Predictors of retention in smoking cessation treatment among Latino smokers in the Northeast United States

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Abstract

Introduction. Only one previous study on minority retention in smoking cessation treatment has been conducted (Nevid JS, Javier RA, Moulton JL III. Factors predicting participant attrition in a community-based, culturally specific smoking cessation program for Hispanic smokers. Health Psychol 1996; 15: 226–29). We investigated predictors of intervention completion and assessment completion among Latino smokers (n = 131) with asthmatic children participating in a home-based asthma education study that included smoking cessation counseling. Methods. We examined a variety of pretreatment demographic and psychosocial predictors of intervention completion (completing all three home visits versus <3), assessment completion (attendance/ not) and total study participation (completing all six contacts versus <6). Results. Lower levels of depressed mood (OR = 0.912, 95% CI: 0.857–0.971, P < 0.01) and a strong belief that quitting smoking would benefit the child’s asthma (OR = 1.69, 95% CI: 1.04–2.74, P < 0.05). Unemployed participants were more likely to complete all six study contacts than those who were working (OR = 0.37, 95% CI: 0.14–0.99, P < 0.05). Discussion. Findings suggest the need to tailor retention strategies during active treatment and follow-up assessments to target those who at risk of dropping out.

Introduction

In 1994, the National Institutes of Health Revitalization Act mandated inclusion of ethnic minorities into clinical research in order to address health disparities. Inclusion of minorities into these trials has met with limited success [1]. Research is needed on methods to enhance minority participation in treatment trials [1, 2]. There are a few exploratory studies that examine treatment retention among non-Latino smokers [3, 4]. Heavier smokers with greater depression are more likely to drop out from smoking cessation treatment [3]. Participation in smoking cessation treatment is associated with older age, smoking fewer cigarettes per day, having children and being
married and female [5]. Given that different definitions of treatment retention were used in each study, it is difficult to make conclusions from these studies. There is a lack of consensus on how to define retention in smoking cessation treatment [4].

Only a few studies have examined predictors of minority treatment retention. In a study to reduce smoking, depression and partner violence among minority pregnant smokers, El-Khorazaty et al. [1] found that study non-completers were more likely to be single, use drugs and had less than a high school education than study completers. Nevid et al. [6] examined predictors of attrition among 93 Latino smokers enrolled in a community-based smoking cessation program. Participants received either a culturally specific multi-component behavioral program (8-week group treatment sessions) or an enhanced self-help condition using manuals, twice-monthly supportive phone calls and participation in a single group session. Attrition was defined as withdrawal after attendance in at least one group treatment session. Across conditions, study non-completers were more likely to report cardiovascular problems, poorer general health relative to their peers, lower incomes and reported greater confidence in their ability to stop smoking than those who attended all treatment sessions [6]. In contrast, in a study conducted with a general population, Wagner et al. [5] reported that poorer health was associated with ‘greater’ completion of smoking cessation programs. These findings raise important questions about the nature of motivation for treatment participation among Latino versus non-Latino smokers. An unexplored question is whether concerns about one’s own health status influences motivation to participate in treatment [7] or whether participants are motivated by the potential benefits their participation may have on family members (i.e. a child with asthma). Given the emphasis on family connectedness attributed to Latinos [8], family health could be an important motivating factor to enhance retention.

In this paper, we examine predictors of retention among Latino caregivers receiving asthma education and smoking cessation counseling. We targeted this population because the prevalence of pediatric asthma is very high, at 6.5 million children (9.7%) [9]. Asthma prevalence and morbidity are higher among Latinos than other racial/ethnic groups [10, 11, 12] and exposure to second hand smoke increases risk for asthma onset and exacerbation [13]. In one study, 59% of urban minority families with children with asthma reported at least one smoker in the home [14]. Given this, it is surprising that there are only seven treatment trials focusing on helping Latino smokers quit [15–20, 55] and only one that specifically targets Latino smokers who have children with asthma [21].

Although most asthma education curricula address smoke exposure as a trigger for asthma exacerbations, they do not typically provide strategies for smoking cessation. Therefore, our inclusion of a smoking cessation intervention in the context of asthma education targets the needs of minority families, many of whom would not attend stand-alone smoking cessation treatment. Because our home-based design minimizes the possibility of attrition due to the stigma associated with seeking treatment or lack of transportation, it provides a unique outreach opportunity to this population. Further, participants did not have to want quit smoking to be in the program. Therefore, our sample consisted of smokers who varied in the motivation to quit.

