enhance participant engagement and outcomes. There was repeated emphasis on preparing shortened materials, simpler language, and use of pictures to help

convey key messages. There was also emphasis on relying on social supports, including social media, to augment the use of the workbook and other materials.

Our study has several strengths including the use of validated patient-reported outcome measures for Hispanics, the demonstration that program recruitment is feasible in both community-based (churches, health fairs, Mexican consulate) and clinic-based venues, and the inclusion of a large number of participants with less than a high school diploma. Participants reported high levels of program satisfaction and retention was high. The formative evaluation to explore in depth the appeal of the intervention and needed adaptations was also a strength.

However, the study has some limitations. First, it lacked a separate control group; hence, the degree to which the magnitude of improvement seen in the pre- and post-evaluation may be explained partly by factors such as socially desirable responses is unclear. Second, our study was conducted in a single U.S. state. Hispanic populations vary regionally across the United States with respect to country of origin and integration into the historical fabric. Third, due to lack of resources, we were only able to measure short term, patient-reported outcomes. Future studies should enroll diverse Hispanic participants from a variety of U.S. geographic regions, randomize them to usual care versus intervention arms, collect both patient-reported arthritis symptoms and PA levels, and follow participants for a longer time to determine the incorporation of walking as behavioral lifestyle change. If the program is effectively embedded into a participant's daily life routines and maintained, its benefits could positively affect individual health, not only in terms of arthritis symptoms but also several other common, chronic conditions including diabetes, cardiovascular disease, obesity, and depression (Centers for Disease Control and Prevention, 2012).

The Arthritis Foundation and our bilingual team are developing new materials in simpler language to augment the *CCG* Workbook. Key messages are being designed for bookmarks, magnets, and flash cards that briefly summarize the importance of exercise for people with arthritis, how to exercise, preparing to walk, protecting joints, the importance of nutrition, and arthritis and other chronic conditions. The team is also checking for health-related terminology that may be new to a participant or is not commonly used in his or her country of origin. For example, the term, “joints” translates to “articulaciones” in some countries but is more commonly understood as “coyunturas” in others. Embedding a “glossary of terms” on materials and, where appropriate, giving alternate terms can address these issues. Materials are also being vetted by stakeholders who represent diverse Spanish-speaking countries. The practicality and cost of employing motivational strategies is also under review.

Conclusion

Participation in the *CCG* program was associated with improvements in 6-week patient-reported outcomes comparable to those noted in non-Hispanic White and Black individuals in this study of community-dwelling Hispanic Americans with self-reported arthritis. *CCG* shows promise as a tool to improve health and functioning in this large and rapidly growing segment of the population. If confirmed in larger studies, the effects seen in our study are

likely to be clinically meaningful (Tubach et al., 2007). The potential population health impact of a safe, inexpensive community-based intervention is substantial, given that Hispanics are the nation's fastest growing racial/ethnic minority group, have lower rates of PA than non-Hispanics, and have disproportionate levels of disability due to arthritis (Centers for Disease Control and Prevention, 2005; Ennis et al., 2011; Office of Minority Health and Health Disparities and State Center for Health Statistics, 2010).

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What Are the Implications for Health Promotion Practice and Research?

- Research results show that the self-directed format of *CCG* is a safe, viable means for improving arthritis symptom management and increasing minutes of walking among Hispanics with arthritis, but program materials and approaches should be adapted to be more salient.
- *CCG* shows promise as a tool to improve health and functioning in this large and rapidly growing segment of the population.
- Future clinical trials are needed to confirm clinically meaningful effects.

