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Motivators and Barriers to Latinas' Participation in Clinical Trials: The Role of Contextual Factors

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Abstract

Objective—Latinas are underrepresented in clinical trials despite the rise in Hispanic population. This study examines the factors associated with Latinas' willingness to participate in preventive breast cancer randomized clinical trials (RCTs).

Methods—Women self-identifying as Latina, over age 40, with no prior history of breast cancer were eligible. Using the Behavior Model for Vulnerable Populations, we administered a survey (n=168) to assess predisposing (e.g., knowledge), enabling (e.g., trust) and need factors (e.g., risk perception). Intention to participate was defined using a lenient (maybe, probably or definitely) and a stringent criterion (probably and definitely). Chi-square tests and logistic regression models examined the associations of predisposing, enabling, and need factors with women's intentions to participate in RCTs.

Results—Most participants (74.9%) were monolingual Spanish-speaking immigrants. Most (83.9%) reported willing to participate in clinical trials using the lenient definition (vs. 43.1% under the stringent definition). Using the lenient definition, the odds of willing to participate in RCTs were significantly lower for unmarried women (OR=.25, 95% CI=.08–.79) and those with lower cancer risk perceptions (OR=.20, 95% CI=.06–.63), while being significantly higher for women with lower language acculturation (OR=6.2, 95% CI=1.8–20.9). Using the stringent definition, women who did not endorse a motivation to enroll to help family members (if they had cancer) had significantly lower odds to report intent (OR=.33, 95% CI=.13–.86).

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Conclusion—Many RCTs may have limited generalizability due to the low representation of minorities. Culturally targeted interventions that address the importance of family for Latinos may ultimately increase their participation in RCTs.

Introduction

Clinical trials are an integral aspect of the cancer control continuum. Randomized clinical trials (RCTs) are the “gold standard” to assess the efficacy and safety of medical interventions,^{1,2} to innovate and improve cancer care, and provide patients state-of-the-art treatments.³ However, accrual rates in clinical trials remain low. Among patients at the sites in the National Cancer Institute’s Community Cancer Center’s Program, there was an 18% overall enrollment rate, with a 17% enrollment rate for women, though rates vary by study.⁴ The 1993 NIH Revitalization Act mandates that minorities be equally represented in RCTs, yet the minority representation is below 5%.^{5,6} Factors associated with reduced participation in underrepresented populations include RCTs awareness, age, socioeconomic status, racial/ethnicity minority status, and comorbidities.⁷

The Latino population is one of the fastest growing populations in the US,⁸ yet are underrepresented in clinical trials.⁹ For example, only 3.1% participants of a population-based NCI study were Latino, while their proportion in the US population was 9.1%.⁹ In a review of clinical trials covering 2001–2010, Latinos’ enrollment constituted only 2.2% of accrued participants.¹⁰

Among Latinas, breast cancer is the leading cause of cancer death.¹¹ Thereby participation in RCTs can inform strategies that may help reduce the disease burden in this group.^{1,2} Although there has been research on factors affecting RCTs participation in minority populations,⁷ only a few studies have specifically focused on Latinas.^{12–15}

The Behavior Model for Vulnerable Populations is an adaptation to the original Behavioral Model developed in the 1960’s to further examine how predisposing, enabling, and need factors predict the use of health services among vulnerable populations (e.g. ethnic minorities, immigrants).¹⁶ Predisposing factors include demographic characteristics (e.g. age, marital status), health beliefs, and social structure (e.g. ethnicity, acculturation, immigration status). Enabling factors refer to factors that facilitate or impede behavior change such as personal or family resources (e.g. insurance, availability and use of information sources).^{17,18} Lastly, need factors involve how people view or worry about their own health and functional state, and whether they judge their problems or risk to be sufficiently important to seek help.¹⁹ Predisposing (e.g. age,¹³ knowledge¹²) enabling (e.g. trust in health information, information self-efficacy, contacting the Cancer Information Service),¹² and need factors (e.g. cancer worry)^{12, 13} identified by the Behavior Model for Vulnerable Populations^{19,20} have been related to participation in clinical trials in Latinas.