Our study also adds to the current research because we examine both predictors of treatment retention and predictors of assessment completion. We also included a comprehensive constellation of predictors that have not yet been assessed in a single study. We hypothesized that predictors of intervention completion would differ from predictors of assessment completion. Predictors were categorized into six conceptual groups: demographics, psychosocial, smoking attitudes and behaviors, and cultural variables. Some variables, such as depression, have been previously examined in the literature and found to predict dropout in non-Latinos [3]. Others, such as self-efficacy, have not been previously investigated as predictors of retention but were included in the current paper because there is evidence of associations with smoking cessation [22, 23]. We also included variables that have not been studied before, such as perceived risk to self and child because we believe these variables may impact treat-
ment participation, as they have been shown to be predictive of smoking cessation [24]. Our approach is exploratory because we believe that identifying potential predictors is an important first step toward building a conceptual model of minority treatment retention, to improve treatment retention and to prevent drop out. Exploratory approaches are warranted when investigating an understudied area [25, 26] to generate hypotheses and to guide emerging theory.

Methods

Participants
Participants were recruited from: the Emergency Department (n = 22), inpatient hospitalization (n = 5), outpatient clinics (n = 24), a low income health insurance plan (n = 44), flyers (n = 7), Latino agencies and cultural events (n = 2), other research projects (n = 6), other participants enrolled in the study (n = 18) and other sources (n = 5). Of the 211 study-eligible participants, 133 were enrolled (63% eligible recruited). Of the remaining 78 not recruited (37%), 71 were unable to be contacted, 1 was dropped by the project and 6 were unwilling to participate. The number lost to follow-up at the end of treatment was 19% (n = 25), and follow-up rates were n = 98 (74%), n = 87 (65%) and n = 95 (71%) for assessments at end of treatment, 2- and 3-month follow-ups.

Potential participants were told that they would receive home-based asthma education and that they would be discussing their smoking during these visits, although they did not have to quit or want to quit smoking in order to qualify. Inclusion criteria were: being a Latino caregiver over the age of 18, smoking ≥3 cigarettes per day and ≥100 cigarettes in their lifetime, and not currently receiving smoking cessation counseling or pharmacological treatment for smoking cessation within the last 3 months. This study received ethical approval from our institution’s Human Subjects Review Board.

Interventions
For both groups, Visit 1 focused on asthma education based on an interactive educational curriculum (‘Beating Asthma’) derived from the National Health, Lung and Blood Institute [27, 28]. Visit 2 focused on asthma education and one of two theory-based smoking cessation interventions to which participants were randomly assigned [Precaution Adoption Model (PAM) versus Behavioral Action Model (BAM)], and Visit 3 was entirely spent on PAM or BAM counseling. PAM focused on augmenting smokers’ risk perception and readiness to quit using Motivational Interviewing. BAM focused on education and problem solving regarding smoking and was based on clinical practice guidelines [29]. PAM counseling was designed to be consistent with Latino cultural values [21, 29]. For example, focus groups were conducted with Latino smokers prior to project implementation to enhance cultural appropriateness. To boost intervention relevance, participants suggested emphasizing the importance of family connection. Personalismo, the Latino value of interacting as compassionate persons instead of impersonal players of specific roles [30] was incorporated into the PAM intervention by having the Latina Health Educator gain familiarity with the family and share minor details of her own life [21]. Our bilingual and bicultural research staff, also members of the Latino community, gave feedback to refine the cultural tailoring.

Treatment fidelity
Research assistants made a minimum of 6 weekly call attempts to participants or their emergency contacts and used call logs to track contact attempts. New study staff shadowed existing study staff and observed patients for 2 weeks before taking on their own caseload and making visits independently. Home visits for both intervention and assessments were conducted weekdays, weeknights and sometimes during the weekend.

The Latina health educator conducted all three treatment visits for both BAM and PAM in either English or Spanish (depending on participant preference) and was supervised weekly by two licensed clinical psychologists, one certified in MI and the other in Asthma Education. More than half of the participants requested that visits be conducted in Spanish. Several steps were taken to reduce contamination between
conditions. First, all counseling sessions were audio-taped and 20% were reviewed by the above supervisors. Feedback was given to the counselor during weekly supervision sessions. Second, the counseling followed a specific manualized protocol. Third, participants were given a ‘Patient Exit Interview’ that specifically assessed contamination and whether or not there were differences in patient satisfaction between the two conditions. There was no evidence of treatment contamination or differential satisfaction between the conditions [21].