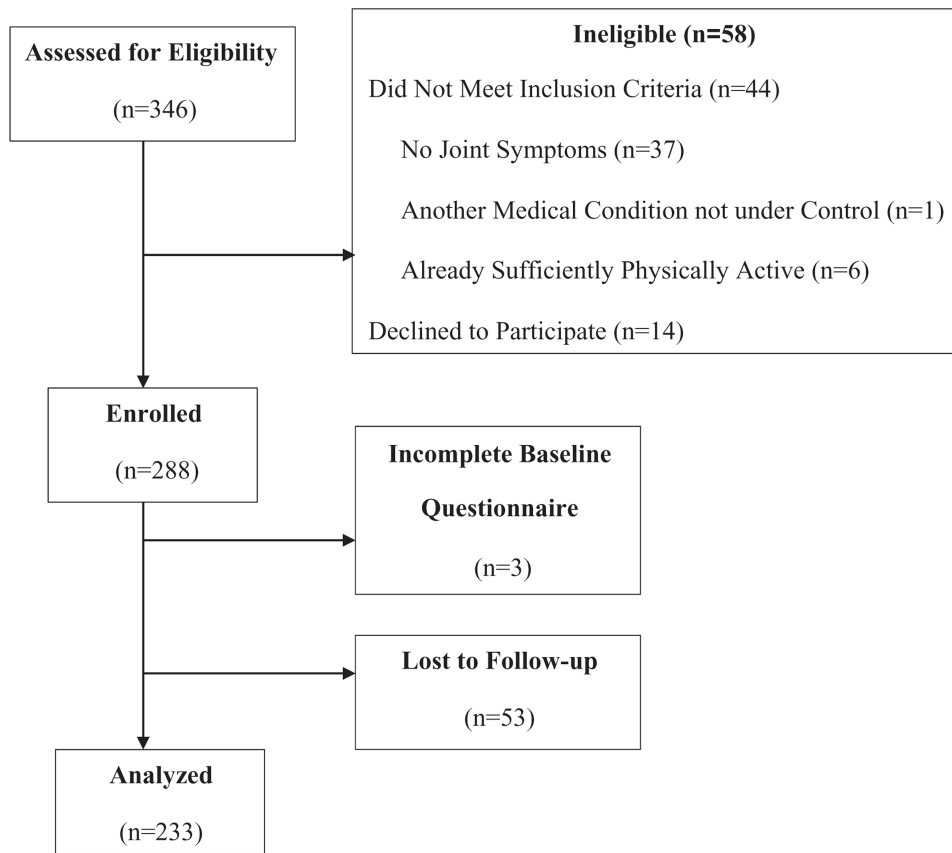


Figure 1.
Camine Con Gusto participant selection.

Table 1Baseline Characteristics of Participants Who Completed the 6-Week Follow-Up^a.

Characteristic	Statistic	Number of participants
Age, <i>M</i> ± <i>SD</i>	46.9 ± 11.0	230
Education, % less than high school	44.4	225
Born in the United States of America, %	2.5	233
Only speak Spanish, %	60.1	231
Female, %	74.7	233
Body mass index, % 30 kg/m	45.4	184
Number of comorbidities, <i>M</i> ± <i>SD</i>	1.23 ± 1.54	231
Self-reported functions		
General health, % fair-poor	47.3	231
HAQ (range 0-3), <i>M</i> ± <i>SD</i>	0.41 ± 0.44	230
Symptoms VAS (range 0-100), <i>M</i> ± <i>SD</i>		
Pain	54.2 ± 25.7	231
Fatigue	45.2 ± 30.2	229
Stiffness	44.6 ± 29.1	228
Psychosocial		
Rheumatology Attitudes Index (range 0-4), <i>M</i> ± <i>SD</i>	1.43 ± 0.92	227
Arthritis Self Efficacy (range 1-10), <i>M</i> ± <i>SD</i>	7.31 ± 2.14	231

Note. M = Mean; SD = standard deviation; HAQ = Health Assessment Questionnaire; VAS = Visual Analog Scale.

^aAnalysis includes only participants who completed follow-up measures at 6 weeks (*n* = 233).

Table 2CCG Covariate-Adjusted^a Means (*SD*) for Baseline and Follow-Up Measures^b.

Health status outcomes	Baseline, <i>M</i> (\pm <i>SD</i>)	6-Week follow-up, <i>M</i> (\pm <i>SD</i>)	Change (95% CI)	Effect size (95% CI)
Symptoms VAS (range 0-100)				
Pain (<i>n</i> = 227)	57.45 (18.86)	40.93 (43.03)	-16.6 [-22.2, -11.0] ^c	0.50 [0.35, 0.65]
Fatigue (<i>n</i> = 222)	49.73 (11.93)	33.42 (28.14)	-15.5 [-19.2, -11.8] ^c	0.75 [0.56, 0.95]
Stiffness (<i>n</i> = 219)	47.56 (27.60)	31.71 (36.45)	-15.8 [-20.7, -11.0] ^c	0.49 [0.31, 0.67]
Function				
HAQ (range 0-3) (<i>n</i> = 222)	0.46 (0.54)	0.30 (0.39)	-0.16 [-0.21, -0.11] ^c	0.33 [0.14, 0.51]
Psychosocial				
RAI (range 0-4) (<i>n</i> = 214)	1.47 (0.56)	1.22 (1.19)	-0.22 [-0.38, -0.06] ^c	0.26 [0.08, 0.45]
ASE (range 1-10) (<i>n</i> = 222)	7.18 (2.54)	7.79 (2.55)	0.66 [0.33, 1.00] ^c	0.24 [0.07, 0.42]