Broadening ethnic representativeness in RCTs is scientifically and ethically crucial to assure research findings are generalizable and beneficial for underserved populations.²¹ Racial and ethnic diversity in RCTs is key to decreasing health disparities, and moving towards patient-focused care irrespective of gender, race, and socioeconomic status.²² To better reach the

NIH goals of including minorities and women in RCTs, the goal of this study was to identify potential targets for interventions to increase Latinas' RCT participation. Using the tenets from the Behavior Model for Vulnerable populations,¹⁷ we will identify factors associated with Latinas' willingness to participate in cancer prevention RCTs.^{19,20} Results will be used to fill scientific gaps about Latinas' willingness to participate in RCTs to inform trials' designs that may help ameliorate the health disparities.

Materials and Methods

Design and Setting

Data were from a cross-sectional survey of *Latinas Perceptions about Healthcare* in the Washington, DC Metropolitan area conducted by the Latin American Cancer Research Coalition (LACRC).²³ Women were primarily recruited from three community-based clinics in the DC area that provide free and low cost health and social services primarily to uninsured Latinos. The clinics are non-federally funded and the majority of the staff at the clinics is bilingual, English- and Spanish-speaking.

Procedures

Eligible women were self-identified Latinas who were 40 years or older with no prior history of breast cancer. Clinic staff reviewed medical charts and appointment logs to check women's eligibility before their scheduled appointments and a bilingual research assistant approached eligible women in the waiting area for consent to participate. Additionally, the host of the Latino health radio program "Cuidando su Salud" ("Taking Care of Your Health") advertised the study. Interested women called the LACRC offices, were confirmed for eligibility, and scheduled for an interview. Non-physician staff at each clinic served as interviewers for this study. Interviews were conducted and consent forms were read in the participant's preferred language. Participants were compensated with a \$15 grocery store voucher.

Measures

Using the Behavioral Model for Vulnerable Populations as a guiding conceptual framework, the measures were categorized into one of the following factors; Predisposing, Enabling, and Need.¹⁷ The measures were chosen based on their potential to be important among vulnerable populations (e.g. trust, insurance status, etc.) and their prior use in Spanish-speaking and/or Latino populations.²⁴

Outcome(s)—The primary outcome of interest was willingness to enroll in a cancer clinical trial. The patients were given a definition of clinical trials and asked whether they would be willing to participate in a clinical trial that compares two drugs to prevent breast cancer if they were invited to. Response options included: "No, Maybe, Probably, Definitely, Unsure, Refused." Using Mandelblatt et al.¹³ criteria, we defined intentions to participate using a lenient and a stringent definition. The lenient definition of intent included women who would "maybe," "probably," or "definitely" participate (vs. "no", "unsure", and "refused"), and the stricter definition of intent only included the answers "definitely" and "probably" (vs. "maybe," "no," "unsure," and "refused").

Predictors

Predisposing Factors: We collected socio-demographic data on age, marital status (married/living as married vs. single), education (some college vs. HS or less), and country of origin (recoded into three regions: Central, North, and South America). Age was collected as a continuous variable and finally dichotomized into two groups: 40–49 and age 50 and over. Other measures included language acculturation (language used at home, with friends, and at work)²⁵ and clinical trial awareness (“have you ever heard of clinical trials? Yes, No, Unsure”). We assessed participant’s motivators to participate in clinical trials with a scale that consisted of three items that assessed whether women would participate in clinical trials given three hypothetical situations (1) to help relatives if someone in their family had cancer, (2) to help somebody they knew if they had cancer, and (3) if compensated monetarily (yes vs. no).