Measures
Research assistants were blinded to treatment condition and administered baseline assessment and all three follow-up assessments (end of treatment, 2 and 3 months) in person or over the telephone, depending on participant preference (Table I). Participants were compensated $15.00 for each assessment. Measures were translated and back translated for accuracy and comprehension.

Variables measured at pretreatment (baseline)

Demographic variables. Demographic variables for the parent and child included age, gender, socioeconomic status, the number of Emergency Room visits related to the child’s asthma in the past year and the child’s asthma morbidity, assessed by the Asthma Functional Severity Scale [31] (items assess asthma symptoms over the past month and their effect on general activity and school attendance).

Smoking history and attitudes. We assessed the number of cigarettes smoked daily, age of smoking initiation and whether or not the smoker received doctor advice to quit smoking at any time. Nicotine dependence was assessed using the six-item Fagerstrom Test for Nicotine Dependence, which is internally consistent (alpha = 0.70) [32, 33] and valid [34]. Smoking attitudes were assessed using the Contemplation Ladder, a one-item measure with 10 answer choices corresponding to different levels of readiness to quit smoking, which demonstrates good reliability and validity [35, 36]. Self-efficacy to quit smoking was assessed using the Confidence Questionnaire [37, 38], which queries confidence to resist smoking across situations and has demonstrated good reliability (alpha = 0.85) and validity. The pros and cons of smoking were measured with the six-item version of the Smoking Decisional Balance Scale, demonstrated to be reliable (alpha = 0.88 and 0.89 for pros and cons, respectively) and valid [39].

We assessed participants’ perceived vulnerability to the health effects of smoking (Perceived Vulnerability—Self: ‘If you continue to smoke, how likely is it that you will develop (1) lung cancer, (2) other lung disease, and (3) heart disease?’) and perceived benefits of quitting smoking (Precaution Effectiveness—Self: ‘If you stop smoking, how much do you think that would reduce your risk for developing (1) lung cancer, (2) other lung disease, and (3) heart disease?’). We assessed how much participants believed that their smoking worsened their child’s asthma symptoms (Perceived Vulnerability—Child: ‘How concerned are you that smoking will make your child’s asthma worse?’) as well as how much they believed that quitting would improve their child’s asthma symptoms (Precaution Effectiveness—Child; ‘If you stop smoking, how much do you think that would decrease your child’s asthma symptoms?’).

Psychosocial variables. Depressed mood was measured using the Center for Epidemiologic Studies Depression Scale, which has shown reliability, validity and ability to predict smoking outcomes [40, 41, 42]. The number of friends who smoke was assessed by self-report (i.e. 1 = none smoke, 5 = all smoke).

Cultural variables. We measured the caregiver’s country of residence (US or non-US) and acculturative level. The 12-item Short Acculturation scale for Hispanics ranges from 12 to 60 (higher scores suggest greater acculturation) and has good internal reliability (0.92) [43].

Dependent variables. There is a lack of consensus regarding how to define treatment completion; studies range from participants having to complete 10–50% of sessions before they are considered ‘completers’ [3, 4, 5]. We decided to define intervention completion as completing all three visits
because our full smoking treatment (either BAM or PAM) was delivered in visits 2 and 3. Intervention completers are defined as those who received the total smoking treatment (all three visits) and intervention non-completers as those who completed one or two visits. We defined assessment completion as completing all three-assessment follow-ups (end of treatment, 2- and 3-month follow-ups) consistent with prior research [4]. Assessment non-completers were defined as those who did not complete any assessments. Total study completers were defined as having completed all six of the required contacts (three intervention + three assessments), and study non-completers were defined as completing five or fewer required contacts.

**Analyses**

Analyses were conducted in two phases. First, differences on independent variables between completers and non-completers were computed for each of the three dependent variables (intervention completion, assessment completion and total study completion) using univariate models (chi-squares and t-tests). Second, variables that achieved
In these univariate models were then included in three multiple regression models, one for each dependent variable. Multivariate models controlled for treatment group, and statistical significance was set at $P \leq 0.05$. Independent variables are measured at baseline (pretreatment) and dependent variables are measured after baseline.