Note. CCG = Camine Con Gusto; *SD* = standard deviation; CI = confidence interval; VAS = Visual Analog Scale; HAQ = Health Assessment Questionnaire; RAI = Rheumatology Attitudes Index; ASE = Arthritis Self Efficacy.

^a Adjusted for gender, age, education, body mass index, comorbidities, and baseline outcome; study site adjusted for as a random effect.

^b Sample restricted to those who completed the 6-week follow-up (*n* = 233).

^c *p* < .0001 for the difference from baseline to 6 weeks; missing values for covariates multiply imputed.

CCG Covariate-Adjusted^a Means (*SD*) for Baseline and Follow-Up Measures^b According to Whether the Participant Walked Five Times per Week or Not.

Table 3

Health status outcomes	Sample size	Baseline, <i>M</i> (<i>±SD</i>)	6-Week follow-up, <i>M</i> (<i>±SD</i>)	Change (95% CI)	Effect size (95% CI)
Symptoms VAS (range 0-100)					
Pain					
Walked <5 days/week	<i>n</i> = 123	56.79 (27.72)	42.81 (36.91)	-15.0 [-21.6, -8.52]	
Walked 5 days/week	<i>n</i> = 96	59.03 (13.17)	38.38 (25.83)	-19.5 [-24.6, -14.3]	0.30 [0.03, 0.56]
Fatigue					
Walked <5 days/week	<i>n</i> = 122	48.42 (23.00)	37.24 (33.00)	-11.9 [-17.7, -6.02]	
Walked 5 days/week	<i>n</i> = 94	52.20 (22.00)	28.75 (23.72)	-20.4 [-25.2, -15.6]	0.54 [0.27, 0.81]
Stiffness					
Walked <5 days/week	<i>n</i> = 119	47.28 (22.45)	34.30 (31.55)	-13.5 [-19.2, -7.86]	
Walked 5 days/week	<i>n</i> = 93	48.72 (44.97)	28.10 (27.04)	-19.7 [-25.2, -14.2]	0.22 [-0.05, 0.49]
Function					
HAQ (range 0-3)					
Walked <5 days/week	<i>n</i> = 122	0.46 (0.58)	0.34 (0.37)	-0.13 [-0.19, -0.07]	
Walked 5 days/week	<i>n</i> = 92	0.47 (0.25)	0.23 (0.29)	-0.24 [-0.30, -0.18]	0.26 [-0.01, 0.53]
Psychosocial					
RAI (range 0-4)					
Walked <5 days/week	<i>n</i> = 117	1.42 (0.47)	1.29 (0.88)	-0.15 [-0.31, 0.01]	
Walked 5 days/week	<i>n</i> = 89	1.50 (0.62)	1.14 (1.09)	-0.29 [-0.52, -0.07]	0.41 [0.13, 0.69]
ASE (range 1-10)					
Walked <5 days/week	<i>n</i> = 123	7.11 (1.75)	7.60 (1.91)	0.49 [0.16, 0.83]	
Walked 5 days/week	<i>n</i> = 92	7.20 (2.45)	8.03 (2.42)	0.93 [0.43, 1.42]	0.16 [-0.10, 0.43]

Note. CCG = *Cambridge Core*; SD = standard deviation; CI = confidence interval; VAS = Visual Analog Scale; HAQ = Health Assessment Questionnaire; RAI = Rheumatology Attitudes Index; ASE = Arthritis Self Efficacy.

^a Adjusted for gender, age, education, body mass index, comorbidities, and baseline outcome; study site adjusted for as a random effect.

^b Sample restricted to those who completed the 6-week follow-up (*n* = 233).