Enabling Factors: Enabling factors included insurance, perceived discrimination, trust in provider, and sources of information. Insurance status was assessed with one item that assessed whether participants had health insurance at any time during the last 12 months (yes vs. no). Perceived discrimination was measured with Bird & Bogart’s²⁶ six items that query whether participants have been treated unfairly by healthcare organizations due to their race/ethnicity (yes vs. no) (e.g. “Have you ever been treated with less courtesy than others because you were Hispanic/Latina?”). Perceived discrimination was coded as reported one or more discrimination experiences vs. none. This scale has high reliability ($\alpha=.89$). Level of trust in patient’s doctor was obtained through a question taken from the Primary Care Assessment Survey (PCAS) on a 10-point Likert scale (0–10, where 0 means no trust at all and 10 means complete trust).²⁷ This variable was dichotomized using the median as higher trust (trust score=10) and lower trust (trust = 9). We also collected information about source of healthcare (LACRC-affiliated clinics vs. non LARC affiliated clinics) and usual sources of health information. Participants were asked to check all the sources they usually access health information from using a list of twelve sources (e.g. doctor/hospital, family, friends, TV, radio). The response options were collapsed to two choices: Doctor/Hospital vs. Others.

Need factors: We only examined one need factor, perceived cancer risk, with a one-item Likert-scale question (“Do you think you will ever develop breast cancer?”) with four response choices ranging from “definitely” to “not at all likely.” Responses were dichotomized as (yes vs. no).

Statistical Analysis

Descriptive statistics were used to describe the study sample. We used Chi-Square test to examine the bivariate associations between the outcome variables and the predictors. We conducted multivariate logistic regression to simultaneously examine the influence of predictors on study outcomes. The variables that were significant at $p \leq .05$ in the bivariate analysis were included in the multivariate model and entered simultaneously in the model.

Results

Sample Characteristics

The sample consisted of 168 Latina women who were 40 years of age or older ($m=51.63$; $SD=8.9$). Most women (58.9%) were recruited from one of the LACRC clinic sites. The majority (74.9%) of the women was monolingual Spanish-speaking immigrants from South America (57.7%) and about half (47.6%) had completed some college or more. Fifty-seven percent of the population was married or living as married and only 42.8% were insured. Although about 62.7% of the women reported that they received their information regarding health care from a doctor or hospital, only 53.6% of the sample reported that they had heard of a randomized clinical trial. Sixty-three percent of the sample population believed that they will develop breast cancer at some point in their life. Forty-one percent of the women reported experiencing some form of discrimination in the past from a health care professional (see Table 1).

Predictors of Willingness to Participate in Clinical Trials

The majority of the participants (83.9%) reported that they were willing to participate in clinical trials under the lenient definition, whereas that percentage decreased to 43.1% when using the more stringent definition. The most frequently reported motivator to engage in clinical trials was helping family members in the case a relative had cancer (82.7%), followed by helping someone they knew (if they had cancer) (77.9%), whereas monetary compensation was the least endorsed motivator (53.8%).

Bivariate Analysis

Predisposing Factors—Predisposing variables that were significantly associated with a woman's intent to participate in a RCT under a lenient definition included language spoken, marital status, and health beliefs (perceived motivators). Participants who only spoke Spanish and those who were married were more likely to report an intention to participate in clinical trials ($p<.01$; $p<.05$, respectively). Two motivators were found to be significantly associated with a woman's willingness to participate in a breast cancer preventive randomized clinical trial: motivation to participate to help family members if any of their relatives had cancer ($p<.05$) and motivation to participate if they knew someone else who had cancer ($p<.01$).

Using a more strict definition of intent, women with higher education and those who reported they would be motivated to participate in clinical trials to help family members had a higher willingness to participate in clinical trials ($p<.05$).

Enabling Factors—Using a lenient criteria, participants who reported not having experienced discrimination were more willing to participate in clinical trials ($p<.05$).

Need factors—Participants who perceived they were at risk of developing breast cancer reported a higher likelihood of enrolling in clinical trials under the lenient criteria ($p<.01$) (see Table 1 for the bivariate results).