## Results

Retention rates did not differ between BAM and PAM at end of treatment [72.1 versus 77.8%, $x^2 (1) = 0.57$, $P = 0.45$], 2-month [64.7 versus 66.7%, $x^2 (1) = 0.95$, $P = 0.62$] or 3-month follow-ups [67.6 versus 76.2%, $x^2 (1) = 1.18$, $P = 0.28$], so analyses were collapsed across treatment groups. Most of the sample completed all three intervention visits (82%; $n = 107$), 62% ($n = 81$) completed all three follow-up assessments, and 62% ($n = 81$) completed all six-study contacts.

The ethnic composition of the sample was 51.5% Puerto Rican, 23.1% Dominican, 10.8% Central American, 6.2% South American, 2.3% Mexican, 0.8% Cuban and 3.8% other. Nearly three quarters (73.3%) were female, with a mean age of 36.7 years (SD = 9.6). Roughly a third were employed full or part-time (34.9%), and 58.5% had less than a high school education. Nearly all participants (90%) reported earning <$20 000 a year. A little more than half (54%) was not married. Most (82%) were born outside the US, 49% were able to speak English and the mean length US residency was 16.5 years (SD = 11.4).

The average score on the Acculturation Scale was 2.26 (SD = 2.0) indicating low to moderate acculturation levels. The average number of cigarettes smoked daily was 10.8 (SD = 8.4). The mean Fagerstrom score was 3.9 (SD = 2.5), indicating moderate nicotine dependence, and 76% of participants reported at least one previous quit attempt in their lifetime ($M = 3.15$, SD = 5.0). The average children’s age was 7.1 years (SD = 4.9) and 63% were male. In the previous year, 63.6% had been to the Emergency Department and 66.3% had been hospitalized for asthma.

## Intervention completion

Univariate analyses indicated that intervention completers reported significantly fewer pros of smoking [$t = 3.36 (119)$, $P < 0.001$] and greater motivation to quit smoking at pretreatment [$t = -2.11 (129)$, $P < 0.05$] than intervention non-completers. At pretreatment, intervention completers reported greater confidence to quit [$t = -1.96 (107)$, $P = 0.052$], lower levels of depressed mood [$t = 1.82 (127)$, $P = 0.07$] and earlier age of smoking initiation [$t = 1.78 (129)$, $P = 0.077$] compared with intervention non-completers (Table I). After controlling for treatment group, results from the multivariate model indicated that, at pretreatment, lower levels of depressed mood (OR = 0.91, 95% CI: 0.86–0.97, $P < 0.01$) and fewer pros of smoking (OR = 0.88, 95% CI: 0.81–0.96, $P < 0.01$) predicted subsequent intervention completion (Table II).

## Assessment completion

In univariate analyses, assessment completers reported at pretreatment that they had a greater proportion of friends who smoked [$t = 2.71 (106)$, $P < 0.05$] and fewer pros of smoking [$t = -2.71 (97)$, $P < 0.01$] than assessment non-completers. At pretreatment, assessment completers were more likely to believe that smoking affects their child’s asthma [$t = -1.68 (106)$, $P < 0.10$] and that quitting smoking would help their child’s asthma [$t = -1.79 (102)$, $P < 0.10$] than assessment non-completers (Table I). After controlling for treatment group, results from the multivariate model (Table II) indicated that, at pretreatment, assessment completers endorsed significantly fewer pros of smoking (OR = 0.87, 95% CI: 0.81–0.95, $P < 0.001$) and were significantly more likely to believe that quitting smoking would benefit their child’s asthma (OR = 1.69, 95% CI: 1.04–2.74, $P < 0.05$). Participants who had more friends who smoked were twice as likely to subsequently complete assessments (OR = 2.09, 95% CI: 1.23–3.56, $P < 0.01$).

## Total study completion

Total study completers were less likely to be working [28.8 versus 44.9%, $x^2 (1) = 3.49$, $P = 0.10$],
more likely to receive doctor advice to quit smoking [81.5 versus 68%, $x^2 (1) = 3.11, P = 0.07$] and had a greater number of friends who were smokers at pretreatment [3.2 versus 2.8%, $x^2 (1), P < 0.05$] compared with those who did not complete all of the study contacts (Table I).

After controlling for treatment group, the results from the multivariate model (Table II) indicated that only employment status was significantly and prospectively associated with total study completion. Those working full or part-time were less likely to complete all six study contacts relative to those who were unemployed (OR = 0.42, 95%, CI: 0.19–0.93, $P < 0.05$).