Multivariate Analysis

Using the lenient definition, after controlling for all variables in the multivariate model, only marital status, language acculturation, and breast cancer risk perception remained significant. The odds of willing to participate in clinical trials for the participants who only spoke Spanish were six times higher compared to their counterparts who spoke both Spanish and English (OR:6.2; 95%CI: 1.82, 20.99). Women who were unmarried (vs. married) (OR: .25; 95%CI: .08, .79) and those with lower breast cancer risk perceptions (vs. high) (OR: .20; 95%CI: .06, .63) were less likely to report willingness to participate in clinical trials. We tested for interactions between the variables but there were not significant. When clinical trial participation was more stringently defined, motivation to help relatives with cancer was the only significant factor in the logistic regression model. Women who did not endorse being motivated to participate in clinical trials to help relatives (if they had cancer) were less willing to participate in clinical trials compared to participants for whom helping family members would be a motivation to enroll (OR: .33; 95%CI: .13,.86) (see Table 2).

Discussion

The low representation of Latinas in clinical trials may contribute to disparities in breast cancer outcomes.⁹ Accrual rates among Latinos have not significantly improved since 2004.¹⁰ Further, Parra and colleagues (2014) found that out of 159 trials, only 20% included data regarding minority enrollment. In the 8% of the studies that reported Latinos accrual, the proportion of Latinos included in the samples ranged from 0.5% to 26%, constituting an accrual rate of 3.9%.²⁸ Efforts to increase clinical trial participation should consider the factors that impact Latinas' likelihood of participating in clinical trials.

Most participants reported a high willingness to participate in breast cancer preventive clinical trials under a lenient definition. However, this percentage dropped to 43.1% when using the more stringent criteria. This finding parallels Mandelblatt and colleagues' study (2005) that found similar levels of intentions to engage in clinical trials.¹³ Using a more lenient definition, we found that predisposing factors (language, acculturation, and marital status) and need factors (breast cancer risk perception) were associated with Latinas clinical trials participation intentions. Yet, under the more stringent definition, women who reported that they would be motivated to enroll in clinical trials to help relatives if they cancer (a predisposing factor) were more likely to report being willing to participate in a clinical trial.

The significant association between language acculturation and perceived cancer risk with participant's willingness to participate in clinical trials was not found in previous studies with Latinas.^{12,13} The finding that women with more language acculturation (spoke both English and Spanish) were more reluctant to participate in clinical trials may reflect greater experience with the US healthcare system and thus, more negative healthcare interactions. Discrimination ratings have been found to be higher in Latinas with greater language acculturation compared to those who were monolingual (Spanish-speaking only).²⁹

Only 53% of the sample was aware of clinical trials. Thus, this is an area for opportunities to educate the Latino community about research and particularly the importance of having the Latino community represented in prevention trials. Increasing awareness and knowledge is

important as prior studies show that Latinas who have higher knowledge about clinical trials have higher intentions to enroll¹² and when they are asked to participate in clinical trials they intend to participate at a rate comparable to their White counterparts.³⁰ Qualitative studies suggest that a lack of culturally adapted information hinders underserved population's awareness of clinical trials.^{7,14} Thus, developing culturally adapted videos and bilingual education websites may increase Latino's awareness and knowledge about clinical trials. Indeed, strategies to overcome language and cultural barriers have proven to be successful in recruiting Latinas for cancer prevention and control studies³¹ and for clinical trials in particular.^{28,32} For instance, the Cancer Therapy and Research Center in Texas developed a strategic focus to improve Latino recruitment into clinical trial, achieving 45% Latino accrual rate in 2012. Strategies consisted on developing bilingual information, brochures, and consents, bilingual staff, information dissemination plan, and the provision of a Minority Accrual Plan to delineate recruitment strategies to overcome barriers and monitor minority enrollment progress.²⁸

Although it was not statistically significant, there was a trend for Latinas who used other sources of information to have higher intentions to participate in clinical trials when using a more stringent definition. This goes in line with Wallington and colleagues' (2012) study that found that reporting the use of doctors as a source of information was not related to intentions to participate in clinical trials whereas the use of Cancer Information Services increased intentions to participate.¹² However, doctors tend to be the main source of medical information for Latinas,¹² including in this sample. Thus, training physicians to be more culturally aware and educating them to not only suggest clinical trials, but also provide other information sources for Latina patients regarding clinical trials and cancer related information would lessen disparity.

Latinas in this sample reported a higher motivation to enroll in clinical trials if they thought that by doing so they could help their family or someone they knew (vs. individual compensation). In fact, using the most stringent definition, the only factor associated with increased likelihood to enroll in clinical trials was participant's motivation to help family members. Altruism and personal benefits are motivations related to clinical trials participation.³³ Thus, our findings suggest that altruism may constitute a strong motivator for Latinas, supporting prior studies that highlight the importance of collectivism³⁴ and familism^{35,36} among Latino. Thus, tailoring clinical trials participation messages to highlight the potential benefits for family members and others may increase Latino participation.

This study has several important strengths, including solely focusing on the underserved Latina population (mostly Spanish monolingual with low education level) and the employment of a culturally diverse research team and bilingual staff at the participating clinics. Additionally, examining previously explored factors in Latina immigrants as well as the new variables that have not been examined constitute a significant contribution to the scarce literature on Latinos participation in clinical trials. There are limitations to this study that are noteworthy. The results of this study may overestimate Latinas' willingness to participate in randomized clinical trials, because recruitment of participants by bilingual staff has the possibility of increasing the level of comfort or willingness within participants

than if the staff were not culturally or linguistically concordant. The study assessed participation intentions but we did not measure actual participation in clinical trials. Finally, due to the sample characteristics, the results of this study may not necessarily generalize to Latino men, Latina women from different age groups or those who live in other geographic locations or Latino populations who do not have access to healthcare providers that serve primarily Latina immigrants.

Conclusion

Despite legislation requiring inclusion of minorities in clinical trials,⁵ Latinas are underrepresented.⁹ This study can inform efforts to increase clinical trial participation in Latinas by highlighting important motivators to participation specific to Latinas and informing future interventions aimed at encouraging participation in clinical trials in a culturally sensitive and effective way.

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References

1. Varmus, H. Testimony on the value of clinical research by Harold Varmus, M.D. director. National Institutes of Health; 1997. <http://www.hhs.gov/asl/testify/t971009a.html>
2. American Cancer Society. Why do we need clinical trials?. <http://www.cancer.org/treatment/treatmentsandsideeffects/clinicaltrials/whatyouneedtoknowaboutclinicaltrials/clinical-trials-what-you-need-to-know-why-do-we-need-clin-trials>. Updated 10-31-2014
3. Baquet CR, Henderson K, Commiskey P, Morrow JN. Clinical trials: The art of enrollment. *Semin Oncol Nurs*. 2008; 24(4):262–269.10.1016/j.soncn.2008.08.006 [PubMed: 19000600]
4. Langford AT, Resnicow K, Dimond EP, et al. Racial/ethnic differences in clinical trial enrollment, refusal rates, ineligibility, and reasons for decline among patients at sites in the national cancer institute's community cancer centers program. *Cancer*. 2014; 120(6):877–884.10.1002/cncr.28483 [PubMed: 24327389]
5. National Institutes of Health. The NIH revitalization act of 1993:Sec. 131: Clinical and research equity regarding women and minorities. <http://orwh.od.nih.gov/about/pdf/NIH-Revitalization-Act-1993.pdf>
6. Vickers SM, Fouad MN. An overview of EMPaCT and fundamental issues affecting minority participation in cancer clinical trials: Enhancing minority participation in clinical trials (EMPaCT): Laying the groundwork for improving minority clinical trial accrual. *Cancer*. 2014; 120(Suppl 7): 1087–1090.10.1002/cncr.28569 [PubMed: 24643645]
7. Ford JG, Howerton MW, Lai GY, et al. Barriers to recruiting underrepresented populations to cancer clinical trials: A systematic review. *Cancer*. 2008; 112(2):228–242.10.1002/cncr.23157 [PubMed: 18008363]
8. US Census Bureau. [Accessed 4-15-2013, 2013.] <http://www.census.gov/2010census/>. Updated 2010
9. Murthy VH, Krumholz HM, Gross CP. Participation in cancer clinical trials: Race-, sex-, and age-based disparities. *JAMA*. 2004; 291(1538–3598; 0098–7484; 22):2720–2726. [PubMed: 15187053]