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>OR</th>
<th>95% CI</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>DV: intervention completion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment group</td>
<td>-0.737</td>
<td>0.660</td>
<td>0.478</td>
<td>0.131–1.742</td>
<td>n.s.</td>
</tr>
<tr>
<td>Depressed mood</td>
<td>-0.092</td>
<td>0.032</td>
<td>0.912</td>
<td>0.857–0.971</td>
<td>0.004</td>
</tr>
<tr>
<td>Motivation to quit</td>
<td>0.153</td>
<td>0.102</td>
<td>1.165</td>
<td>0.954–1.423</td>
<td>n.s.</td>
</tr>
<tr>
<td>Age of smoking initiation</td>
<td>-0.084</td>
<td>0.056</td>
<td>0.920</td>
<td>0.825–1.026</td>
<td>n.s.</td>
</tr>
<tr>
<td>Confidence to quit</td>
<td>0.013</td>
<td>0.012</td>
<td>1.013</td>
<td>0.990–1.036</td>
<td>n.s.</td>
</tr>
<tr>
<td>Pros of smoking</td>
<td>-0.126</td>
<td>0.044</td>
<td>0.882</td>
<td>0.809–0.961</td>
<td>0.004</td>
</tr>
<tr>
<td>DV: assessment completion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment group</td>
<td>-0.693</td>
<td>0.549</td>
<td>0.500</td>
<td>0.171–1.467</td>
<td>n.s.</td>
</tr>
<tr>
<td>Pros of smoking</td>
<td>-0.135</td>
<td>0.041</td>
<td>0.873</td>
<td>0.807–0.946</td>
<td>0.001</td>
</tr>
<tr>
<td>Friends who smoke</td>
<td>0.738</td>
<td>0.271</td>
<td>2.09</td>
<td>1.23–3.557</td>
<td>0.006</td>
</tr>
<tr>
<td>Perceived vulnerability regarding child’s asthma</td>
<td>0.435</td>
<td>0.358</td>
<td>1.55</td>
<td>0.766–3.114</td>
<td>n.s.</td>
</tr>
<tr>
<td>Precaution effectiveness regarding child’s asthma</td>
<td>0.524</td>
<td>0.247</td>
<td>1.69</td>
<td>1.04–2.74</td>
<td>0.034</td>
</tr>
<tr>
<td>DV: total study completion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Treatment group</td>
<td>0.024</td>
<td>0.390</td>
<td>0.951</td>
<td>0.359–2.52</td>
<td>n.s.</td>
</tr>
<tr>
<td>Friends who smoke</td>
<td>0.349</td>
<td>0.170</td>
<td>1.42</td>
<td>1.017–1.97</td>
<td>0.040</td>
</tr>
<tr>
<td>Percent working</td>
<td>-0.858</td>
<td>0.401</td>
<td>0.424</td>
<td>0.193–0.931</td>
<td>0.032</td>
</tr>
<tr>
<td>Percent who received doctor advice to quit smoking</td>
<td>0.610</td>
<td>0.445</td>
<td>1.84</td>
<td>0.769–4.41</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

DV = dependent variable; n.s. = not significant.

Our study addresses an important research gap by examining a comprehensive constellation of predictors of retention in a prospective trial of Latino smokers. Our study is the first to assess predictors of intervention completion separately from predictors of assessment completion. Overall, we report good retention rate: 74.8% completed intervention. This rate is lower than the rate reported by El-Khorazaty [1] (80%) who also examined a predominantly minority sample. Their study integrated study visits as part of participants’ pre-natal medical appointments, which may have contributed to their higher retention rates. Our participants were approached in the community or primary care settings and were then visited in their homes. Our retention rates may have been lower because immigration sweeps were conducted at the time, which could have resulted in reluctance to answer our calls.

Consistent with prior research on non-Latinos [3, 44], we found that less depressed participants were more likely to complete the intervention. Targeted efforts may be needed to retain both Latino and non-Latino smokers with depressed mood in smoking treatment. Greater support, consistent communication with study staff and additional counseling referrals could be offered to depressed smokers entering treatment in order to improve retention. On the other hand, smokers who endorsed fewer ‘pros’ of smoking were more likely to complete the intervention. Reporting fewer pros is associated with higher motivation to quit smoking [39, 45] and may indicate greater interest in smoking cessation treatment. Endorsing more ‘cons’ of smoking has been shown to
be related to higher smoking cessation rates and smoking cessation treatment completion [46]. Recruitment approaches that convey understanding of the pros and cons of smoking and quitting may enhance treatment participation. Treatment engagement may be enhanced by helping smokers resolve their ambivalence about behavior change [47].