10. Kwiatkowski K, Coe K, Bailar JC, Swanson GM. Inclusion of minorities and women in cancer clinical trials, a decade later: Have we improved? *Cancer*. 2013; 119(16):2956–2963.10.1002/cncr.28168 [PubMed: 23674318]
11. Ramirez A, Perez-Stable E, Penedo F, et al. Reducing time-to-treatment in underserved Latinas with breast cancer: The six cities study. *Cancer*. 2014; 120(5):752–760.10.1002/cncr.28450 [PubMed: 24222098]
12. Wallington SF, Luta G, Noone AM, et al. Assessing the awareness of and willingness to participate in cancer clinical trials among immigrant Latinos. *J Community Health*. 2012; 37(2):335–343.10.1007/s10900-011-9450-y [PubMed: 21805372]
13. Mandelblatt J, Kaufman E, Sheppard VB, Pomeroy J, Kavanaugh J, Canar J, Huerta E. Breast cancer prevention in community clinics: Will low income Latina patients participate in clinical trials? *Prev Med*. 2005; 40(6):611–618. [PubMed: 15850856]
14. Ellington L, Wahab S, Sahami Martin S, Field R, Mooney KH. Factors that influence Spanish- and English-speaking participants' decision to enroll in cancer randomized clinical trials. *Psychooncology*. 2006; 15(4):273–284.10.1002/pon.943 [PubMed: 15973647]
15. Lawsin CR, Borrayo EA, Edwards R, Belloso C. Community readiness to promote Latinas' participation in breast cancer prevention clinical trials. *Health & Social Care in the Community*. 2007; 15(4):369–378. [PubMed: 17578398]
16. Aday LA. Equity, accessibility, and ethical issues: Is the U.S. health care reform debate asking the right questions? *Am Behav Sci*. 1993; 36(6):724–740. [PubMed: 11657446]
17. Gelberg L, Andersen RM, Leake BD. The behavioral model for vulnerable populations: Application to medical care use and outcomes. *Health Serv Res*. 2000; 34(6):1273–1302. [PubMed: 10654830]
18. Gielen, AC.; McDonald, EM.; Gary, TL.; Bone, LR. Using the PRECEDE/PROCEED model to apply health behavior theories. In: Glanz, K.; Rimer, BK.; Viswanath, K., editors. *Health behavior and health education: Theory, research and practice*. 4. San Francisco: Jossey-Bass; 2008. p. 407-433.
19. Andersen RM. Revisiting the behavioral model and access to medical care: Does it matter? *J Health Soc Behav*. 1995; 36(1):1–10. [PubMed: 7738325]
20. Andersen RM. A behavioral model of families' use of health services. *Research Ser*. 1968:25.
21. Haynes, MA.; Smedley, BD., editors. *Institute of medicine (US) committee on cancer research among minorities and the medically underserved*. Washington (DC): National Academy of Sciences; 1999. NBK1796 [bookaccession]
22. Chen MS Jr, Lara PN, Dang JH, Paterniti DA, Kelly K. Twenty years post-NIH revitalization act: Enhancing minority participation in clinical trials (EMPaCT): Laying the groundwork for improving minority clinical trial accrual: Renewing the case for enhancing minority participation in cancer clinical trials. *Cancer*. 2014; 120(Suppl 7):1091–1096.10.1002/cncr.28575 [PubMed: 24643646]
23. Sheppard VB, Wang J, Yi B, et al. Are health-care relationships important for mammography adherence in latin@s? *J Gen Intern Med*. 2008:1525–1497. [PubMed: 18521689]
24. Gonzalez P, Castaneda SF, Mills PJ, Talavera GA, Elder JP, Gallo LC. Determinants of breast, cervical and colorectal cancer screening adherence in Mexican-American women. *J Community Health*. 2012; 37(2):421–433.10.1007/s10900-011-9459-2 [PubMed: 21874364]
25. Marin G, Marin BV. Research with Hispanic populations *Applied social research methods series*. Applied Social Research Methods Series. 1991; 23:23.
26. Bird ST, Bogart LM. Perceived race-based and socioeconomic status (SES)-based discrimination in interactions with health care providers. *Ethn Dis*. 2001; 11(1049–510; 3):554–563. [PubMed: 11572421]
27. Safran DG, Kosinski M, Tarlov AR, et al. The primary care assessment survey: Tests of data quality and measurement performance. *Med Care*. 1998; 36(0025–7079; 5):728–739. [PubMed: 9596063]
28. Parra A, Karnad AB, Thompson IM. Hispanic accrual on randomized cancer clinical trials: A call to arms. *J Clin Oncol*. 2014; 32(18):1871–1873.10.1200/JCO.2013.51.7946 [PubMed: 24841978]

29. Sheppard VB, Williams KP, Wang J, Shavers V, Mandelblatt JS. An examination of factors associated with healthcare discrimination in Latina immigrants: The role of healthcare relationships and language. *Journal of the National Medical Association*. 2014; 106(1):15–22.
30. Lara M, Gamboa C, Kahramanian MI, Morales LS, Bautista DE. Acculturation and Latino health in the united states: A review of the literature and its sociopolitical context. *Annu Rev Public Health*. 2005; 26:367–397.10.1146/annurev.publhealth.26.021304.144615 [PubMed: 15760294]
31. Sheppard VB, Cox LS, Kanamori MJ, et al. Brief report: If you build it, they will come: Methods for recruiting Latinos into cancer research. *J Gen Intern Med*. 2005; 20(5):444–447. JG104046_1 [pii]. [PubMed: 15963169]
32. Larkey LK, Ogden SL, Tenorio S, Ewell T. Latino recruitment to cancer prevention/screening trials in the southwest: Setting a research agenda. *Appl Nurs Res*. 2008; 21(1):30–39.10.1016/j.apnr.2006.09.003 [PubMed: 18226761]
33. Habersack M, Luschin G. Insecurities of women regarding breast cancer research: A qualitative study. *PLoS One*. 2013; 8(12):e81770.10.1371/journal.pone.0081770 [PubMed: 24312584]
34. Hofstede G. Motivation, leadership, and organization: Do American theories apply abroad? *Organ Dyn*. 1980; 9(1):42–63. [http://dx.doi.org/10.1016/0090-2616\(80\)90013-3](http://dx.doi.org/10.1016/0090-2616(80)90013-3).
35. Graves KD, Jensen RE, Canar J, et al. Through the lens of culture: Quality of life among Latina breast cancer survivors. *Breast Cancer Res Treat*. 2012; 136(2):603–613.10.1007/s10549-012-2291-2 [PubMed: 23085764]
36. Lopez-Class M, Perret-Gentil M, Kreling B, Caicedo L, Mandelblatt J, Graves KD. Quality of life among immigrant Latina breast cancer survivors: Realities of culture and enhancing cancer care. *J Cancer Educ*. 2011; 26(4):724–733.10.1007/s13187-011-0249-4 [PubMed: 21706194]

Sample Characteristics and Associations with Intent to Participate in Clinical Trials (N=168)