Consistent with findings on intervention completion, those who endorsed fewer pros of smoking were more likely to complete assessments. In addition, assessment completers were more likely to have friends who smoked. These findings raise important questions about the potential influence of smokers’ social networks among Latinos on treatment participation or assessment completion. A review of the literature reveals little, if any, information on this relationship for minority populations. One hypothesis might be that individuals who smoke have more smokers in their social network and are poorer. Thus, the finding of a relationship between having more friends who smoke and assessment completion could be an epiphenomenon of low socioeconomic status (i.e. they completed more assessments to receive financial compensation). Smoking is more prevalent among those with the lowest levels of education, income and occupational status [48].

Concern over risk to one’s own health did not predict either intervention or assessment completion, but concern over worsening their child’s asthma emerged as a predictor of assessment completion. The fact that concern about the effects of smoking on one’s own health did not predict intervention retention among Latinos is surprising and warrants future study, as other studies of mostly Caucasian smokers have found that smokers’ perception of risk is predictive of cessation outcomes [24].

Assessment completers were more likely to believe that their quitting smoking would alleviate their child’s asthma symptoms than those who were non-assessment completers. Because completing follow-up assessments is distinct from treatment, our findings did not directly support the potential influences of benefit to family as a treatment participation motivator. However, the potential influence of parental beliefs about how their smoking affects the health of others, and their subsequent health behavior, remains an important issue to examine.

We found that unemployed participants were more likely to complete intervention and assessments than the employed, possibly because the unemployed were more available. Work schedules that conflict with study operating hour can make treatment participation difficult [1, 49, 50]. Researchers should remedy these logistic barriers [51] by offering extended study hours to accommodate participant work schedules [50] or by offering work or home site interventions.

Our findings overlap in some ways with prior research on non-Latinos and diverge in important respects. Depression remains as a predictor of treatment retention for both Latino and non-Latino samples, across different types of studies. Interestingly, among our Latino sample, smoking status (e.g. average daily cigarettes) did not predict treatment completion [53]. Participants smoked an average of nearly 11 (10.8) cigarettes a day, a rate which is considered to be light smoking and which has been documented to be prevalent among Latinos [54]. It is possible that the lack of relationship between number of cigarettes per day and treatment completion is due to their (lighter) smoking status, whereby (lighter) smokers may not perceive a health risk to their smoking or a concomitant need to participate in treatment. Other variables, such as depressed mood, were found to be more important for predicting treatment retention in the current study. We may need to target beliefs on how smoking affects the family, the pros and cons of smoking and the types of social networks that encourage or discourage treatment participation, to better understand this important issue.

Our study used tailored recruitment and retention strategies, including: using bilingual staff from the community [50, 52], consulting with community organizations on how to contact participants [52], using the same interviewers over time to promote a relationship with participants, providing flexible study hours [49] and conducting research at an accessible location. During home visits, our research staff developed relationships with participants’
friends and family members, consistent with the Latino value personalismo.

Limitations of the study include the fact that our study is a secondary analysis that we sampled only Latino smokers who have children with asthma and that more than half of these smokers were of Puerto Rican descent, which may not generalize to other Latino cultures. Similarly, it may be difficult to generalize our findings to smoking cessation programs that are not embedded within asthma treatment. However, given the high prevalence of household smoking among Latino families with asthmatic children, we believe that our results have both clinical and public health significance and could contribute to the development of theory in the area of retention. While predictors of attrition among Latino parents with asthmatic children may be different from Latinos who are not parents and/or who do not have children with asthma, our findings contribute to the increasing focus on treatment retention among minority smokers.

We conducted multiple comparisons, increasing the likelihood of yielding a statistically significant finding just based on the number of tests. However, Rothman and others [25, 26] have argued that correction for multiple tests may be deleterious in areas of emerging research, increasing the chance of Type 2 error, as well as the potential for discrepant and arbitrary findings (e.g. two researchers studying the same phenomenon might come to different conclusions based only on the fact that they tested a different number of outcomes). We chose an exploratory approach to identifying predictors because we did not want to miss any potentially important predictors. Understanding the unique predictors of intervention and assessment completion could inform clinical trials design and the development of novel recruitment and retention strategies at different study time-points for Latino smokers.

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Conflict of interest statement

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References


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