Table 1

Predictors	Total N(%)	Lenient Definition %		Strict Definition %		P-Value	
<i>Predisposing Factors</i>							
Age (m=51.63; SD=8.9)							
40–49 years old	81(48.2)	88.9	11.1	0.091	46.9	53.1	0.336
50 & Over	87(51.8)	79.3	20.7		39.5	60.5	
<i>Education</i>							
HS or less	88(52.4)	84.1	15.9	0.952	35.2	64.8	0.030
Some College or more	80(47.6)	83.8	16.2		51.9	48.1	
<i>Country of Origin</i>							
Central America	52(31.0)	82.7	17.3	0.958	36.5	63.5	0.481
North America	19(11.3)	84.2	15.8		50.0	50.0	
South America	97(57.7)	84.5	15.5		45.4	54.6	
<i>Home Language</i>							
Spanish Only	125(74.4)	88.8	11.2	0.007	46.8	53.2	0.129
Spanish and English	42(25.0)	71.4	28.6		33.3	66.7	
Missing	1(0.6)						
<i>Marital Status</i>							
Married/Living as married	96(57.1)	89.6	10.4	0.021	45.8	54.2	0.409
Single (divorced, widowed)	72(42.9)	76.4	23.6		39.4	60.6	
<i>Insurance Status</i>							
Yes	71(42.3)	81.7	18.3	0.417	49.3	50.7	0.203
No	95(56.5)	86.3	13.7		39.4	60.6	
Missing	2(1.2)						
<i>Clinical Trial Awareness</i>							
Yes	89(53.0)	82.0	18.0	0.378	45.5	54.5	0.615
No	77(45.8)	87.0	13.0		41.6	58.4	
Missing	2(1.2)						
<i>Motivators-help family</i>							

Predictors	Total N(%)	Lenient Definition %		Strict Definition %		P-Value
		Yes	No	Yes	No	
Yes	124(73.8)	86.3	13.7	50.4	49.6	0.029
No	26(15.5)	69.2	30.8	26.9	73.1	
Missing	18(10.7)					
Motivators-help community						
Yes	116(69.0)	89.7	10.3	48.3	51.7	0.650
No	33(19.6)	66.7	33.3	43.8	56.2	
Missing	19(11.3)					
Motivators-money						
Yes	77(45.8)	88.3	11.7	53.9	46.1	0.056
No	66(39.3)	80.3	19.7	37.9	62.1	
Missing	25(14.9)					
Enabling Factors						
Overall Trust in Provider						
High Trust	70(41.7)	82.9	17.1	37.7	62.3	0.245
Lower Trust	94(56.0)	84.0	16.0	46.8	53.2	
Missing	4(2.4)					
Source of Health Info						
Doctor/Hospital	104(61.9)	85.6	14.4	39.8	60.2	0.380
Others	62(36.9)	80.6	19.4	46.8	53.2	
Missing	2(1.2)					
Experienced Discrimination						
Yes	68(40.5)	75.0	25.0	38.2	61.8	0.298
No	98(58.3)	89.8	10.2	46.4	53.6	
Missing	2(1.2)					
Recruitment Source						
LACRC Clinic	99(58.9)	84.8	15.2	38.8	61.2	0.177
Community	69(41.1)	82.6	17.4	49.3	50.7	
Need Factors						
Perceived Breast Cancer						

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Predictors	Total N(%)	Lenient Definition %		Strict Definition %		P-Value
		Yes	No	Yes	No	
Risk						
High	106(63.1)	89.6	10.4	41.5	58.5	0.581
Low	62(36.9)	74.2	25.8	54.1	45.9	

Table 2

Adjusted Odds Ratios (OR) for the Associations with Intention to Participate in RCTs

Variables	OR (95%CI)	P-Values
<i>Lenient Intent</i>		
Home Language		
Spanish and English	1.0	.004
Spanish Only	6.2(1.82–20.99)	
Marital Status		
Married/Living as married	1.0	.018
Single (divorced, widowed)	.25(.08–.79)	
Experience Discrimination		
Yes	1.0	.149
No	2.24(.75–6.74)	
Perceived Breast Cancer Risk		
High	1.0	.006
Low	.20(.06–.63)	
Motivation-help family		
Yes	1.0	.450
No	.58(.14–2.37)	
Motivation-help community		
Yes	1.0	.261
No	.49(.14–1.69)	
<i>Strict Intent</i>		
Education		
Some College or more	1.0	.056
High School or less	.52(.27–1.02)	
Motivation-help family		
Yes	1.0	.023
No	.33(.13–.86)	